



*River Corridor Closure Project*

# Recovery Act Weekly Report

For the week ending June 3, 2011

Contract DE-AC06-05RL14655

*Protecting the Columbia River*

## Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds.

### 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

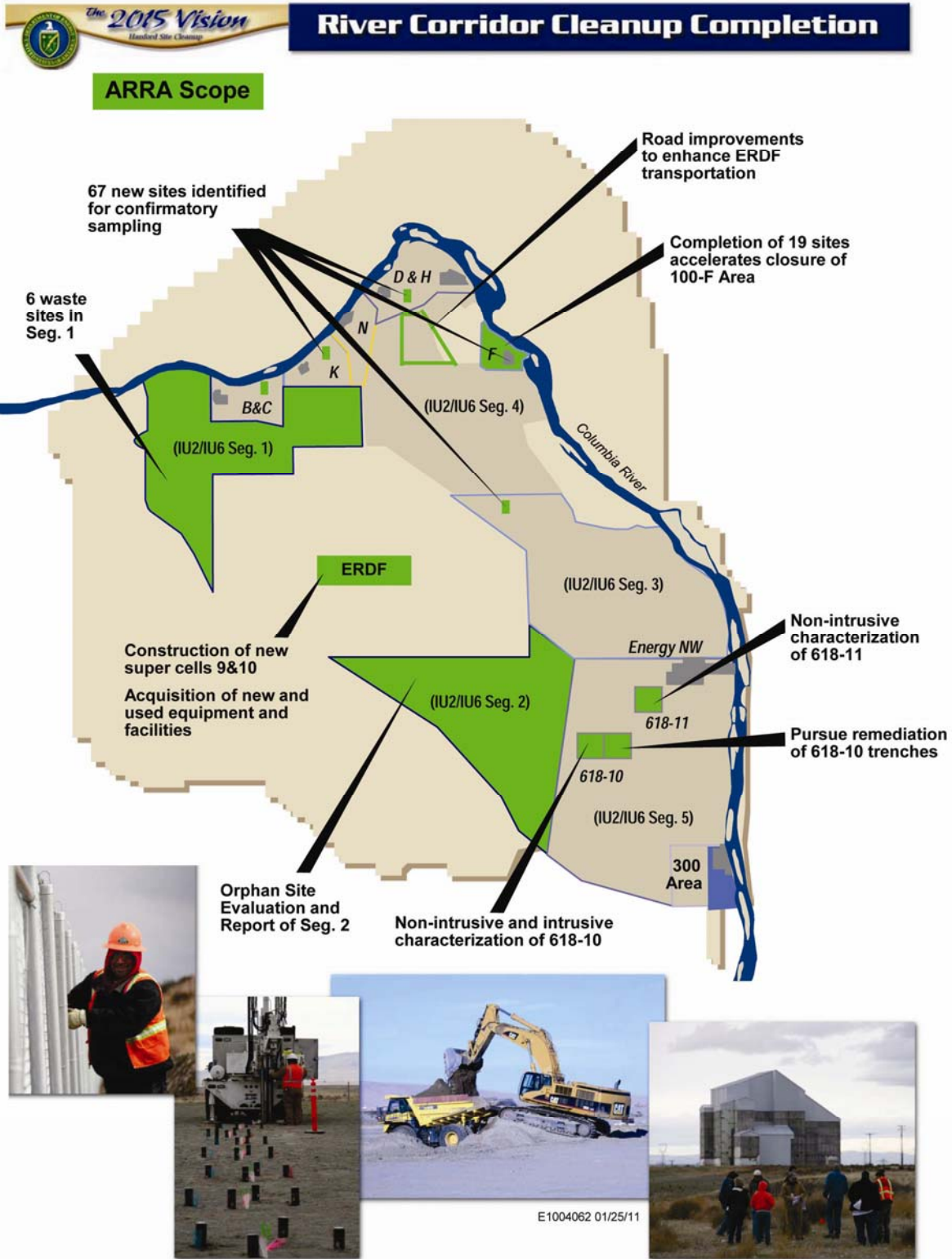
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 April 17, 2011, WCH and its subcontractors worked 449,002 hours of ARRA scope with no safety incidents.

## Hazard Reductions

Washington Closure Hanford's Safety, Health and Quality organization provided company managers with a "Memorial Day Refocus" to share with employees during staff meetings. The Refocus highlighted the following areas:

### Regaining Focus after the Holiday

- According to the National Safety Council:
  - Workplace injuries in the United States cost more than \$50 billion dollars annually
  - Workplace distractions and complacency are the direct cause of the majority of these injuries

### What Can We Do to Help Each Other Come Back to Work Safely?

- Be a leader when it comes to safety.
- Inspect your PPE and make sure your gear is in excellent condition.
- Make a conscious effort to drive safely and defensively.
- Take the time to get organized to ensure we are well prepared to get back to the task at hand.

### Lessons Learned

In the past 2 months, WCH had two serious incidents. What happened and why?

Incident No. 1: A truck driver struck a hand on a door latch while reaching for the door handle. The incident resulted in a laceration on the webbing of the worker's ring finger.

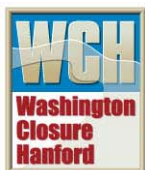
Likely cause of the incident: The worker performs the task of entering his vehicle every day without injury; in this case the likely cause of this incident was inattention to surroundings.

Incident No. 2: A traffic cone became lodged in the wheel well of a truck. When the driver dislodged the cone the driver's hand was lacerated when it came in contact with the fender.

Likely cause of this incident: In this case, the worker failed to don the proper personal protective equipment. Had the driver been wearing gloves at the time of the incident it is less likely an injury would have been sustained.

### Four Million Safe Hours

The employees and subcontractors of WCH have worked more than 4 million hours without a lost work day accident for the first time since work began on the River Corridor Closure Project in 2005.

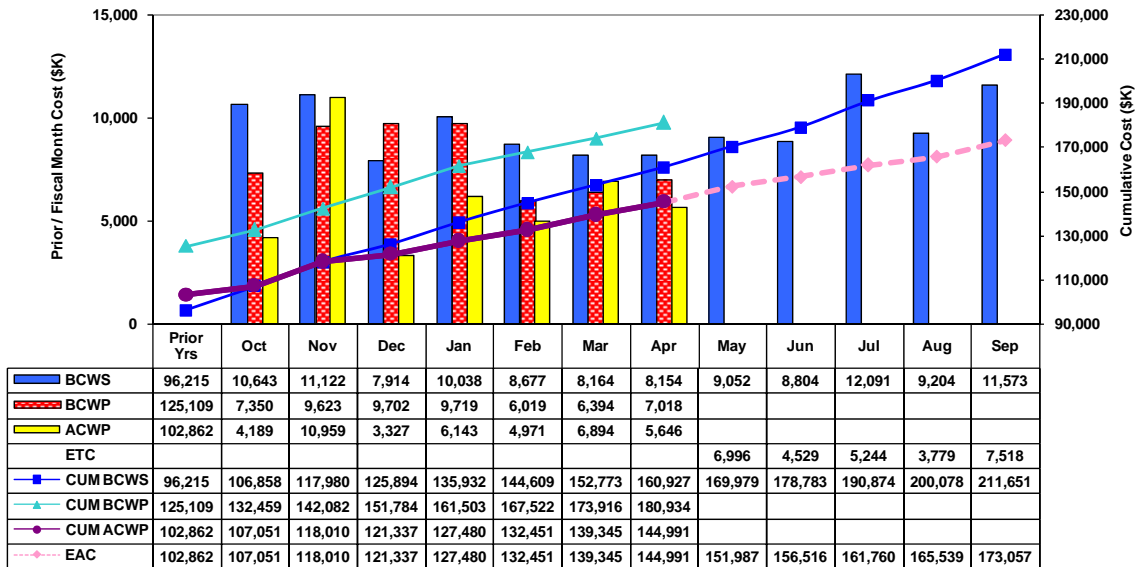




# Cost/Contract Status

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	2/17/11	Reallocate Funds for Capital Expenditures	\$233.6	\$214.4
281	4/5/11	Increase Cost Authority on RL-0041.R2	\$233.6	\$233.6
284	4/14/11	Reallocate Funds for Capital Expenditures	\$233.6	\$233.6
291	5/9/11	Authorization to charge ERDF operations to ARRA	\$233.6	\$233.6
298	5/20/11	Reallocate Funds for Capital Expenditures	\$233.6	\$233.6

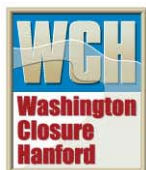
RCC Project - ARRA  
Current Performance Measurement Baseline (PMB)  
Prior Years / FY11 Fiscal Month



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

Apportionment Number	Apportionment Title		April 2011	Inception To Date	Cost Authority
RL-0041.R1	ERDF Cell Expansion	PMB	3,680	101,385	156,847
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	1,966	43,606	76,754
<b>Sub Total</b>		<b>PMB</b>	<b>5,646</b>	<b>144,991</b>	<b>233,601</b>
<b>Fee</b>			<b>575</b>	<b>14,389</b>	
<b>Total</b>			<b>6,221</b>	<b>159,380</b>	

\* PMB = Performance Measurement Baseline.



## ERDF

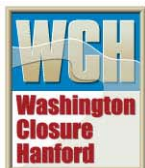
### **Super Cells 9 and 10 Construction**

WCH and subcontractors TradeWind Services and DelHur Industries completed construction of super cells 9 and 10 in February. Super cell 9 was placed into service in February, and super cell 10 was authorized for use in early May.

The addition of the super cells increased the Environmental Restoration Disposal Facility's (ERDF) capacity by 5.6 million tons for a total of 16.4 million tons. The expansion project, initially scheduled to be completed by September 30, 2011, was finished seven months ahead of schedule and nearly \$16.4 million under budget. The construction of super cell 10 included upgrades to the leachate transmission pipe and construction of two new leachate storage tanks.

The project team used lessons learned from previous cell construction to devise the design for the super cells. A super cell is equivalent to an existing pair of cells – 1,000 feet long, 500 feet wide, and 70 feet deep – and is more cost-efficient because it simplifies the leachate collection system. The super cell design eliminated 12 inches of drainage gravel and requires fewer pumps, motors, crest pads, valves, and other pieces of equipment. The result was a cost reduction of \$1.5 million per super cell.

In addition, weather enclosures for cells 1 and 2 were constructed. The enclosures provide protection for the existing leachate piping systems and electrical/instrumentation.



## ERDF (Continued)



*The waste disposal team used a new dump ramp constructed in super cell 9 at the Environmental Restoration Disposal Facility. (Photo 1)*

## ERDF (Continued)



*The waste disposal team spreads contaminated soil on the south side of super cell 9 while disposing railroad ties on the north side. (Photo 2)*

### **Facility and Equipment Upgrades**

Progress continued at ERDF's new maintenance facilities. Electrical power was connected to the new container maintenance facility and testing of the HVAC system was conducted. Floor and cabinet installation continued in the operations center, and rough-in electrical and plumbing work continued in the equipment maintenance facility. At the transportation maintenance facility, drywall was completed in the east addition and taping and mudding is under way.

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.



## ERDF (Continued)

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. WCH continued to install radio-frequency identification tags and began testing the readers for the new waste container tracking system at ERDF. The system will assist the Waste Operations team by providing the location of full and empty containers.



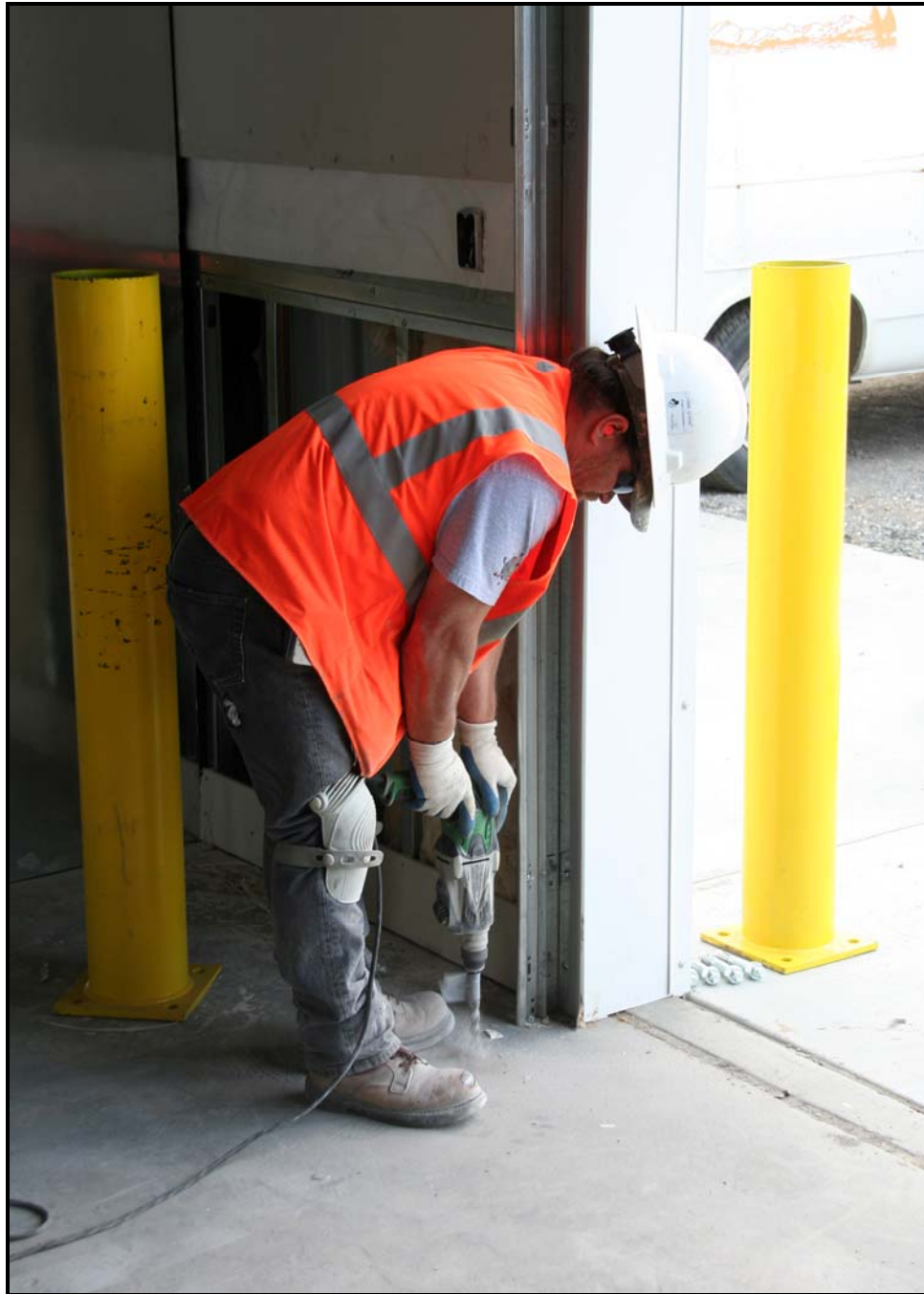
*ERDF's new container maintenance facility includes three stalls, a repair line, a maintenance shop, and a weld area. (Photo 3)*

## ERDF (Continued)



Washington Closure Hanford subcontractor ELRFowler works on an air conditioning unit at the equipment maintenance facility/operations center. (Photo 4)

## ERDF (Continued)



*An ELRFowler employee installs a bollard in the east addition of the transportation maintenance facility. (Photo 5)*

## ERDF (Continued)

WCH completed its upgrade of ERDF's main gate intersection. The upgrade allows the facility to safely and efficiently handle the increased volume of traffic.

WCH continued to produce sand for ERDF's new batch plant. The batch plant will manufacture concrete used to mix with debris during disposal operations. It is expected to be placed into service by the end of the month.

Late last month, WCH transitioned to its new septic system at ERDF. The new system will handle the additional demands of ERDF's new maintenance facilities, as well as its existing facilities. Later this month, the facility's original septic tank will be demolished. The new septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

### 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 continued trench excavation of the 618-10 Burial Ground. As of June 1, a total of 24,400 bank cubic meters has been removed. The project team excavated a large steel tank from the central section of the north excavation front.

Since trench excavation began in April, two drums have been excavated on the south front. One drum contained oil with uranium and the other contained miscellaneous trash. On the north front, two concreted drums and a stainless steel drum have been excavated. Numerous bottles and miscellaneous trash also have been excavated.

The project team also continued testing of the burial ground's water system and setup of the second drum punch facility.



*Washington Closure Hanford workers uncover a large steel tank in the north central section of the 618-10 Burial Ground. (Photo 6)*

## 618-10 Burial Ground (Continued)



*The steel tank found at the 618-10 Burial Ground contained a ladder. (Photo 7)*

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-activity 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.

In September 2010, WCH completed intrusive characterization field operations at the burial ground. Test pits were dug through a subset of disposal trenches, 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 between 2,000 and 6,000 (most likely closer to 2,000). 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

## 618-10 Burial Ground (Continued)

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 2010. 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 waste trenches.
- Complete set up of second drum punch facility.

### Video

[Click here to view video of trench excavation activities at the 618-10 Burial Ground.](#)



## 618-11 Burial Ground

Nonintrusive characterization continues at the 618-11 Burial Ground. WCH subcontractor North Wind Inc. is performing radiological characterization of the VPUs. To date, North Wind has characterized 24 of the burial ground's 50 VPUs.

The project team is inserting a gamma-logging probe into the cone penetrometers to identify the location of radioactive materials within the VPUs. Prior to characterization activities, North Wind installed two cone penetrometers (narrow steel tubes) about 6 to 8 inches from the exterior of each VPU and to an approximate depth of 6 feet below the VPU.

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





## 618-11 Burial Ground (Continued)



*Employees with Washington Closure Hanford and subcontractor North Wind Inc. retrieve a multi-detector probe from a cone penetrometer during nonintrusive characterization of the 618-11 Burial Ground. (Photo 8)*

## 618-11 Burial Ground (Continued)



*A North Wind employee takes readings during nonintrusive characterization of the vertical pipe units at the 618-11 Burial Ground. (Photo 9)*

Prior to cone penetrometer installation, the project team conducted geophysical delineation to help locate each of the burial ground's VPU and caissons. The delineation was determined using reconnaissance-level magnetic field survey, detailed-level magnetic and time-domain electromagnetic induction (TDEMI) survey, and ground-penetrating radar (GPR) survey.

The VPUs 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). The top of the caisson was 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.

## 618-11 Burial Ground (Continued)

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.

### Upcoming Activities

- Continue VPU radiological characterization activities.





## 100-F Area

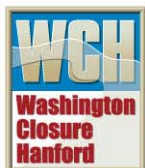
WCH and subcontractor Ojeda Business Ventures continued with the remediation of 19 waste sites at 100-F Area. The project team is demolishing and loading out the western portion of 100-F-57 to the 15-foot level. The site consists of stained concrete and soil containing hexavalent chromium.

WCH also received some closeout sample results from 100-F-26:4 (sewer pipeline), 100-F-51 (fish laboratory pipelines), and 100-F-63 (radioactive effluent pipeline).

Late last month, the project team backfilled 100-F-45 on an interim basis to protect the site from spring runoff from the Columbia River. Prior to backfilling the site, sample collection was completed, laboratory analysis was performed, and the results were shared with the U.S. Environmental Protection Agency.

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-49 (maintenance garage lube pit foundation)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-8 (drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines).





## 100-F Area (Continued)



*Washington Closure Hanford is remediating 19 waste sites in 100-F Area, home to the third of Hanford's nine plutonium production reactors. (Photo 10)*

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, 19 additional waste sites were discovered.

## 100-F Area (Continued)

### Upcoming Activities

- Continue excavation of western portion of 100-F-57 to 15 feet.

## IU 2 & 6 Segment 1

WCH completed revegetation of the five IU 2&6 waste sites on November 30, 2010. Segment 1 encompasses about 28 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 80% of the sites; the remaining documents are in the review and approval process.





## General

### **Media, Visits, Press Releases**

There were no significant media events this week.

### **Contracting Actions**

There were no significant contracting actions this week.

