



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending September 12, 2010

Contract DE-AC06-05RL14655

## 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

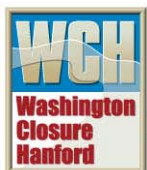
WCH is employing ARRA funds to clean up many failed waste sites not originally part of its contract. Sites in the 100-F and IU 2&6 segments 1&2 are proposed for waste site remediation in the two year period starting in October 2009.

### E. Confirmatory Sampling of other new sites

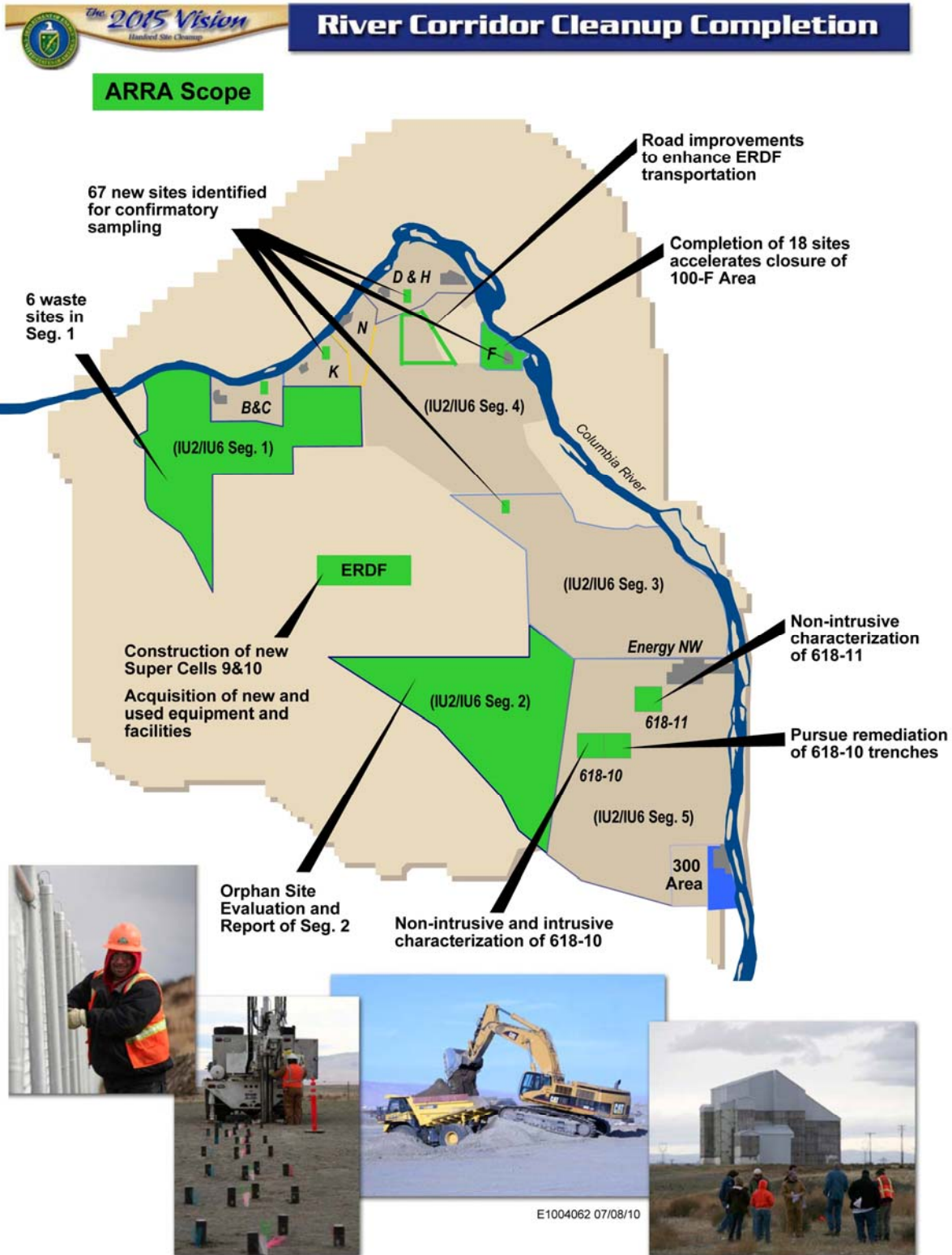
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 July 25, 2010, WCH and its subcontractors have worked 239,115 hours of ARRA scope with no safety incidents.

## Hazard Reductions

On September 7, Washington Closure Hanford's Safety, Health and Quality organization provided company managers with a "Labor Day Safety Refocus" to share with employees during staff meetings.

The Safety Refocus was designed to remind employees: 1) they need to refocus after the holiday, 2) get back into the right mid-set, and 3) remember that ZERO accidents and injuries is our goal.

The Safety Refocus also reminded employees to be aware of conditions that may have changed over the long holiday weekend such as: 1) weather (e.g., wind, rain), 2) things out of place, and 3) housekeeping. The Safety Refocus also encouraged employees to do the following:

- Get organized and prepare for the week
- Prioritize
- Review work packages
- Review Job Hazard Analyses, technical service agreement cards, etc.
- Pay attention to detail
- Stay focused and alert
- Avoid distractions.

The Safety Refocus also reminded employees that although summer is winding down, they still must avoid heat stress and dehydration. Employees should drink plenty of fluids, apply sunscreen frequently, always follow site-wide procedures, and let their supervisors know if they are not feeling well.

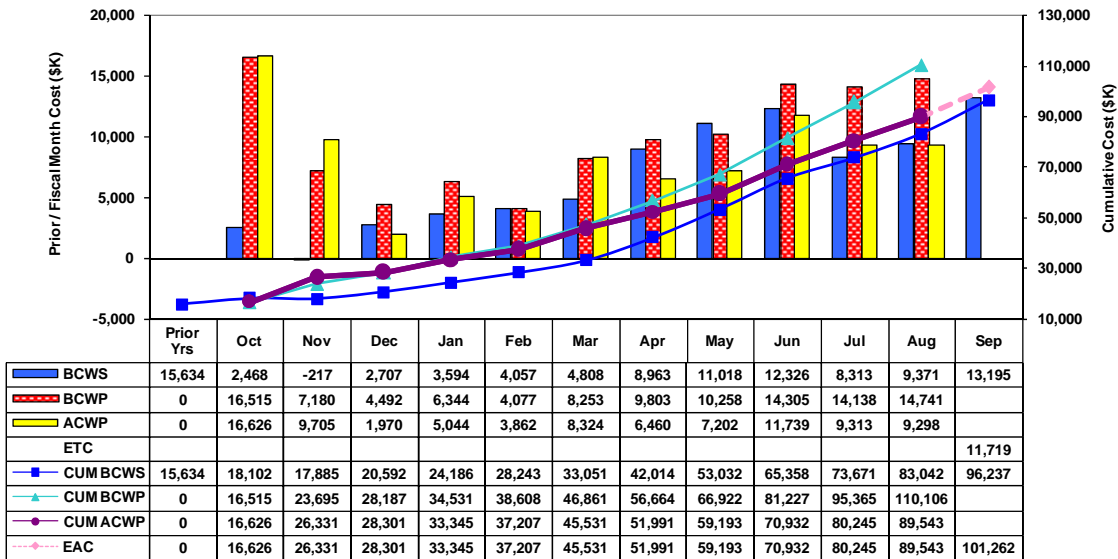
Finally, the Safety Refocus encouraged employees to begin planning for the winter months and to start thinking about winterizing vehicles, equipment, piping, and buildings.



# 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

RCC Project - ARRA  
Current Performance Measurement Baseline (PMB)  
Prior Years / FY10 Fiscal Month



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

Apportionment Number	Apportionment Title		August 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	6,483	64,957	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,815	24,586	38,907
<b>Sub Total</b>		<b>PMB</b>	<b>9,298</b>	<b>89,543</b>	<b>177,979</b>
<b>Fee</b>			<b>716</b>	<b>9,496</b>	
<b>Total</b>			<b>10,014</b>	<b>99,039</b>	

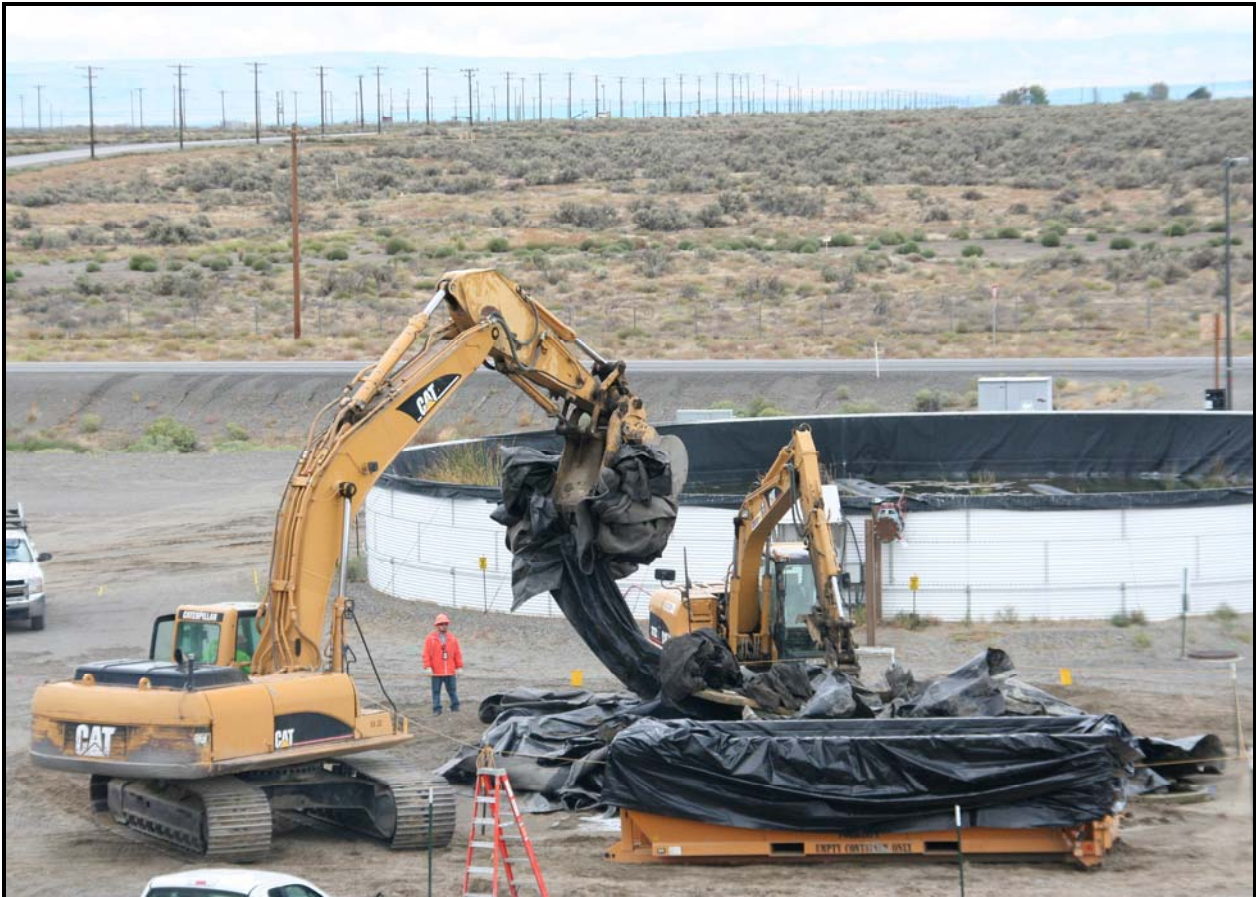
\* PMB = Performance Measurement Baseline.



## ERDF

### Super Cells 9 and 10 Construction

WCH completed the removal of one of the facility's two original leachate holding tanks. Both of the original tanks measure 80 feet in diameter and had a capacity of 275,000 gallons. A replacement tank that will measure 100 feet in diameter and have a 425,000-gallon capacity is under construction.



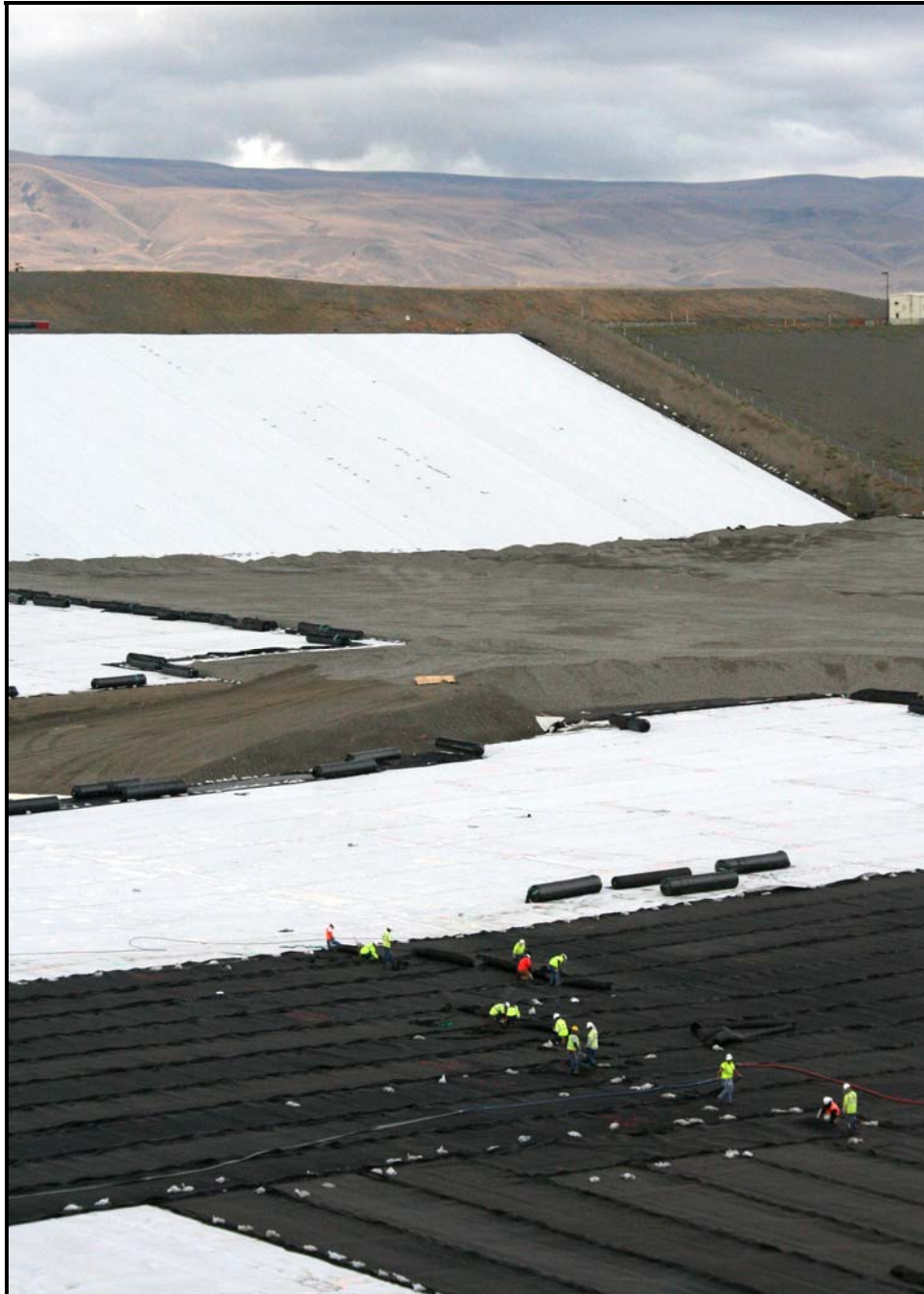
*Washington Closure Hanford subcontractor DelHur Industries personnel remove one of the two original leachate holding tanks at the Environmental Restoration Disposal Facility. A new, large leachate holding tank is under construction.*

WCH continues to construct 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 that is manufactured by mixing excavated soil with imported bentonite.

In super cell 9, the secondary HDPE and geocomposite layers have been installed. Installation of the primary HDPE layer is 95% complete, and rock placement for the gravel drainage layer is 75% complete. In super cell 10, admix placement is 72% complete, and work continues on the

## ERDF (Continued)

installation of the secondary HDPE and geocomposite layers. Work also continues on the sumps and the crest pad buildings for super cells 9 and 10.



*A photo from the northeast corner of super cell 10 shows construction progress at the Environmental Restoration Disposal Facility.*

## ERDF (Continued)



*Work continues on the installation of the geocomposite layer in super cell 10 at the Environmental Restoration Disposal Facility.*

### **Facility and Equipment Upgrades**

ELRFowler continues with construction of ERDF's new container maintenance facility. Workers installed rebar in preparation for pouring the container facility's concrete foundation. The new container maintenance facility will include a large container repair line, a maintenance shop, and a weld area.

ELRFowler is a joint venture between local companies ELR Consulting and Fowler General Construction. It also will construct an upgraded transportation truck maintenance facility, a new heavy equipment facility, and an operations center.



## ERDF (Continued)



*Workers install rebar in preparation for pouring the container maintenance facility's concrete foundation at the Environmental Restoration Disposal Facility.*

Pacific Northwest National Laboratory (PNNL) continues work on a new waste container tracking system for ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports. PNNL has begun electrical and reader software development.

## ERDF (Continued)

Development of the firmware began this week. Development of the mechanical is expected in September.

WCH has received bids for construction of ERDF's new septic system and has started the review process. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

Mission Support Alliance (MSA) subcontractor Fowler General Construction continued work on three Hanford Site roads – Routes 1, 2, and 4. Fowler completed paving of Route 1 and Route 2, and is scheduled to begin prep work for Route 4 early next week. The roads are used to transport waste material for disposal at ERDF.

WCH subcontractor George A. Grant has completed construction of a new lighting system at ERDF's transportation yard. A total of 15 light posts were 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.

Fowler General Construction continues civil work for construction of ERDF's onsite fueling station. The fueling station was designed by Sage Tech and WHPacific. 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.

Vendors are preparing bids for providing a batch plant for ERDF. 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.

DelHur Industries has started on the preliminary design of weather enclosures for crest pad buildings for cells 1 and 2.

### Upcoming Activities

- Continue construction of the liner and leachate collection system for super cells 9 and 10.
- Continue construction of new leachate holding tank.
- Continue construction of container maintenance facility.

### Video

[\*\*Construction Progress Continues at the Environmental Restoration Disposal Facility\*\*](#)



## 618-10 Burial Ground

### 618-10 Intrusive Characterization/Trench Remediation Project

WCH completed backfilling the cross-trenches or test pits that were dug through the main trenches in support of intrusive characterization at the 618-10 Burial Ground. The project team dug test pits through a subset of disposal trenches and unearthed a limited number of drums to verify the condition and types of wastes that were disposed.

Several drums containing radioactive waste, a shipping cast and miscellaneous waste were discovered during field operations. The drums are believed to contain depleted uranium and uranium oxide. In addition, "concreted" 55-gallon drums, which could possibly contain liquid radioactive waste, 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, which were used to dispose of highly radioactive waste nested inside a pipe surrounded by concrete. The pipe provides containment for 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.

Before being removed from the trench, the drums were observed for any reactions, and radiological surveys are conducted with instrumentation mounted on the excavator. The temperature of the drums also is checked using an infrared thermometer. Once the exposed drums were cleared, they were removed from the excavation face and placed in salvage containers (85-gallon drums) and moved to a drum inspection area.

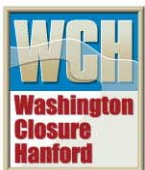
All exhumed drums pass through a characterization process. Radiological surveys are performed on the drums with a gamma spectrometer and a neutron detector before being moved to a storage area on site.

Solid waste will be disposed at ERDF. Drums containing oil and depleted uranium chips will likely be shipped to an offsite treatment facility where the oil, which may contain heavy metals and PCBs, will be drained and incinerated. The shavings will be stabilized and sent to ERDF for disposal.

WCH, along with DOE and Hanford Site regulators, will use the information obtained during intrusive characterization to help determine the safest and most efficient way to clean up the burial ground, including how to safely dispose of the high-dose-rate waste in the concreted drums. Full-scale remediation of the 618-10 Burial Ground trenches is scheduled to start in April 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



## 618-10 Burial Ground (Continued)

cuttings, spent fuel fragments in small juice cans, radiologically contaminated equipment and laboratory instruments, and high-level liquid waste sealed in drums.

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

Work continues to develop the non-intrusive characterization report. 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 will be used to evaluate safe and effective strategies for remediation.

The project team also finalized processing submittals for site upgrades (i.e., water lines, civil site expansion, trailer locations).

### Upcoming Activities

- Continue procurements for various subcontracts.
- 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. Ojeda Business Ventures, which earlier this summer was awarded a subcontract worth \$3.8 million to remediate the waste sites, is scheduled to begin field operations next week.

In preparation of field operations, WCH completed development of remediation work packages, continued to review subcontractor submittals, conducted selected subcontractor training, and installed traffic control signage. WCH also will complete the remediation project startup review (PSR), complete training, and conduct drills for site personnel before beginning field operations.



*Workers install microwave connection to provide communications for 100-F Area. Washington Closure Hanford subcontractor Ojeda Business Ventures is scheduled to begin remediation of 18 waste sites next week.*

## 100-F Area (Continued)



*Workers prepare to install posts for signage in preparation of remediation at 100-F Area.*

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 Area (Continued)

- 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).

### Upcoming Activities

- Continue subcontractor training.
- Begin remediation activities.
- Begin fill-in surface geophysics data collection.



## IU 2 & 6 Segment 1

Remaining 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.

Additional remediation of the southeast quadrant of waste site 600-345 was performed in early August in order to remove the remaining TPH contaminated soil. Closeout samples were collected for laboratory analysis.

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 is approximately 30% complete with the ARRA confirmatory sampling campaign. Confirmatory sampling at 100-F is scheduled to begin September 15, 2010, and confirmatory sampling at 100-IU-6 is scheduled to begin October 4.

The sampling campaign is scheduled to take place over the next four months, and will be performed in the 100-D, 100-F, 100-K, and 100-IU Areas of the Hanford Site. Sampling will be performed in accordance with the regulator approved work instructions that were completed earlier this year.

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.



*Confirmatory sampling was performed on Site 100-D-83. The site contains a compilation of underground pipelines that transported treated water.*

## Confirmatory Sampling (Continued)



*Confirmatory sampling was performed on Site 100-D-88. The site contains miscellaneous pipeline segments associated with unique building processes such as boiler fuel delivery systems, air conditioning systems, and railcar/truck delivery spots.*

## General

### Mentoring/Training

No significant mentoring/training events this week.

### Media, Visits, Press Releases

WCH hosted U.S. Representative Doc Hastings and his legislative director on a tour of ERDF. Congressman Hastings was briefed on the facility's procedures and operations by WCH's president and ERDF's director of waste operations. WCH also hosted a tour of ERDF to members from the U.S. House of Representatives House Armed Services Committee.



*Congressman Doc Hastings, center, is briefed on the Environmental Restoration Disposal Facility's waste disposal procedures by Bruce Covert, left, Washington Closure Hanford's Director of Waste Operations. At right is Matt McCormick, manager of the U.S. Department of Energy's Richland Operations Office.*

### Contracting Actions

- Request for proposals issued for ERDF Batch Plant.
- Proposals received for 618-10 Heavy Equipment.