



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending August 29, 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

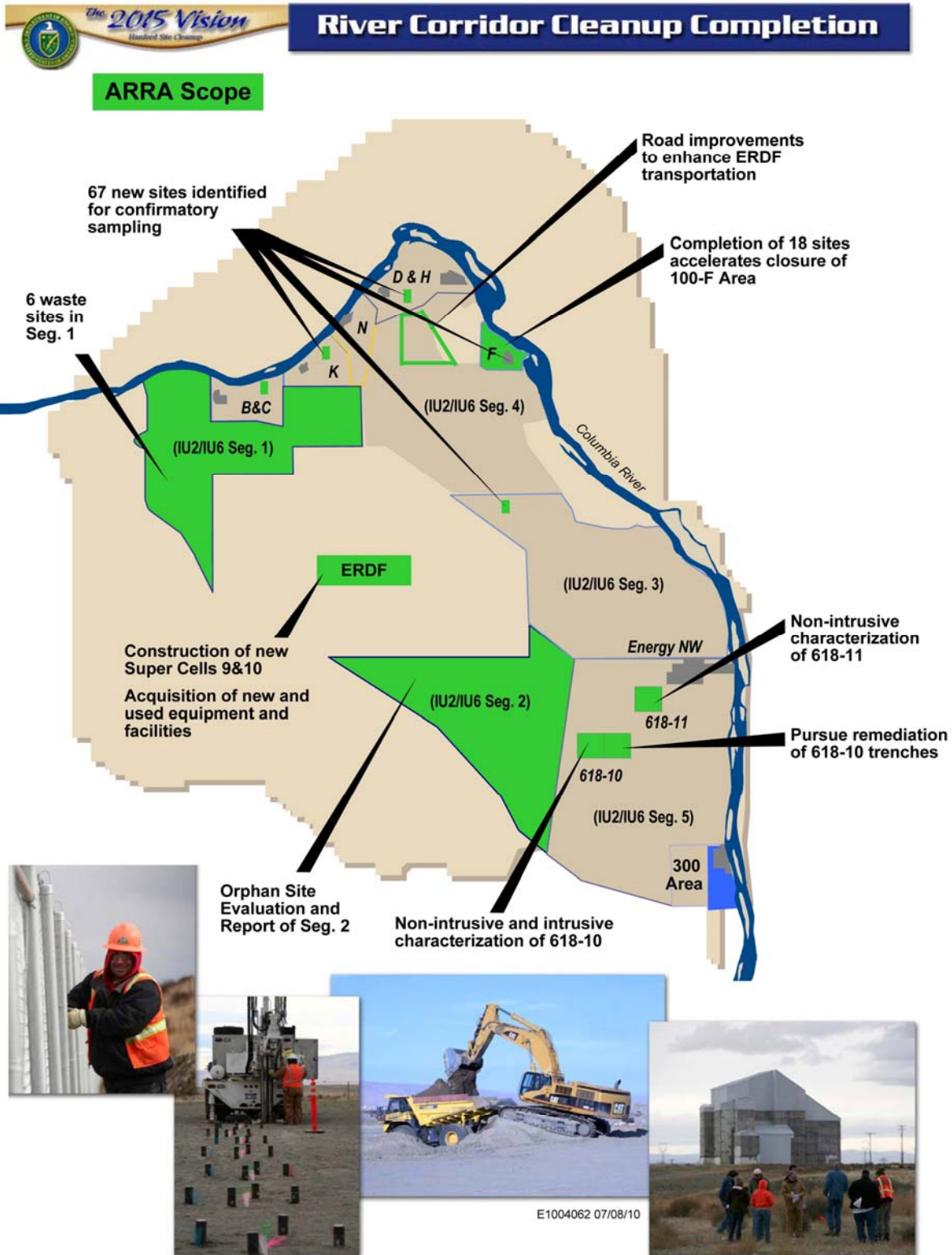
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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)



## 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

WCH is using a scratch card campaign to positively recognize individuals who perform safe acts, actively participate in WCH's Safety and Health (S&H) program, and provide feedback to improve the overall program.

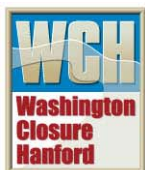
The Integrated Environmental, Safety and Health Management System/Voluntary Protection Program (ISMS/VPP) scratch cards also provide a fun and interactive mechanism to become familiar with the tenets, functions, and principles of ISMS and VPP.

The campaign began August 2 and runs through October 29.

Project safety representatives (PSRs) distribute the scratch cards to those who:

- Earn an Individual Spot Award (getting "caught" doing a safe act)
- Attend and participate in Local Safety improvement Team (LSIT) meetings
- Give a safety share in plan-of-the-day (POD)/pre-evolution/staff meetings
- Conduct a Safety Toolbox talk
- Offer safety suggestions/concerns in the LSIT logbook
- Offer safety suggestions/lessons learned at post-job briefings
- Conduct extra LSIT/STS walkdowns (above what is required at an employee's site)
- Provide feedback during POD/pre-evolution/staff meetings.

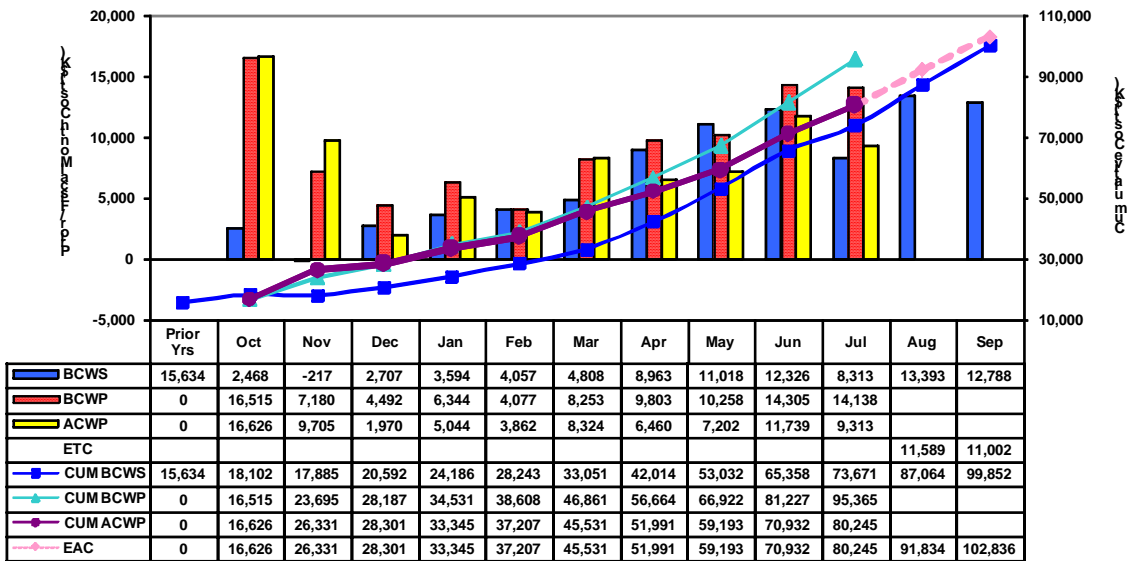
The PSR can provide a nominal safety incentive for correct scratch card (e.g., pin, sticker, candy bar) upon successful completion of each card. Personnel must complete five cards to earn the additional ISMS/VPP incentive award. All five cards must be turned in and logged to receive the recognition.



# 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

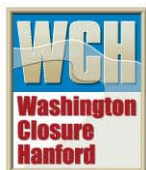
RCC Project - ARRA  
Current Performance Measurement Baseline (PMB)  
Prior Years / FY10 Fiscal Month



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

Apportionment Number	Apportionment Title		July 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	7,169	58,474	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,144	21,771	38,907
Sub Total		PMB	9,313	80,245	177,979
Fee			2,496	8,780	
Total			11,809	89,025	

\* PMB is the Performance Measurement Baseline.





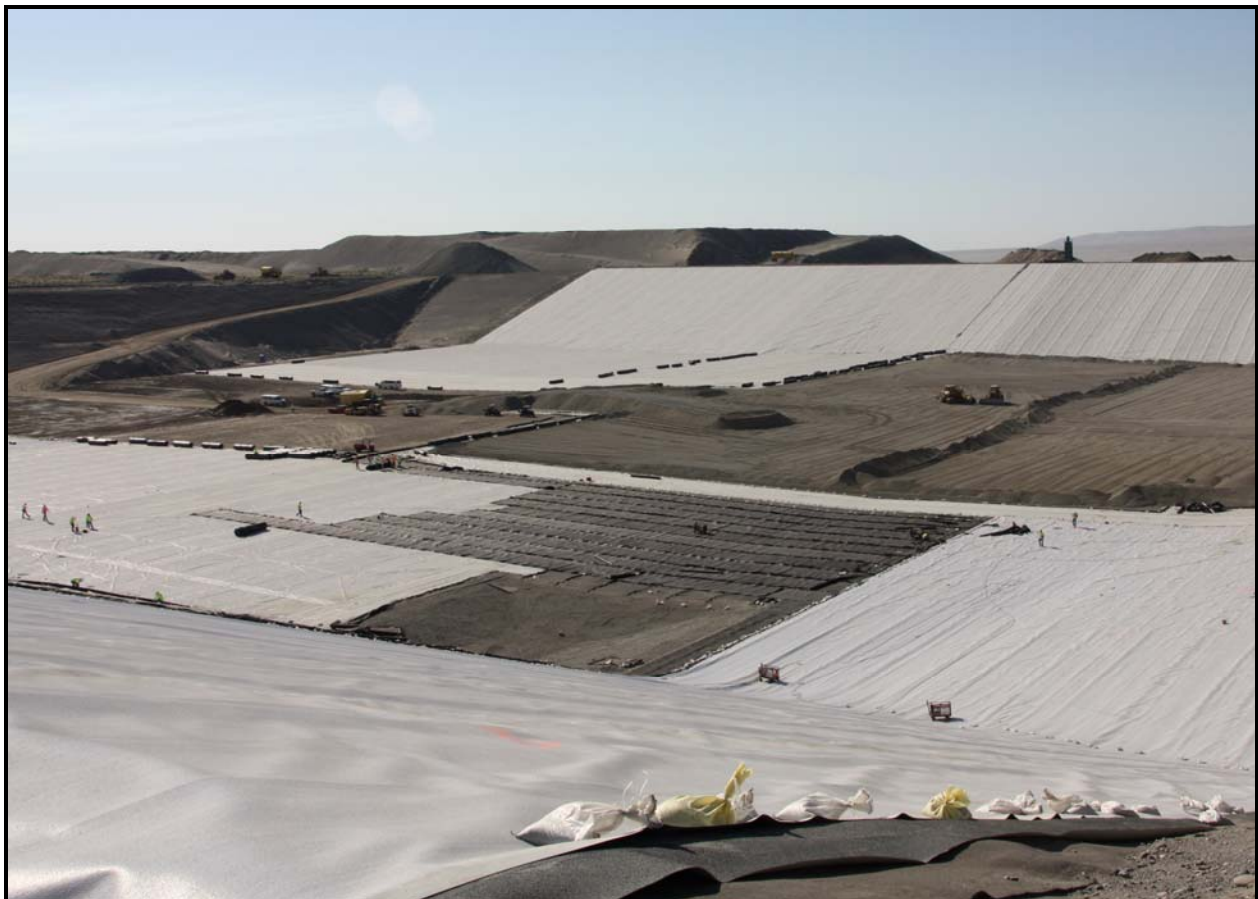
## ERDF

### Super Cells 9 and 10 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.

The project team continues to place the rock used for the gravel drainage layer in super cell 9. About 70% of the gravel needed for super cell 9 has been placed. More than 40,000 cubic yards of gravel, enough for both super cells, was manufactured at an onsite screening plant.

WCH also has installed more than 80% of the primary HDPE layer and 90% of the geocomposite layer in super cell 9. The secondary HDPE liner was completed earlier this month. In super cell 10, about 75% of the secondary HDPE layer has been installed.



A view from the southwest corner of super cell 9 shows liner installation progress at the Environmental Restoration Disposal Facility.

## ERDF (Continued)



*Workers from Environmental Specialties International install the geocomposite layer in super cell 9 at the Environmental Restoration Disposal Facility.*

The project team also continues work on the new leachate holding tank. The concrete foundation has been secured for the tank, which measures 100 feet in diameter with a capacity of 425,000 gallons. The sixth and final section of the leachate transmission line has been installed, tested, and backfilled. The integrated transmission line will be tested next week. Work also continues on the crest pad building for the super cells.

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.

## ERDF (Continued)



*DelHur Industries personnel compact the area around the concrete foundation of the new leachate holding tank at the Environmental Restoration Disposal Facility.*



## ERDF (Continued)



*A look inside a manhole shows the leachate transmission line from the super cells to the leachate holding tank at the Environmental Restoration Disposal Facility.*

### **Facility and Equipment Upgrades**

WCH completed reviewing ELRFowler's 90% design of ERDF's new maintenance facilities and operations center. ELRFowler will incorporate WCH's changes and submit a final design by late September.

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.

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,

## ERDF (Continued)

and generate real-time reports. PNNL has begun electrical and reader software development, and will begin mechanical and firmware development by the end of August.

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

WCH received delivery of two Genie articulating boom man lifts from Powers Equipment Company. 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.

Mission Support Alliance (MSA) subcontractor Fowler General Construction continued work on three Hanford Site roads – Routes 1, 2, and 4. Fowler has completed about 70% of the prep work on Route 1, and prep work for Route 2 is underway. 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. WCH is awaiting electrical tie-in. 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.

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 construction of 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 purchased two concrete mixer trucks and a pump truck from Peters and Keatts Equipment Inc. Peters and Keatts is based in Lewiston, Idaho.

WCH continues to evaluate bids for construction of weather enclosures for the 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.
- Perform test on leachate transmission line.
- Review bids for construction of new septic system.



## Profile

Need liner, will travel.

That's Randy Story's motto. Story is a field supervisor for Environmental Specialties International Inc. (ESI), a job that takes him throughout the country installing geosynthetic liners. Story's latest stop is the Environmental Restoration Disposal Facility (ERDF), where ESI is installing the liner for super cells 9 and 10. ESI is a Baton Rouge, Louisiana-based subcontractor that specializes in municipal and hazardous waste landfill applications. The ERDF expansion project, which will increase the disposal facility's capacity by 50%, is funded by the American Recovery and Reinvestment Act.

"I'm on the road about 10 months a year," said Story, a Texas native who now lives in Sound Beach, New York, a small town on the shore of Long Island Sound.



*Randy Story is a field supervisor for Environmental Specialties International Inc.*

## Profile (Continued)

Story's crew of 15 began installing the liner for super cell 9 in June and is now working on both super cells. The entire project calls for about 3.2 million square feet of high-density polyethylene, 2.1 million square feet of geocomposite, and 2.0 million square feet of geotextile. About 40,000 cubic yards of rock also is needed for the super cells' gravel drainage layers.

"It's a big job, but everything is running smoothly," said Story, who has worked in the geosynthetic installation business for 21 years.

So smoothly that the expansion project is on pace to be completed several months ahead of its September 30, 2011, deadline. Story credits the progress to ESI's working relationship with DelHur Industries. DelHur is the prime subcontractor to TradeWind Services, which was awarded a subcontract worth up to \$30 million by WCH for the expansion project.

"I've worked with several contractors over the years, and DelHur ranks right at the top," Story said. "Their guys are safe and efficient. They're a real pleasure to work with."

Story is no stranger to government projects. He has worked at three U.S. Department of Energy (DOE) sites – Oak Ridge National Laboratory, Fernald, and the Savannah River Site. And he has worked on a variety of projects, from landfills to fish farms to Hawaiian golf courses. In fact, his travels have taken him to all but three states.

"I haven't been to Alaska, Maine, and Nebraska," he said. "I'm not sure if I'll get to all of them, but you never know."





## 618-10 Burial Ground

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

WCH completed cross-trenching activities in support of intrusive characterization field operations at the 618-10 Burial Ground. The project team dug test pits through a subset of disposal trenches and unearthing a limited number of drums to verify the condition and types of wastes that were disposed. Drums containing radioactive materials, such as depleted uranium chips in oil, as well as “concreted” 55-gallon drums were discovered.

The burial ground may contain up to 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 soon will meet with DOE and Hanford Site regulators to 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. Barring any unanticipated finds during the intrusive characterization stage, full-scale remediation is scheduled to start in April 2011.



## 618-10 Burial Ground (Continued)



*The primary excavator operator picks up an 85-gallon salvage container during intrusive characterization field operations at the 618-10 Burial Ground.*

## 618-10 Burial Ground (Continued)



*The primary excavator operator carefully places a concreted drum into a salvage container at the 618-10 Burial Ground.*



## 618-10 Burial Ground (Continued)



*A telehandler picks up a concreted drum that was unearthed from a trench at the 618-10 Burial Ground.*



## 618-10 Burial Ground (Continued)



*A telehandler transports a concreted drum to a mobile nondestructive assay system for processing at the 618-10 Burial Ground.*

## 618-10 Burial Ground (Continued)



*The secondary excavator clears debris from a trench at the 618-10 Burial Ground.*

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.

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.

## 618-10 Burial Ground (Continued)

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 are being used to develop and evaluate safe and effective strategies for intrusive characterization (if required) and/or remediation.

### Upcoming Activities

- Complete backfill and cover of trenches from intrusive characterization field operations.
- Continue with processing submittals for site upgrades (water lines, civil site expansion, trailer locations).
- Continue procurements for various subcontracts.
- Continue development of non-intrusive characterization report.

### Video

[Click here to view the video showing the completion of cross-trenching at the 618-10 Burial Ground.](#)





## 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, continues mobilization activities. Subcontractor trailers are being set up and subcontractor personnel are beginning to mobilize. Also, WCH continues to review subcontractor submittals.



Work continues on a subcontractor trailer at 100-F Area. Remediation of 18 waste sites is scheduled to begin next month.

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, 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).

### Upcoming Activities

- Continue subcontractor civil surveying.
- Complete subcontractor trailer installation.
- Begin preparing remediation work packages.
- Continue remediation project startup review activities.



## 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

Confirmatory sampling of 41 sites near the Columbia River continues at 100-D Area. Sampling is performed for waste sites that require additional information for determining the need for site remediation.

The 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. Terranear PMC (TPMC) is performing sampling in accordance with the regulator approved work instructions that were completed earlier this year.

The project team sampled the following sites this week:

- 100-D-83:4 (a compilation of underground that transported treated water)
- 100-D-88 (miscellaneous pipeline segments such as boiler fuel delivery systems, elevator shafts, air conditioning systems, railcar/truck delivery spots, equipment drains).

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.

TPMC is a small disadvantaged business based in Irving, Texas, with an office in Richland, Washington. It provides environmental remediation and compliance, radiological waste management, engineering design, and construction management.



## General

### **Mentoring/Training**

No significant mentoring/training events this week.

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

- WCH hosted local television and newspaper reporters at the 618-10 Burial Ground for a media event. The 618-10 Project Manager for Trench Remediation briefed reporters on characterization activities and cleanup plans.
- Members of the Environmental Protection Agency (EPA) Hanford Project Office staff and EPA officials with the Federal Facilities Restoration and Reuse Office visited ERDF. They were briefed on the facility's operations and procedures by ERDF's Operations Manager.

### **Contracting Actions**

No significant contracting actions this week.

