



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending October 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

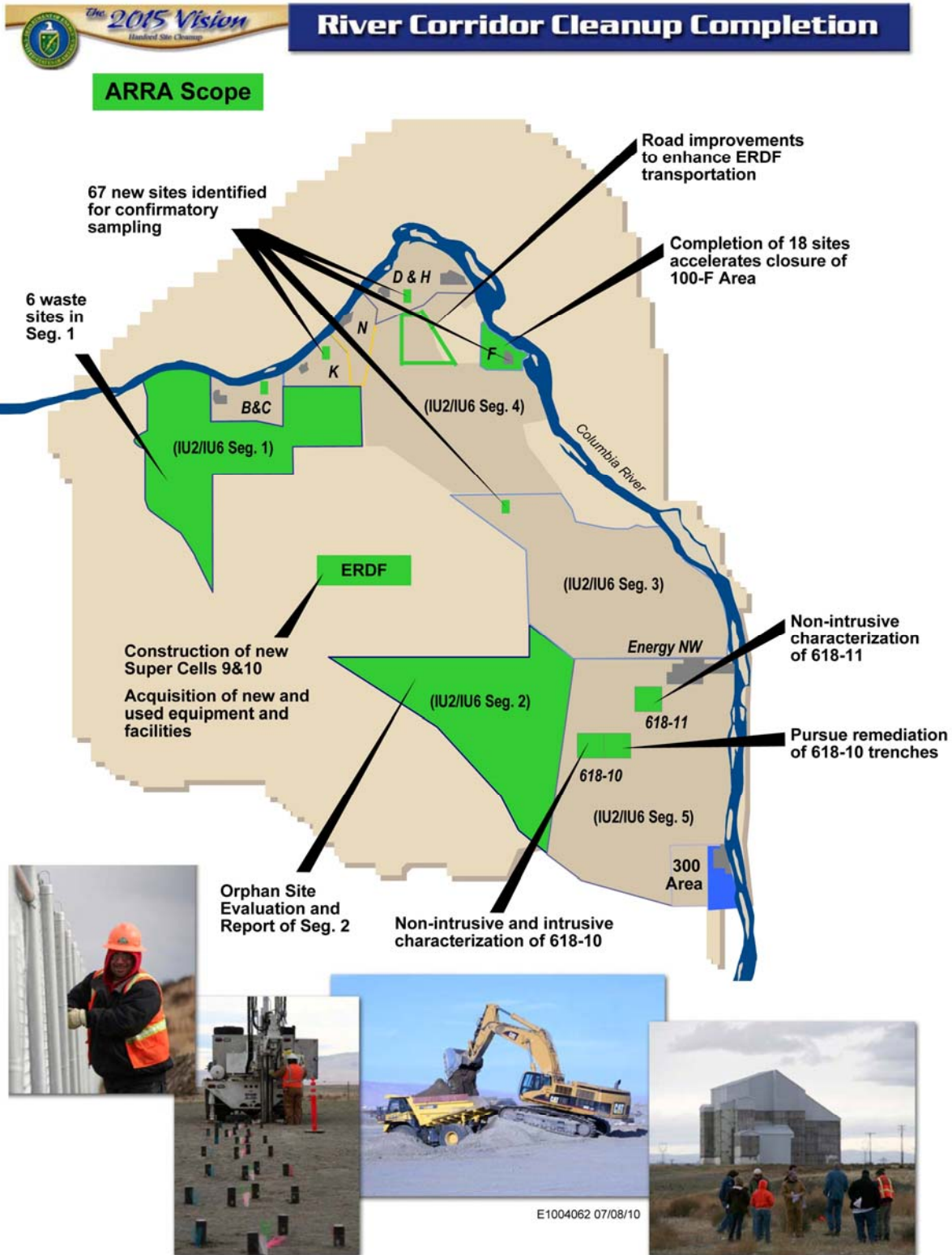
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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)



Safety

Safety Accomplishments

As of August 29, 2010, WCH and its subcontractors have worked 262,885 hours of ARRA scope with no safety incidents.

Hazard Reductions

The River Corridor Closure Project's "Safety Awareness" is used to share safety information with all WCH employees. Last week's edition highlighted vehicle safety and what it means to be a distracted driver.

There are three main types of distraction:

- Visual – taking your eyes off the road
- Manual – taking your hands off the wheel
- Cognitive – taking your mind off what you're doing.

Distracted driving is any non-driving activity a person engages in that has the potential to distract him or her from the primary task of driving and increase the risk of crashing. While all distractions can endanger a driver's safety, texting is the most alarming because it involves all three types of distraction.

Other distracting activities include:

- Using a cell phone
- Eating and drinking
- Talking to passengers
- Grooming
- Reading, including maps
- Using a PDA or navigation system
- Changing the radio station, CD, or MP3 player.

Research on distracted driving reveals some surprising facts:

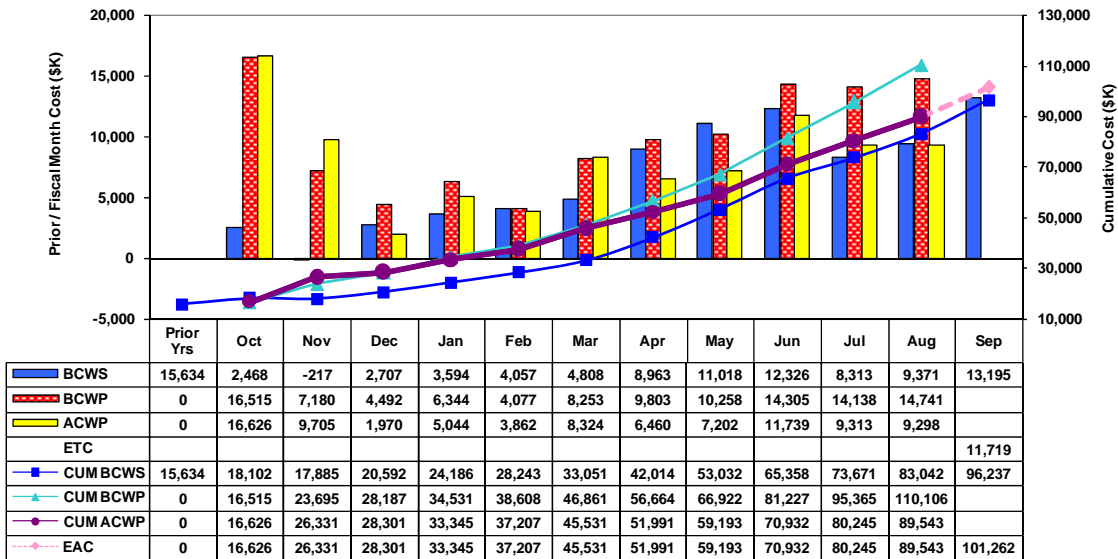
- In 2008, almost 20% of all crashes in the year involved some type of distraction. Source: National Highway Traffic Safety Administration (NHTSA).
- Nearly 6,000 people died in 2008 in crashes involving a distracted driver, and more than half a million were injured. Source: NHTSA.
- The younger, inexperienced drivers under 20 years old have the highest proportion of distraction related fatal crashes.
- Drivers who use hand-held devices are four times as likely to get into crashes serious enough to injure themselves. Source: Insurance Institute for Highway Safety.
- Using a cell phone use while driving, whether it's hand-held or hands-free, delays a driver's reactions as much as having a blood alcohol concentration at the legal limit of .08%. Source: University of Utah.



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
Sub Total		PMB	9,298	89,543	177,979
Fee			716	9,496	
Total			10,014	99,039	

* PMB = Performance Measurement Baseline.



ERDF

Super Cells 9 and 10 Construction

WCH continues to make significant progress with the 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 leachate collection 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 bentonite.

In super cell 9, the secondary and primary HDPE layers, the geocomposite layer, and the gravel drainage layer have been installed. About 20,000 cubic yards of gravel is needed for each super cell. Work also is under way to install the perforated leachate collection pipe.

In super cell 10, the project team is completing admix placement. The team also has installed 85% of the secondary HDPE layer, and the primary HDPE and geocomposite layers are 60% complete.



The leachate collection pipe (the length of super cell 9) is being installed at the Environmental Restoration Disposal Facility. (Photo 1)

ERDF (Continued)



Admix is loaded into a dump truck for placement in super cell 10 at the Environmental Restoration Disposal Facility. (Photo 2)

Construction also continues on the two new leachate holding tanks at ERDF. Tank Nos. 3 and 4 will replace the facility's two original holding tanks – Nos. 1 and 2. ERDF received delivery of tank No. 3, which will be erected later this month. The concrete foundation for tank No. 4 was poured. Removal of tank No. 1 was completed earlier this month, and tank No. 2 will be removed when the two replacement tanks are in service. Each of the original tanks measured 80 feet in diameter and had a capacity of 275,000 gallons. Each replacement tank will measure 100 feet in diameter with a 425,000-gallon capacity.

Facility and Equipment Upgrades

ELRFowler continues with construction of ERDF's new waste container maintenance facility. The project team completed construction of the stem walls, which are used to join the building foundation with the vertical walls. The new container maintenance facility will include a large container repair line, a maintenance shop, and a weld area.

ERDF (Continued)



An employee with subcontractor Fowler General Construction works to compact the soil around the foundation of the container maintenance facility. (Photo 3)

ERDF (Continued)

ELRFowler also completed prep work to pour the footings for the heavy equipment facility and the adjoining operations center. 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. The new operations center will help alleviate severe overcrowding of personnel and also accommodate new employees hired to handle the increasing waste volumes.

ELRFowler is a joint venture between local companies ELR Consulting and Fowler General Construction. It also will construct an upgraded transportation truck maintenance facility that will include two additional truck bays, a large concrete pad, an exterior awning that will cover two smaller concrete pads, and a conference room.

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.

WCH is awaiting Washington State Department of Health approval of the design of ERDF's new septic system. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington. Columbia Engineers and Constructors also continues to incorporate design comments from the Washington State Department of Health.

Mission Support Alliance subcontractor Fowler General Construction continues repair work on three Hanford Site roads used to transport waste material for disposal at ERDF. Routes 1, 2, and 4 have been paved, and shoulder work continues. Route 1 is scheduled to open next week.



ERDF (Continued)



Washington Closure Hanford subcontractor Fowler General Construction completes shoulder work on Route 1, one of three Hanford Site roads being repaired. Route 1 is scheduled to open next week. (Photo 4)

WCH issued a change notice to DelHur Industries to develop a bid for design and construction of 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 completed a preliminary design of weather enclosures for crest pad buildings for cells 1 and 2. WCH has begun to review the preliminary design.

Upcoming Activities

- Continue construction of the liner and leachate collection systems for super cells 9 and 10.
- Continue construction of leachate holding tanks Nos. 3 and 4.
- Continue construction of container maintenance facility.
- Continue construction of equipment/operations center.

618-10 Burial Ground

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

Intrusive characterization field operations were completed in early September. Cross-trenching involved digging 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.

Several drums containing radioactive waste, a shipping cask, 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 contains the waste and the concrete provides radiation shielding for its contents. Workers also found a cask with unknown contents, bollards, bottles, metal pieces, and other miscellaneous debris.

Before being removed from the trench, the drums were observed for any reactions, and radiological surveys were 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, 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 spring 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.

The project team completed the project startup review this week for site infrastructure construction and initiated site mobilization for these upgrades (e.g., water lines, civil site expansion, and trailer locations). The procurement process for remediation subcontracts also continues.

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 is beginning work at the burial ground this fall and is scheduled to complete infrastructure work by February 2011.

Work also 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.

A technology review workshop was hosted by WCH and attended by DOE and EPA last week. During the workshop, a five-person decision support board reviewed six candidate technologies for remediation of the VPUs at the 618-10 Burial Ground and recommended three for further development and demonstration.

Upcoming Activities

- Continue procurement process for various subcontracts.
- Continue development of non-intrusive characterization report.



100-F Area

WCH and subcontractor Ojeda Business Ventures continue remediation activities at 100-F Area. The project team continued stockpiling waste and began loadout at site 100-F-48, which contains coal-pit debris. Last week, remediation and civil surveying were completed at site 100-F-55, the first of 18 sites to be remediated.

In addition, potholing activities to collect samples for the development of waste profiles are underway at sites 100-F-26:4 and 100-F-47. The subcontractor truck scale has been erected, and work has begun on the subcontractor survey structure. Electric service to the air monitors also was completed.



Washington Closure Hanford subcontractor Ojeda Business Ventures continues remediation excavation and loadout activities at site 100-F-48. (Photo 5)

100-F Area (Continued)



Potholing work to collect samples for the development of waste profiles continues at site 100-F-26:4, one of 18 waste sites to be remediated. (Photo 6)

100-F Area (Continued)



Construction and calibration of a subcontractor truck scale at 100-F Area was completed. The scale is now operational. (Photo 7)

Ojeda is a small disadvantaged business based in Richland, Washington, that specializes in construction, renovation, and construction management of federal government projects.

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

- Complete pothole sampling for sites 100-F-8, 100-F-49, 100-F-51, 100-F-57, 100-F-58, 100-F-61, 100-F-62, and 100-F-63.
- Continue installation of subcontractor survey structure and scaffolding.

Video

[Click here to view the video of remediation activities at 100-F Area waste sites.](#)



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 more than 30% complete with the ARRA confirmatory sampling campaign. Confirmatory sampling at 100-F was completed in mid-September, and confirmatory sampling at 100-IU-6 is scheduled to begin in mid-October.

The sampling campaign is scheduled to continue over the next four months, and will be performed in the 100-D, 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.

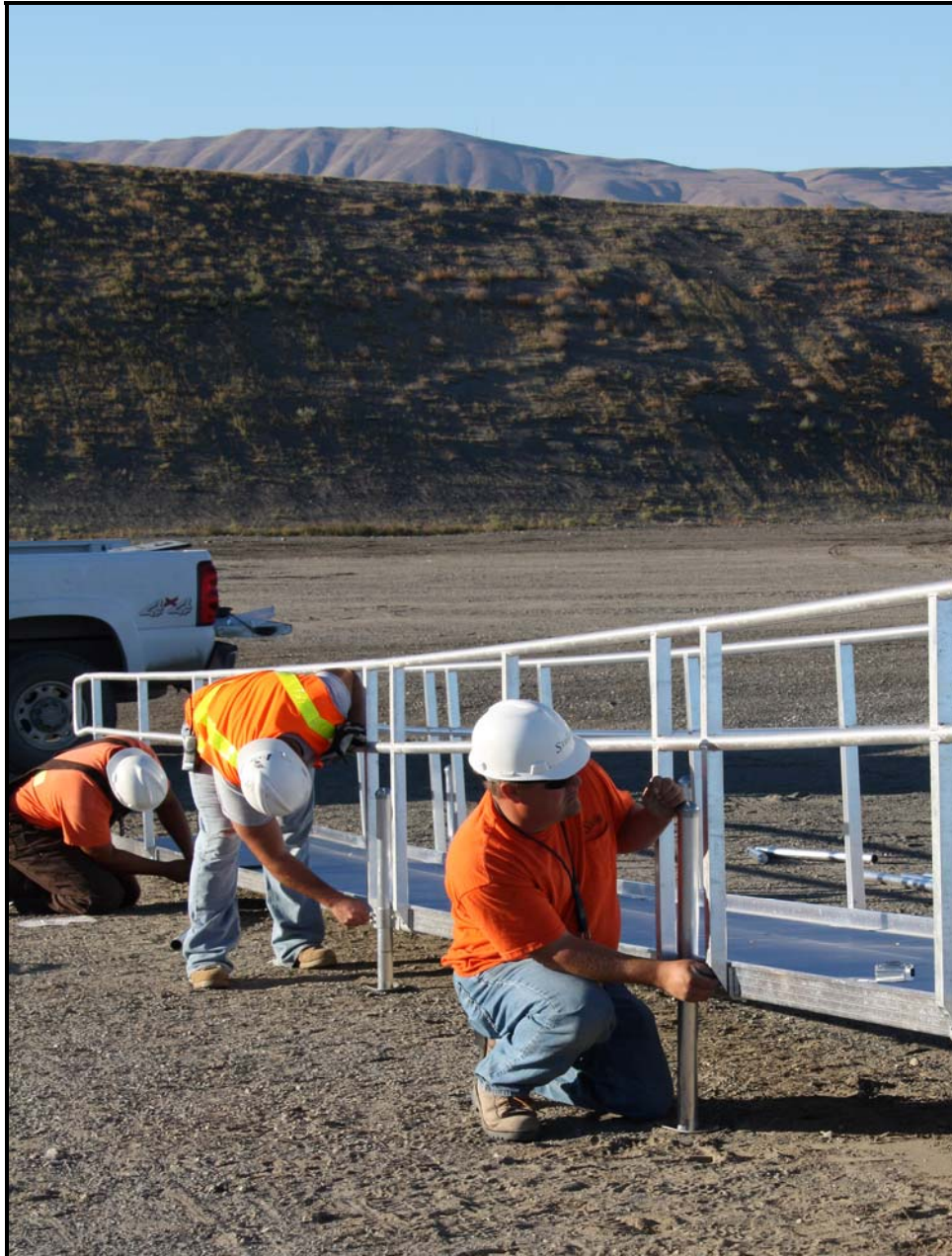
Sample results from 100-D sampling campaign are being evaluated to determine whether the sites will require remediation under the existing interim record of decision. Sites where the sample results show contamination below the clean-up standards are being recommended for closeout with no further action.



General

Media, Visits, Press Releases

Residents and staff from a local retirement home visited ERDF during a tour of the Hanford Site. In preparation for the visit, ERDF personnel constructed a ramp for wheelchair access.



Workers construct a wheelchair access ramp to a public viewing area at the Environmental Restoration Disposal Facility. (Photo 8)

General (Continued)

Mentoring/Training

No significant mentoring/training events this week.

Contracting Actions

- Addressing Washington State Department of Health comments on the ERDF Septic System Design.
- Approved design of ERDF Fuel Station. Fuel Station on hold.
- Work completed on ERDF access road paving. Waiting on as-built designs.

