



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending October 22, 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 Ground

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 Ground

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

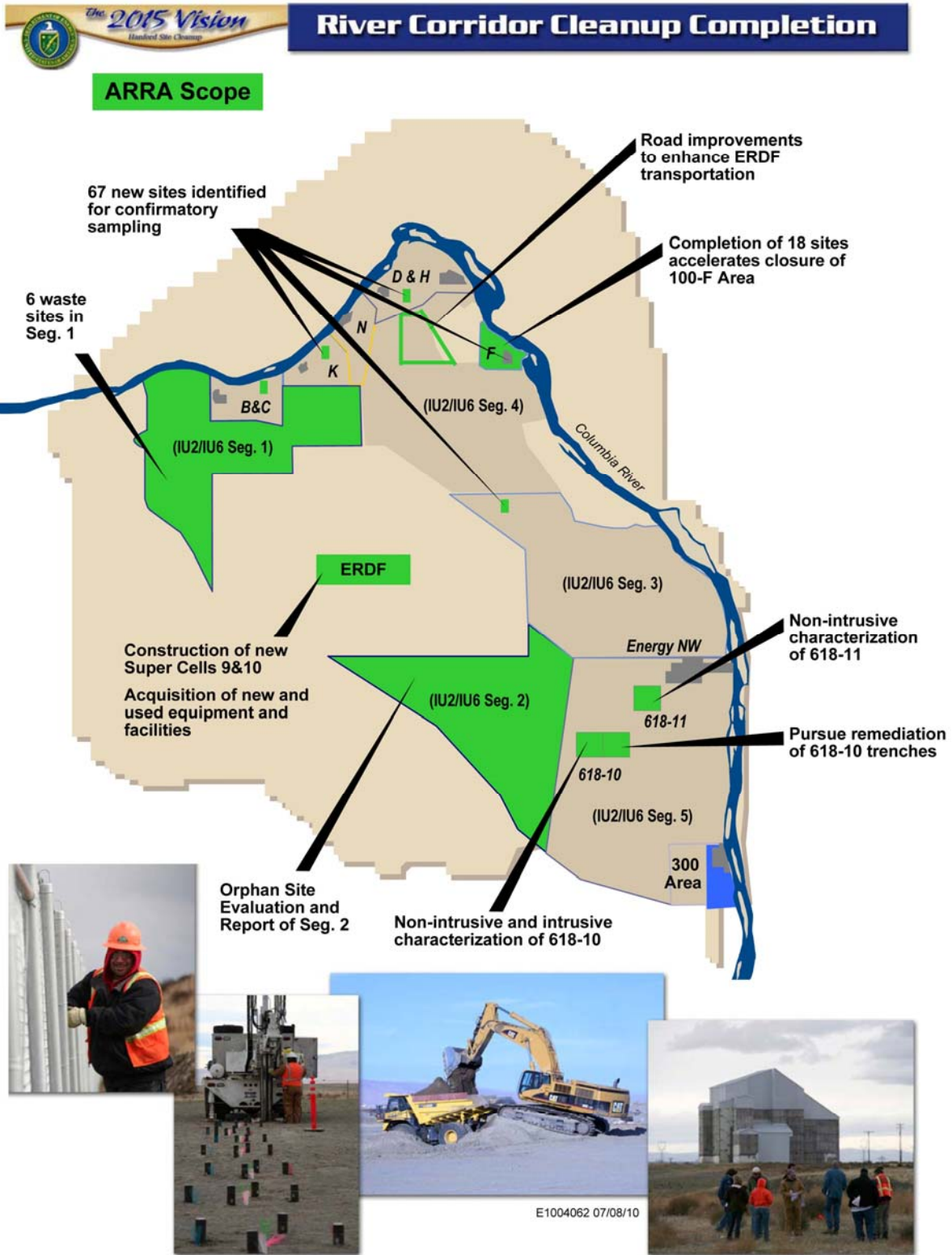
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 September 30, 2010, WCH and its subcontractors have worked 285,488 hours of ARRA scope with no safety incidents.

Hazard Reductions

WCH's Safety and Health organization issued a "Cold Weather Safety" presentation to its employees that focused on preventing cold-related injuries and illnesses. The presentation highlighted several topics including the following:

- Maintaining temperature (balancing heat loss and heat production)
- Challenges you face in a cold environment, such as wind chill
- How the body loses heat and how the body produces heat
- Cold stress and its immediate signs.

In general, people in good physical health are less susceptible to cold injury. In addition to weather conditions, the following factors may increase the risk of developing a cold injury:

- Previous cold-related injury
- Predisposing health conditions (cardiovascular disease, diabetes, anemia, sickle cell disease, vibration/white finger disease, other conditions associated with poor circulation, hypertension, asthma)
- Fatigue, poor physical condition
- Poor nutrition
- Medication: anti-depressants, sedatives, tranquilizers, others
- Alcohol (decreases awareness, impairs the body's ability to regulate temperature, and increase risk for hypothermia)
- Caffeine (increases urine production, contributes to dehydration)
- Nicotine (increases risk for cold-induced skin injury such as frostbite, immersion foot; promotes development of peripheral vascular)
- Under-activity (can lead to decreased body heat production)
- Over-activity (can lead to wet skin, clothing, or shoes from sweating)
- Age (older adults may be at more risk than younger).



Safety (Continued)

Definitions for cold-related injuries and illnesses also were provided.

- Hypothermia – occurs when core body temperature decreases to below 95 °F; can occur in air temperatures below or above freezing (or water temperatures); serious medical emergency, can be fatal.
- Frostbite – ice crystal formation in skin and other tissues of the body at or below freezing (32 °F); causes permanent damage and destruction to blood vessels and other structures, can result in amputation.
- Frostnip – ice crystal formation only in the very outer layer of the skin; causes no permanent damage.
- Chilblains – mild cold injury due to prolonged and repeated exposure for several hours to temperatures above freezing (32 °F to 60 °F); affected skin is swollen, red, tingly, painful, and itchy.
- Immersion Injury (trench foot) – exposure of wet feet (or hands, other body areas) to cold temperatures over hours to days at or above freezing (32 °F to 50 °F); damages nerves permanent and muscles; can cause damage.

Finally, the presentation discussed preventative measures.

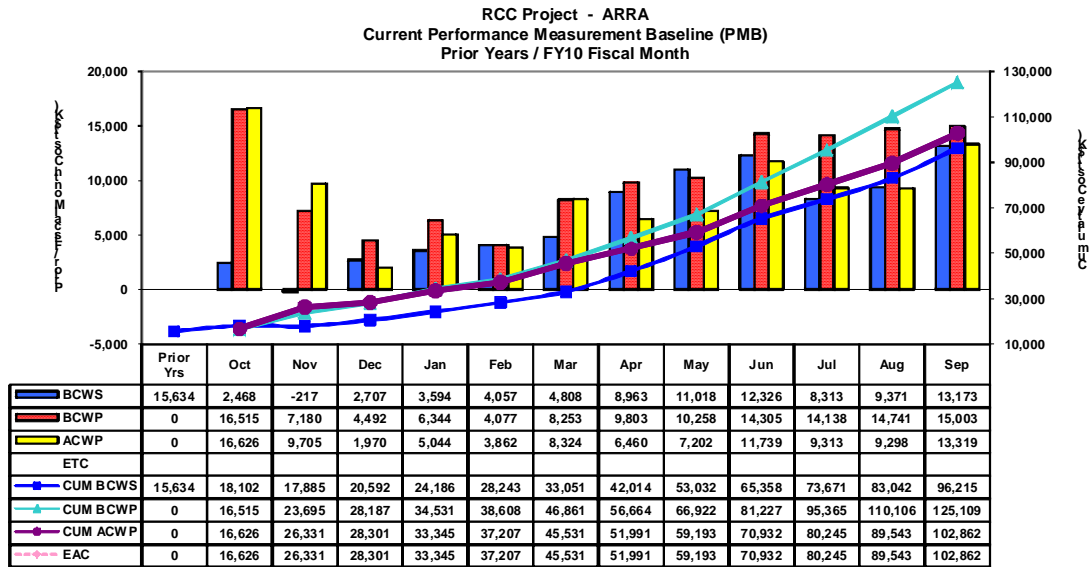
- Planning – plan for work in cold weather and implement controls to reduce and minimize exposures and the risk of cold stress
 - Planning for the conditions
 - Engineering controls
 - Work practices
 - Appropriate clothing
 - Personal protective equipment.
- Training – providing training in the recognition and treatment of cold-related injuries and illnesses. Supervisors, workers, and co-workers should watch for signs of cold stress and allow workers to interrupt their work if they are extremely uncomfortable.
- Awareness – being aware of how your body is reacting to the cold is important in preventing cold stress.



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

River Corridor Closure Project - ARRA



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

Apportionment Number	Apportionment Title		September 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	9,645	74,603	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	3,673	28,259	38,907
Sub Total		PMB	13,318	102,862	177,979
Fee			1,137	10,633	
Total			14,455	113,495	

* PMB = Performance Measurement Baseline.



ERDF

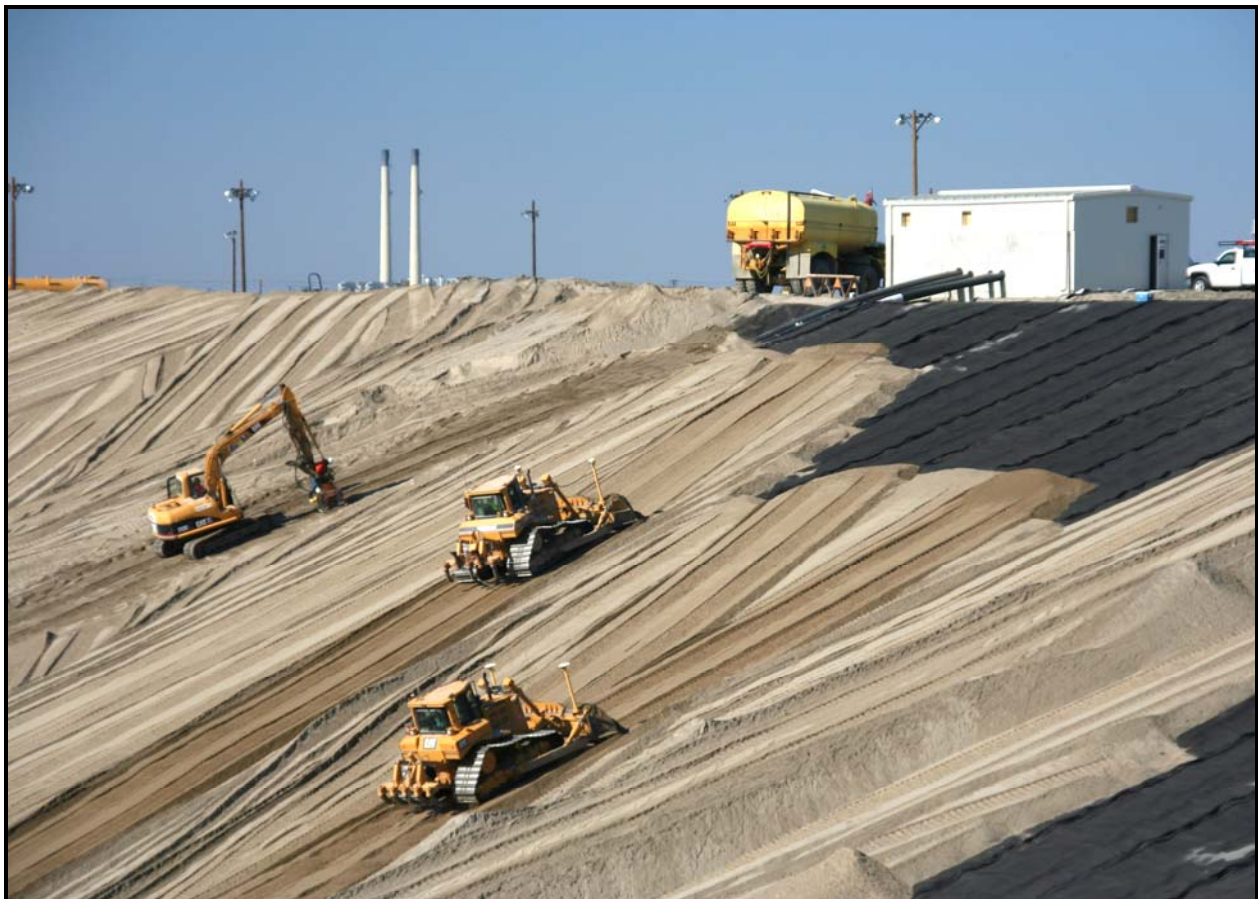
Super Cells 9 and 10 Construction

WCH continues to construct the liners and leachate collection systems for super cells 9 and 10 at a rapid pace.

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.

The project team focused on super cell 10 last week, completing the installation of the primary HDPE layer. Installation of the geocomposite layer is about 75% complete. Work to install the gravel drainage layer and geotextile layer also continues in super cell 10.

In super cell 9, the team continues to place the operations layer (3 feet of soil). Work also continues on the installation of the electrical and mechanical in the crest pad buildings for both super cells.



The project team places 3 feet of soil to form the operations layer on the north slope of super cell 9 at the Environmental Restoration Disposal Facility. (Photo 1)

ERDF (Continued)

The shells of ERDF's two new leachate storage tanks have been erected. Construction of the inside liners will begin next week. The new storage tanks – Nos. 3 and 4 – will replace the facility's two original storage tanks – Nos. 1 and 2.

Removal of tank No. 1 was completed in September, and tank No. 2 will be removed when the 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.



The new replacement tanks each will have a capacity of 425,000 gallons, over 150,000 gallons more than the original tanks. (Photo 2)

ERDF (Continued)



A worker from Washington Closure Hanford subcontractor DelHur Industries assembles the sidewalls for one of the two new leachate storage tanks at the Environmental Restoration Disposal Facility. (Photo 3)

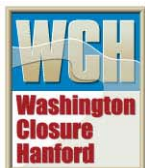
ERDF (Continued)

Facility and Equipment Upgrades

WCH subcontractor ELRFowler continues to make significant progress with the construction of ERDF's new waste container maintenance facility. Fowler is working on the underground utilities (electrical, plumbing) and making other preparations for pouring the concrete slab next week. The container maintenance facility will include a large container repair line, a maintenance shop, and a weld area.

ELRFowler also is building the forms for the stem walls at the new equipment maintenance facility. The stem walls join the building foundation with the vertical walls. 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.

ELRFowler, a joint venture between local companies ELR Consulting and Fowler General Construction, also will construct an upgraded transportation truck maintenance facility. The 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.



ERDF (Continued)



Washington Closure Hanford subcontractor Fowler General Construction installs underground utilities at the container maintenance facility. (Photo 4)

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)

A new batch plant is scheduled to be delivered to ERDF next month. 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.



A pump truck provides concrete for grouting two hot cells from the 327 Building. The pump truck will support the new batch plant at the Environmental Restoration Disposal Facility. (Photo 5)

WCH has received vendor bids for a new septic system at ERDF. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

Work began to manufacture crushed base rock for the expanded container transfer area (CTA). The existing CTA will be expanded 600 feet, providing additional storage for about 300 waste containers.

ERDF (Continued)

Mission Support Alliance subcontractor Fowler General Construction completed repair work on three Hanford Site roads used to transport waste material for disposal at ERDF. Routes 1, 2, and 4 are operational. Fowler also is beginning work to construct a new turn lane for vehicles going to ERDF via North Landfill Road. Construction is scheduled for completion by mid-November.

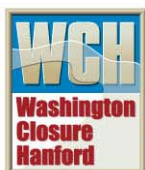
Vista Engineering continues work on the final design of weather enclosures for crest pad buildings 1 and 2. Vista Engineering is a local company and subcontractor of DeIHur. Final design is due October 25.

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.

Video

[Click here to view a video of cell construction progress at ERDF.](#)



618-10 Burial Ground

618-10 Trench Remediation Project

WCH subcontractor White Shield/Apollo continues earthwork for site upgrades at the 618-10 Burial Ground. Sites for the office trailer complex and waste container transfer area are under construction.

WCH awarded White Shield/Apollo a subcontract worth nearly \$3.7 million in July to install water, electricity, roads, office trailers, and a waste container transfer area for remediation at the 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 scheduled to complete infrastructure work by February 2011.



Washington Closure Hanford subcontractor White Shield/Apollo prepares to spread gravel on the office trailer site at the 618-10 Burial Ground. (Photo 6)

618-10 Burial Ground (Continued)



White Shield/Apollo works to improve the roads around the 618-10 Burial Ground. (Photo 7)

Last week, WCH awarded two subcontracts totaling nearly \$2.1 million for lease of heavy equipment for trench remediation. CWR Enterprises of Rathdrum, Idaho, partnered with Rowand Machinery of Spokane, Washington, for a \$1,378,000 subcontract. Acquisition Business Consultants of Richland, Washington, partnered with Peters & Keatts of Lewiston, Idaho, for a \$718,000 subcontract. Both companies meet small business procurement requirements and are designated as historically underutilized businesses, or HUB zone businesses.

Work also continues in developing 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.

618-10 Burial Ground (Continued)

WCH hosted a technology review workshop last month that was attended by DOE and EPA. 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.

Intrusive characterization field operations at the burial ground were completed in early September. Test pits were dug 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 the intrusive trench characterization activities. 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 that 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.



618-10 Burial Ground (Continued)

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.

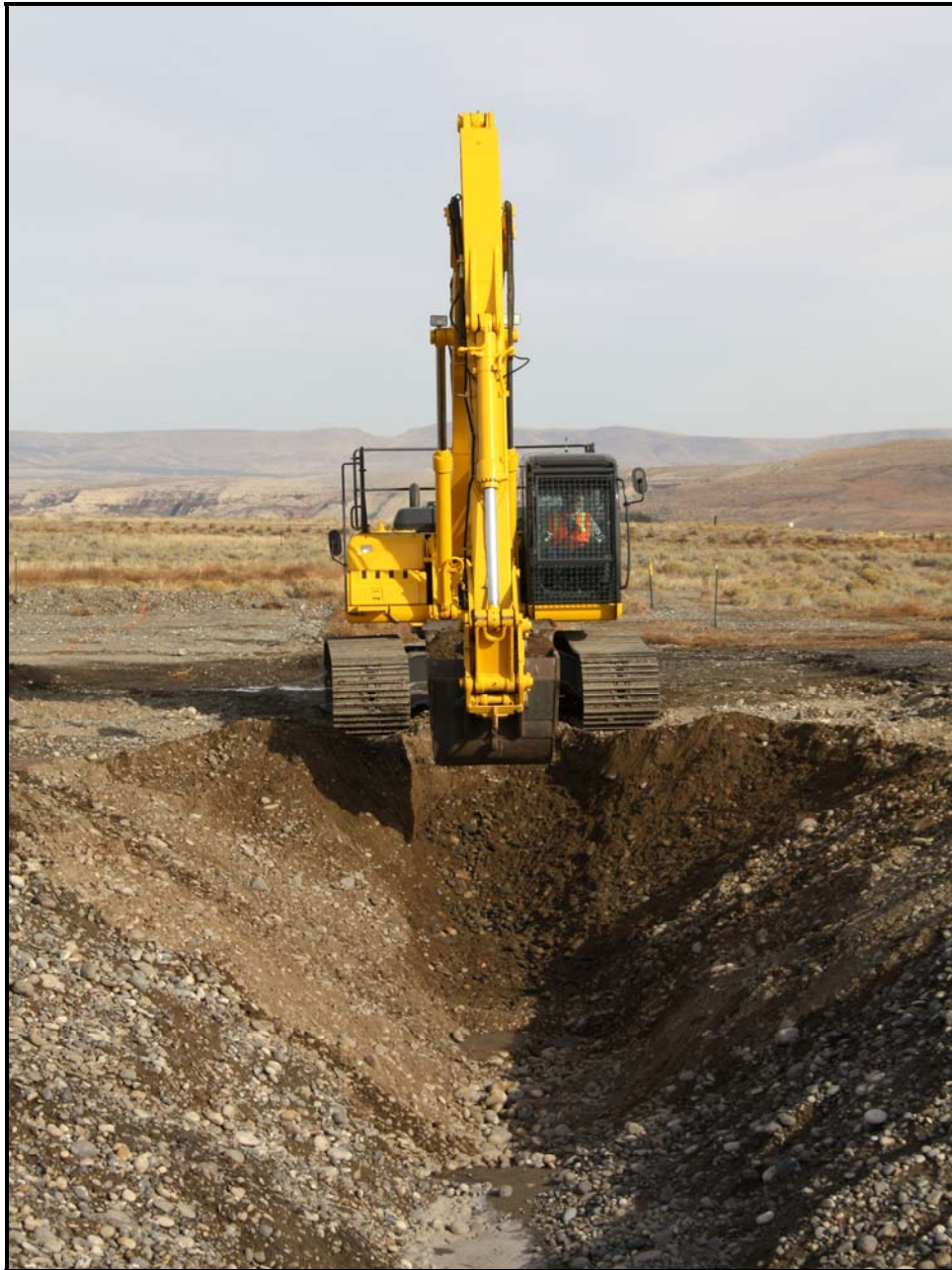
Upcoming Activities

- Continue procurement process for various subcontracts.
- Continue with construction of site upgrades.
- Continue development of non-intrusive characterization report.



100-F Area

WCH and subcontractor Ojeda Business Ventures continued remediation activities at 19 waste sites in 100-F Area. The project team continued overburden removal at 10-F-26:4 and will begin excavation and loadout at the site next week. The team continued excavation and loadout activities at 100-F-48 and stripping overburden from waste stockpile areas. The occupancy permit for the new subcontractor survey structure also was received.



Removing overburden continued at 100-F-26:4. Excavation and loadout activities will begin at the site next week. (Photo 8)

100-F Area (Continued)

In June, WCH awarded Ojeda a subcontract worth \$3.8 million to remediate the 100-F Area waste sites. Ojeda is a small disadvantaged business based in Richland, Washington, that specializes in construction, renovation, and construction management of federal government projects. Remediation of the wastes sites is scheduled to be completed by spring 2011.

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. The 19 sites that require remediation are:

- 600-351 (stained oil areas)
- 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

- Begin excavation and loadout at 100-F-26:4.
- Continue excavation and loadout at 100-F-48.
- Continue excavation and loadout at 100-F-47.
- Collect in-process samples from the eastern portion of 100-F-48.



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.



Confirmatory Sampling

The confirmatory sampling campaign is scheduled to continue over the next three months and will be performed in the 100-D, 100-K, and 100-IU Areas of the Hanford Site. More than 30% of the campaign is complete.

Sampling is under way at IU 2&6. Sampling at 100-D and 100-F were completed in September. Results 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.

Sampling is being performed by WCH subcontractor TerranearPMC (TPMC) in accordance with the regulator approved work instructions that were completed earlier this year. TPMC is a small disadvantaged business 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 this week.

Media, Visits, Press Releases

No significant media events this week.

Contracting Actions

- Proposals are being evaluated for 618-10 labor services.

