Washington Closure Hanford

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Special Edition

the Current

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Special Edition

Editor's Note: *Periodically, we will focus a special edition of the* Current *on a particular issue or an individual group. This first special edition is devoted to Waste Operations and subcontractor employees who completed more than a year's worth of major safety upgrades and process improvements earlier this spring.*

Landfill Receives Major Upgrades and Process Improvements

The Environmental Restoration Disposal Facility is at the hub of cleanup operations for the River Corridor. As long as disposal operations proceed smoothly and empty containers are delivered and full ones are shipped to ERDF, work can continue at burial grounds and demolition sites. But, if ERDF is shut down for more than a day or so, cleanup work at D4 and Field Remediation sites can be affected severely.

Safety

Safety is paramount to the overall success of the project. "The Waste Operations team has a very pro-active, engaged safety program – including our Local Safety Improvement Team – that is the basis for the success of the project," said Waste Operations Director Bruce Covert.

Nearly 40 employees working at ERDF for Washington Closure and subcontractors Eberline Services Hanford, Integrated Logistic Services and DelHur Industries have earned their Safety Trained Supervisor certification.

Significant safety achievements include:

- Certifying nearly 40 employees as Safety Trained Supervisors
- Working four months without a first-aid case
- Logging more than 12 million miles with only one at-fault accident in 12 years of operation
- Incurring no injuries since construction of cells 7 and 8 started
- Incurring no lost-time accidents since the facility opened in 1996

200-container Goal

Many of the recent upgrades and enhancements at ERDF were driven by the desire to become more efficient in handling the expected increase in waste volumes from Washington Closure and other Hanford contractors. Waste Operations staff have a goal to receive and dispose of 200 containers of waste a day on average. The daily totals shipped and disposed are printed in the *Daily Bulletin* to keep the goal before project employees.

With the upgrades completed in early spring 2008, the facility has the capacity to dispose of over 250 containers per day. Other changes have significantly increased the safety and efficiency with which waste materials are handled.

Landfill Upgrades continued

Improvements

Over the last year, the Waste Operations team has upgraded processes and equipment to receive larger volumes of waste and improve safety. The improvements include:

- New compaction methods and equipment
- Leachate system upgrades
- Requirements and commitment databases
- New equipment, including D9 bulldozer, long haul trucks, 100 containers and scale

New Compaction Method Approved

In April 2008, DOE and the U.S. Environmental Protection Agency granted the most significant change in operations when they approved the revised Waste Materials Management Plan. The two most significant changes approved in the plan were the use of GPS-equipped landfill compactors to compact waste and allowing a 1-to-1 soil-to-debris ratio in place of the previous 3-to-1 ratio for void fill and compaction requirements.

Rick Glazier (left) and Larry Miller, both with S.M. Stoller, secure the door of a container after being emptied at an ERDF dump ramp. Despite wind, rain and an anomaly or two, the crew averaged 200 cans per day for the last week.

The new compaction method uses two newly purchased Caterpillar 836H Landfill Compactors to make several passes over placed waste. Each compactor contains a GPS receiver tied to a proprietary Computer-Aided Excavation System. Equipment operators, along with engineering staff, monitor compaction as the machine passes over the waste via on-screen displays inside the compactors and remote computer monitors. System operators use the output to verify that waste is sufficiently compacted or requires additional compaction.

Mechanics Merrick Veit (left) and Mike Stoltz carry material used to help maintain Washington Closure's fleet of 600 containers, including 100 new containers placed in service this year.

"Another huge process improvement was the change in compaction ratio. It provides for more efficient use of the landfill by reducing the use of clean soil," said Gary Snow, project engineer for Waste Operations.

Past operations required three containers of soil for each container of building debris. If a 3-to-1 ratio of contaminated soil wasn't available, clean soil had to be used to achieve the mandated compaction ratio. "And, everyone agreed that it didn't make sense to use up valuable landfill space by filling it with clean soil," Gary said.

To gain approval for a change to the 1-to-1 soil-to-debris ratio, Washington Closure constructed two test pads. Workers placed waste at a 1-to-1 ratio of soil to debris and a 2-to-1 ratio of soil to debris and compacted it at various lift thicknesses. Subsidence of each lift within the test pad was monitored and results were documented. As a result, DOE and EPA approved the use of the 1-to-1 soil-to-debris ratio.

Teamwork Critical

"The Waste Operations project's success is due to the great teamwork exhibited across the project, including all the functional organizations, D4 and FR personnel," said Jeff Armatrout, operations manager for Waste Operations. The Waste Operations team comprises Washington Closure, Eberline Services Hanford, S.M. Stoller, Integrated Logistic Services, DelHur Industries and Envirotech, along with other small subcontractors. Jeff said an integrated team is necessary to achieve safe, compliant disposal of the project's waste.

The Waste Operations team continues to enhance its integration and customer service with D4, FR and other Hanford contractors so any potential snags in disposal are addressed before waste shows up at ERDF.

Bruce Covert added that DOE and EPA have been an integral part of the upgrades since the beginning. "They share our desire to have the safest, most efficient and productive disposal facility in the DOE complex," he said. "Each played a key role in helping identify new upgrades and getting us to the point where we could implement them."

Jeff Armatrout (center) roasted prime rib for Washington Closure, Stoller, Eberline Services Hanford and Integrated Logistic Services employees in appreciation for their work in completing numerous safety and production upgrades, along with process improvements, over the last year. Jeff and Rick Caulfield, with Washington Closure, serve ILSI employees Nolan Woodward (left), Kendra Reed and Corey Brown (right).

Landfill Upgrades continued

Requirements and Commitment Database Developed

ERDF staff identified more than 500 regulatory requirements that govern operations. To help track action items, the team compiled all requirements into a comprehensive database that provides the specific regulatory requirement, the approved plan with the requirement identified, the implementing procedures and routine action-item tracking. Another database was developed to ensure commitments are implemented.

ERDF Expansion in Full Swing

ERDF is in the midst of its third expansion since the facility opened in 1996. Subcontractor DelHur Industries began excavating cells 7 and 8 on January 23, and completed the task right before Memorial Day. In the process, they excavated 1.1 million cubic yards of soil.

Bill Borlaug, Washington Closure, provides a briefing on the ERDF expansion project to members of the National Resource Trustee Council, who toured the site on June 4. DelHur Industries excavated about 1.1 million cubic yards of soil and last week began construction of the liner system for new disposal cells 7 and 8.

The crew also completed setup, calibration and testing of the admix batch plant and began constructing the liner system. Admix is the bentonite/sand mixture that makes up the clay liner portion of the multi-liner system that keeps contaminants from leaching to the environment.

The project received the first of 150 railcar shipments of bentonite from Wyoming the first week in May and began full-scale production of admix in late May.

"The project team has developed a great working chemistry that began during the submittal review and approval process and is continuing into daily work activities," said Tom Kisenwether, ERDF construction manager.

"During excavation, we had over 700 truck loads of material being removed every day. Now we have loads of clay arriving, as well as admix production and placement underway. Communication, coordination and good working relationships are keys to a safe work environment," Tom said.

The DelHur crew also completed installation of three stainless steel pipes that run the length of the new cells. The pipes are a new feature to the facility. Instruments will be inserted into the pipes to monitor the vadose zone under ERDF. The vadose zone is the layer of soil between the ERDF base and the groundwater.

The new cells will be ready to accept waste in spring 2009. Once expansion is completed the facility will have a capacity of about 11 million tons.

Scale Improvements

To help meet the increased waste volumes, project staff placed in service a second, fully automated scale. The data for each truck and container is matched with the shipping manifest and weight of the container contents to generate real-time data regarding the amount and type of waste entering the facility.

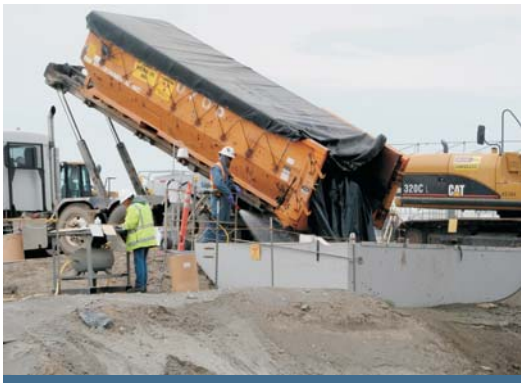
Bob Wallace, ILSI, received the Jake Award this year from the Hanford Site Health and Safety Expo steering committee. Named for a Safety Expo founder, the Jake Award is presented each year to the hardest working volunteer. "And Bob worked his tail off," said Jay Wheatley, HAMTC safety representative. Bob, an ILSI long-haul driver, is part of the team that logged 12 million miles with only one at-fault accident and zero at-fault accidents on the River Corridor Closure Project. Pictured are (left to right) Jay Wheatley, Bob and Dave Mohn, with ILSI.

Congratulations to the entire ERDF team for a very successful year.

Leachate System Upgraded

ERDF is a lined facility with a multi-barrier system. Each pair of cells contains a liner comprising multiple layers of impermeable clay and plastic and a system to collect and remove liquid – or leachate – from dust suppression, rain and snow as it seeps to the bottom of the facility.

The leachate is pumped into holding tanks before being sent via underground piping to the Hanford Effluent Treatment Facility for treatment and disposal.



Scott Sutton and Gunnar Leidel, with Stoller, dump lead-contaminated soil into a mix box. The lead-contaminated soil is mixed with cement as part of a treatment process and must be removed before it hardens. The crew will treat about 28,000 tons of lead-contaminated soil from the 618-7 Burial Ground over the next two months.

In early 2007, Washington Closure discovered that part of the leachate collection system was not working properly. As a result, the entire system was revamped. New programmable logic controllers were installed, along with monitoring systems for the sump pumps and holding tanks.

The new system also contains an automatic feature to notify managers via text messaging when alarms are activated, power is lost or any number of pre-set conditions are exceeded. The new computerized system allows personnel to view the status of the leachate collection system in real time and collect data in sufficient detail to provide an auditable record.

The ERDF is built two storage areas, or cells, at a time. Each pair of cells is 500 feet wide by 1,000 feet across and 70 feet deep. The facility is being expanded for the third time and will have a capacity of 11 million tons once cells 7 and 8 are finished in early 2009. At its base, the eight cells take up the same area as nearly 35 football fields.