

618-10 Burial Ground Washington Closure's Cleanup Progress along the Columbia River

Background

One of the most highly radioactive waste sites in the U.S. Department of Energy (DOE) complex is located just six miles north of Richland, Washington. It is known as 618-10 Burial Ground. The 7.5 acre burial ground received highly radioactive waste from Hanford laboratories and reactor fuel development facilities across the United States from 1954 through 1963. The 618-10 Burial Ground is one of Hanford's most complex and challenging burial grounds.



Since beginning cleanup work at the 618-10 Burial Ground in April 2011, Washington Closure Hanford's (WCH) 618-10 project team found 12 waste trenches that contained low-to-moderate activity waste, and 94 vertical pipe units (VPUs) that contained moderate-to-high activity waste. VPUs were once thought to all be five bottomless 55-gallon drums welded together end-to-end and buried vertically. A recent review of historical records and photos indicate other types of VPUs may exist, such as 14-inch corrugated pipes and potentially 12-inch schedule 40 steel pipe. The highly skilled workforce must anticipate the unexpected hazards and progress safely.

The project team installed 10 VPUs with simulated waste. One VPU contained a tracer to evaluate the mixing during the augering process. Three types of VPUs (drum, corrugated pipe and schedule 40 steel pipe) were installed to represent the different types in the burial ground. In April, the team installed 48-inch over-casings using a vibratory hammer. They then began augering a drum style VPU.



Project staff and stakeholders monitor the installation of a 48-inch over-casing to begin augering a drum style VPU.



An auger was used to mix the simulated waste inside of the VPU, within a steel over-casing.



Material in a simulated drum style VPU is augered during method testing.

At the end of augering process, the material was taken out in one foot lifts. The material is being evaluated for a number of parameters such as size reduction, moisture content, and mixing. In addition to the material evaluation, valuable data is being collected on the equipment and auger performance.



The project team evaluating the simulated waste after being augered.



Simulated VPUs were constructed and buried in preparation for the method testing.



Two project team members are cleaning up after the augering.

Washington Closure Hanford, a limited liability company led by URS and its partners, Bechtel National and CH2M Hill, is 91 percent complete with its mission of cleaning up the Columbia River corridor, a 220-square-mile section of the U.S. Department of Energy's Hanford Site in southeastern Washington state. The River Corridor was home to Hanford's nine plutonium-production reactors and fuel development facilities, and hundreds of support structures. Through April 2014, Washington Closure has demolished 299 of 333 buildings, cleaned up 490 of 592 waste sites, placed two nuclear reactors in interim safe storage, and disposed of 9.9 million tons of contaminated material in the Environmental Restoration Disposal Facility.