

# Chemical Waste Landfill (CWL)

The Chemical Waste Landfill (CWL) at Sandia National Laboratories/New Mexico (SNL/NM) is an interim status landfill undergoing closure in accordance with 40 CFR 265, Subpart G, and the CWL Final Closure Plan (Closure Plan) (SNL/NM December 1992 and subsequent revisions). Formal closure of the CWL began in February 1993 when the New Mexico Environment Department (NMED) approved the Closure Plan. The CWL is approximately 1.9 acres and is located in the southeast corner of SNL/NM Technical Area-3 (TA-3). Disposal operations at the CWL began in 1962. In 1981, all liquid waste disposal in unlined trenches stopped and solid waste disposal ended in 1985. The CWL operated under Resource Conservation and Recovery Act (RCRA) interim status as a hazardous waste drum storage facility with a capacity for 300 drums until 1989. The CWL operation was discontinued completely in 1989, and all pits were covered with soil backfill.

In the spring of 1990 the presence of trichloroethylene (TCE) in groundwater beneath the CWL was confirmed at concentrations exceeding the regulatory standard. Since this finding, a corrective action plan was developed and included in the Closure Plan. The nearest water supply well to this site is four miles to the northwest.

## **CWL Closure and Remediation**

Since 1993 the Closure Plan has been amended to include the installation of additional monitoring wells, aquifer testing, and extensive soil and vadose zone soil gas sampling to complete characterization of the site; two voluntary corrective measures (VCMs) that represented an extensive remediation effort conducted from 1997 through 2003; and changes to the closure process based upon direction from the NMED.

In 1996, an expedited approach to the CWL Corrective Action Program was proposed that included two interrelated VCMs: vapor extraction (VE) and landfill excavation (LE). The two VCMs were developed to address the two main sources of contamination (original waste in the landfill and the resulting volatile



CWL At-Grade Vegetative Soil Cover in April 2010

organic compounds [VOC] soil-gas plume) and to mitigate the impact to groundwater beneath the site.

The VE VCM was designed to reduce and control the VOC soil-gas plume, remediate groundwater concentrations of TCE below the regulatory standard, and to prevent further degradation of groundwater. The active phase of the VE VCM (forced-air injection and extraction) was completed from May 1997 through July 1998, and resulted in the removal of approximately 7,000 lbs of VOCs. Excavation of the landfill began September 1998. All buried debris and contaminated soil exceeding the NMED-approved risk-based standards was removed by January 2003. Over 52,000 cubic yards of soil and debris was removed from the landfill and disposed of at approved facilities. The CWL was backfilled to 4 foot below ground surface in two campaigns and was completed by February 2004. Material used for the backfilling included some of the soil removed from the footprint of the former landfill as well as clean fill brought in from a local TA-3 source.

In September 2004, the NMED approved a request to install an at-grade alternative evapotranspirative (ET) cover as an interim measure. The interim measure was implemented and construction of the ET Cover was completed in September 2005. The current conditions of the former CWL are protective of human health and the environment as a result of the extensive voluntary cleanup, which included the

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complete excavation of the former waste disposal areas.

## Recent Activities and Regulatory Background Information

A revised CWL Post-Closure Care Plan and Permit Application were submitted to the NMED in September 2005. On May 21, 2007, NMED issued a draft CWL Post-Closure Care Permit, along with the CWL Corrective Measures Study (CMS) Report, and a Closure Plan Amendment, for a 60-day public comment period. DOE and Sandia submitted comments to the NMED and requested a public hearing. The comment period was extended for 30 days (until August 20, 2007) at the request of interested parties, several of whom also requested a public hearing.

In August 2008, NMED extended invitations to the interested parties that requested a public hearing for participation in informal negotiations. These negotiations were concluded in September 2009. A Settlement Agreement (“Stipulation”), effective on October 15, 2009, specified the withdrawal of the DOE/Sandia and the interested parties respective requests for a public hearing as well as their agreement not to appeal the decision of the NMED Secretary to approve the CWL CMS Report with final remedy (previously installed at-grade ET Cover), Closure Plan Amendment as Changed, and the negotiated Post-Closure Care Permit. The Final Order of the NMED Secretary, In the Matter of Application for a Post-Closure Care Hazardous Waste Permit for the Chemical Waste Landfill, Sandia National Laboratories No. NM5890110518 (Final Order), represents the issuance of the Permit on October 15, 2009 and clarifies that the Permit will not be effective until the NMED formally approves the DOE/Sandia certification of closure. The NMED separately issued a “Notice of Approval Final Remedy and Closure Plan Amendment, Chemical Waste Landfill” on October 16, 2009.

## Current Status and Future Work at the CWL

DOE/ Sandia completed at-grade ET Cover revegetation activities in November 2009 following a plan approved by NMED, and the installation of four new groundwater monitoring wells in July 2010 according to the approved Closure Plan Amendment. The Final RCRA Closure

Report and certification of closure, as required by 40 CFR 265.115, was prepared and submitted to the NMED for approval in late September 2010. The Final RCRA Closure Report documents the backfilling of the LE VCM excavation, construction of the at-grade ET Cover, cover revegetation activities installation of four new groundwater monitoring wells, an end-state risk assessment, and the end-state conditions of the CWL.

The CWL Post-Closure Care Permit became effective on June 2, 2011, when NMED issued approval of the closure certification and the Final RCRA Closure Report. Monitoring and post-closure care are now conducted according to the requirements of the Permit. Semi-annual groundwater monitoring performed since completion of the VE VCM in 1998 has shown the presence of TCE at concentrations below the Environmental Protection Agency’s (EPA’s) drinking water standard of 5 micrograms per liter (or parts per billion).

## CWL Environmental Data

Annual groundwater data can be found on the following webpage:

<http://www.sandia.gov/news/publications/environmental/>

The CWL Annual Post-Closure Care Report for Calendar Year 2011 can be accessed using the following link:

<http://hdl.handle.net/1928/20223>

## Contact Us!

For more information, contact Community Involvement:  
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