**Monthly Progress Report**
**Corrective Measures Study (CMS)/Corrective Measures Implementation (CMI) for**
**Consolidated Unit 16-021(c)-99**
**May 2010**

This report summarizes Los Alamos National Laboratory (LANL) activities completed during May of fiscal year 2010 on the CMS/CMI for Consolidated Unit 16-021(c)-99, the Technical Area 16 (TA-16) 260 Outfall. Activities outlined in the CMS plan ([LA-UR-98-3918] approved by the New Mexico Environment Department [NMED] Hazardous Waste Bureau on 9/8/99) and other related activities are described herein.

**Description of Activities and Contacts** – A tour for NMED and U.S. Environmental Protection Agency (EPA) representatives was conducted on May 26, 2010. The tour focused on recent CMI activities and included the excavated area in the outfall and the permeable reactive barrier (PRB) site. Discussion points included the path forward on the PRB and the National Pollutant Discharge Elimination System– (NPDES-) permitting issues for the spring filters.

***Best Management Practices (BMPs)*** – BMPs are inspected quarterly and following significant precipitation events. Several small precipitation events occurred in May, one of which exceeded 0.5 in. BMPs were maintained in both the 260 Outfall area and PRB installation area in support of the CMI.

***CMS Hydrogeologic Investigations*** – Hydrogeologic investigations include periodic water sampling as outlined in the Phase II Resource Conservation and Recovery Act facility investigation (RFI) work plan as well as continuing investigations delineated in the CMS plan. The ongoing spring sampling program, currently focused on capturing high-flow events, includes biannual sampling at Martin, SWSC, and Burning Ground Springs. These activities are now conducted under the auspices of LANL's interim facility-wide groundwater monitoring plan.

Flow in the TA-16 canyons remained strong in May. Localized surface flow is present in mesa-top drainages. Martin Spring is flowing at a rate of > 0.1 L/s, Burning Ground Spring is flowing at a rate of < 1.5 L/s, and SWSC Spring is flowing at a rate of < 0.3 L/s.

The 90s Line Pond contains less than 1 ft of water. Surface water is present in Cañon de Valle from upstream of the outfall channel to beyond the former location of Material Disposal Area P.

***RFI and CMS/CME for Surface System*** – These activities have been completed.

***RFI/Investigation Report (IR) and CMS/CME for Deep Groundwater*** – Well R-25c, which is not producing water, was completed in September 2008. Well R-25b was drilled and completed in October 2008. The well completion report for R-25c was submitted in September 2008, and the well completion report for R-25b was submitted in October 2008.

A May 10, 2010, letter from NMED requested LANL replace regional aquifer screens ( in particular screen 5) in R-25 with a new single screen well and submit a drilling work plan by June 18, 2010.

Well CdV-16-3(i) (renamed R-48) was deepened to 1705 ft in September 2009. Well construction was completed in late September (NMED complete on September 25, 2009).

Well R-47i at TA-14 was completed in November 2009 to a depth of 895 ft (NMED complete on November 15, 2009).

An NMED approval of the Hydrologic Testing Work Plan for Consolidated Unit 16-021(c)-99 was received in a letter dated May 20, 2010. The letter requested LANL provide a plan detailing the objectives and approach for the tracer test by June 15, 2010.

***CMI –*** Permitting for CMI activities is proceeding slowly. It was determined that the storm-filter systems in the springs required NPDES permits because of elevated levels of aluminum; LANL's permitting group is currently working this issue with EPA. The issue is the naturally occurring levels of aluminum in the spring water exceed water standards.

TerranearPMC continued water-level monitoring and sampling activities in May. Manual water-level measurements were collected from the 16 alluvial monitoring wells and 4 piezometers on May 4, May 7, May 21, and May 25. Several of the monitoring wells distal from the stream channel are dry. The water level behind the cutoff wall at the PRB reached the intake pipe in late March 2010. The valve to the vessel was opened on April 2, 2010.

Background water-chemistry data were collected from six alluvial monitoring wells before the PRB valve was opened. Three of the wells are located upstream of the treatment vessel, and three are located downstream of the treatment vessel.

The first round of PRB sampling was completed during the first week of May. Sampling included the six alluvial monitoring wells and the five sampling ports of the PRB vessel. The results from this sampling event are expected in July 2010.

The "Long-Term Monitoring and Maintenance Plan for the Corrective Measures Implementation at Consolidated Unit 16-021(c)-99" was completed and submitted to NMED on April 23, 2010.

***Public and Stakeholder Involvement*** – As noted above, a tour for NMED and EPA representatives was held on May 26, 2010.

**Percentage of CMS Completed**

LANL estimates 100% of the surface CMS has been completed.

**Problems Encountered/Actions to Rectify Problems**

R-25c is not producing water, and the current level remains below the screen; R-25b is still showing high turbidity. LANL will continue to monitor the well screens.

The status of aluminum under potential NPDES permits for the storm-filter systems is problematic, as noted above in the CMI section.
Bentonite present in R-47 necessitated completion of this well as an intermediate well. A new deep well at this site may be required.

**Key Personnel Issues** – None

**Projected Work for June 2010**

***BMPs***

- Continue to inspect existing BMPs following significant precipitation events
- Inspect new BMPs to support CMI

***CMS Hydrogeologic Investigations***

- Maintain the site at the TA-16 trailers
- Check for the presence and levels of water in Cañon de Valle alluvial system
- Continue precipitation monitoring

***Groundwater CME/CMI***

- Complete drilling work plan for R-25 replacement regional well (screen 5)
- Submit letter requesting deferral of tracer test
- Continue site preparation and initiate drilling at CdV-16-4ip

***CMI***

- Continue NPDES permitting and discussions with EPA
- Continue monitoring water levels in PRB wells
- Continue sampling PRB wells and treatment vessel
- Continue site restoration and waste management activities at CMI remedy sites

***Public and Stakeholder Involvement*** – None