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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during January of fiscal year (FY) 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 [HWB] on 9/8/99) and other related activities are described herein.

Description of Activities and Contacts – A tour of the permeable reactive barrier (PRB) for NMED representatives was held on January 14, 2010.

Best Management Practices (BMPs) – BMPs are inspected quarterly and following significant precipitation events. Several small precipitation events occurred in January, none 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.

The hydrologic system in Cañon de Valle is drying out but is frozen. Martin Spring is flowing at a rate of <0.05 L/s, Burning Ground Spring is flowing at a rate of <0.2 L/s, and SWSC Spring is no longer flowing.

The 90s Line Pond contains a small amount of ice, and downgradient surface locations in Martin Spring Canyon and Cañon de Valle have also dried up. The alluvial wells are drying up as well. Alluvial well samples could be collected only in October at 16-2556 and 16-2559 (Cañon de Valle) and 16-6294 and 16-6295 (Martin Spring Canyon). Surface water is present in Cañon de Valle from Burning Ground Spring to beyond the former location of Material Disposal Area P.

RFI and CMS/CME for Surface System – The surface system CMS report was completed and submitted to NMED on November 26, 2003; the RFI report was completed and submitted in September 2003. A response to the notice of deficiency on the RFI report was submitted on January 28, 2004, and an addendum to that response was submitted on February 25, 2004. An approval with modifications for the RFI was received on June 23, 2004, and a response to the approval was submitted to NMED on July 23, 2004. The RFI text modifications were completed during December 2004 and submitted to NMED. A notice of disapproval (NOD) on the CMS report was received May 16, 2005. A response to that NOD was submitted on June 15, 2005.

NMED issued the "Intent to Public Notice Remedy Selection for the Solid Waste Management Unit 16-021(c)" on May 15, 2006. The remedy was approved by NMED in a letter dated October 13, 2006.

RFI/Investigation Report (IR) and CMS/CME for Deep Groundwater – The IR for TA-16 groundwater was completed and submitted to NMED on August 31, 2006; an approval with direction, dated November 29, 2006, was received by email the same day. This approval required an additional report assessing the quality of the wells in and around TA-16. This information was provided to NMED in a letter dated January 17, 2007.

The TA-16 well evaluation report was submitted to NMED on April 30, 2007, and an NOD was received on August 17, 2007. NMED approved the revised TA-16 well evaluation report on February 11, 2008. A response to this approval was submitted on March 15, 2008. Two drilling work plans [for CdV-R-15-1 and CdV-16-3(i)] were submitted as part of this approval response and were approved by NMED in letter dated March 28, 2008. An approval of the drilling work plan for the R-25b well, which was submitted in June 2007, was received in November 2007. A letter from NMED requiring completion of the CdV-16-3(i) as a regional well by July 30, 2008, was received in December 2008. The drilling work plan for R-25c was submitted in February 2008 and was approved in a letter dated March 11, 2008. Drilling of well R-25c was completed in September 2008, and the well was constructed at that time. Well R-25c is not producing water. Well R-25b was drilled and the well was constructed 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.

The groundwater CME report was submitted to NMED on August 31, 2007, and an NOD requiring submittal of a supplemental investigation work plan (IWP) was received on April 22, 2008. The supplemental IWP was completed and submitted on June 30, 2008. An approval with modifications of the supplemental IWP was received on January 26, 2009.

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

Well R-47(i) at TA-14 was completed in November 2009 (NMED complete on November 15, 2009).

The plugging and abandonment of CdV-16-2(i) was completed in July 2009.

CMI – The CMI plan was submitted to NMED on May 10, 2007. NMED updated the CMI schedule by letter on June 24, 2009, and added the summary report for remedial activities to the FY2010 stipulated-penalty document list.

Bench and pilot studies supporting the CMI were completed, and a report of these activities is in progress. Permitting for CMI activities continued in January. It was determined that the storm-filter systems in the springs required National Pollutant Discharge Elimination System (NPDES) permits; LANL's permitting group is working on these permits. The status of aluminum is problematic in the

NPDES permitting process for these systems; negotiations with U.S. Environmental Protection Agency (EPA) are ongoing.

TerranearPMC (TPMC) completed CMI activities in January 2009. Site-restoration activities were continued in the upper drainage and troughs areas.

The storm-filter system was repaired in Martin Spring in January 2010.

Installation of the PRB was completed in January 2010. The cut-off wall was completed, the PRB pluming was installed and 20 alluvial monitoring wells were completed.

The pump test plan was completed in January 2010.

Public and Stakeholder Involvement – None

Percentage of CMS Completed

LANL estimates 100% of both the surface CMS and the groundwater CME has been completed. This estimate does not include additional work covered by the work plan submitted on June 30, 2008.

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. The systems are not designed to remove aluminum, which is above standards, but is most likely present as a naturally occurring chemical. Negotiations will be undertaken with EPA.

Bentonite present in R-47 necessitated completion of this well as an intermediate well. It is possible a new deep well at this site will need to be drilled.

Key Personnel Issues – None

Projected Work for February 2010

BMPs

- Continue inspection of existing BMPs following significant precipitation events
- Install new BMPs to support CMI

CMS Hydrogeologic Investigations

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

Groundwater CME/CMI

- Continue site restoration at wells R-47i and R-48

CMI

- Write-up of lab scale tests will be conducted to finalize selection of the media for the PRB.
- NPDES permitting and discussions with EPA will continue.
- Site restoration and waste management activities will be continued at all CMI remedy sites.

Public and Stakeholder Involvement – None.