Monthly Progress Report
Corrective Measures Evaluation (CME)/Corrective Measures Implementation (CMI) for Consolidated Unit 16-021(c)-99
March 2011

This report summarizes Los Alamos National Laboratory (LANL) activities completed during March of fiscal year 2011 on the CME/CMI for Consolidated Unit 16-021(c)-99, the Technical Area 16 (TA-16) 260 Outfall. Activities outlined in the corrective measures study (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 – None.

Surface CME/CMI

Best Management Practices (BMPs) – BMPs are inspected quarterly and following significant precipitation events. Several very small events occurred in March; none exceeded 0.5 in.

CME 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, conducted under the auspices of LANL's interim facility-wide groundwater monitoring plan, includes biannual sampling at Martin, SWSC, and Burning Ground springs. The sampling of locations within the Water Canyon/Cañon de Valle aggregate area, including those surface sites most relevant for the TA-16-260 CME/CMI, was initiated in late March 2011 and will continue into early April 2011.

Flow in the TA-16 canyons remained low in March because of minimal spring run-off. Water levels have decreased by several inches in the wells and piezometers located near the permeable reactive barrier (PRB) since the summer water-level maxima. Martin Spring is flowing at a rate of ~ 0.08 L/s, Burning Ground Spring is flowing at a rate of ~ 0.3 L/s, and SWSC Spring did not flow over the weir-box exit.

The 90s Line Pond remains wet but is very small in extent. Surface water is present in Cañon de Valle from upstream of the 260 Outfall channel to beyond the former location of Material Disposal Area P. Most alluvial wells in Cañon de Valle and Martin Spring Canyon are wet (except CdV-02657 and MSC-06293), but those in Fishladder Canyon are dry.

CMI – Permitting for CMI activities continues to proceed slowly. It was previously determined the storm-filter systems in the springs required National Pollutant Discharge Elimination System (NPDES) permits because of elevated levels of aluminum. The basic problem is that naturally occurring levels of aluminum in the spring water exceed current water standards.

TerranearPMC continued water-level monitoring activities for the PRB in March. The results indicated water was backing up in the vessel. TPMC removed the lid of the vessel and found evidence of flow backup in the zero-valent iron (ZVI). There appeared to be a small amount of

flow through the media, but this flow was much reduced. The Laboratory may need to consider either changing the ZVI/sand ratio or trying another media, such as granular activated carbon (GAC), for removal of high explosives (HE). NMED will be consulted before a change is implemented. .

Subsurface CME/CMI

RFI/Investigation Report and CME for Deep Groundwater – Well R-25c, completed in September 2008, is not producing water.

Well R-47(i) at TA-14 was completed in November 2009 to a depth of 895 ft (NMED complete on November 15, 2009). The reliability assessment for this well was completed in March and submitted to NMED on March 29, 2011.

Well R-63 was completed to a depth of 1423 ft (NMED complete on February 9, 2011). The single screen was installed at a depth of 1325–1345 f t, backfilling was completed, and the screen was developed. This interval is located in a productive zone based on both geophysics and observations made during drilling.

Well CdV-16-4(ip) was drilled to a depth of 1150 ft in August (NMED complete on August 23, 2010).

The CdV-16-4(ip) pump test was nearly completed during March. The upper screen test was completed on March 7, 2011. The screen was allowed to reequilibrate for 10 d. The lower screen test commenced on March 22, 2011, and was nearly completed by April 1. A small head response was observed in screen 2 of well R-25 during the upper screen test. No obvious response was observed in any of the nearby wells associated with the lower screen test. Pumped water was treated onsite using a GAC system. Rapid-turnaround RDX (hexahydro-1,3,5-trinitro-1,3,5 triazine) analyses were used to ensure HE had been removed by the GAC system and the water met requirements specified in the notice of intent to discharge.

Public and Stakeholder Involvement – None

Problems Encountered/Actions to Rectify Problems

The status of aluminum under potential NPDES permits for the storm-filter systems is problematic, as noted above in the CMI section.

The ZVI cell in the PRB has problems with clogging. It may be necessary to adjust the media in the HE-removal cell.

Key Personnel Issues – None

PROJECTED WORK FOR APRIL 2011

Surface CME/CMI

BMPs

- Continue inspection of existing BMPs following significant precipitation events

CME 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
- Complete biannual sampling activities in Water/Valle watershed

CMI

- Continue NPDES permitting discussions with NMED and the U.S. Environmental Protection Agency
- Continue monitoring water levels and field parameters in PRB wells
- Determine whether to install an alternative PRB media for HE removal
- Continue waste management activities for water at CMI remedy sites

Subsurface CME/CMI

- Complete the R-25b and CdV-16-4ip pump tests and associated recovery periods

Public and Stakeholder Involvement – Continue discussions with NMED personnel regarding the PRB and pump tests.