Monthly Progress Report
Corrective Measures Study (CMS)/Corrective Measures Implementation (CMI) for
Consolidated Unit 16-021(c)-99
August 2007

This report summarizes Los Alamos National Laboratory (LANL) activities completed during August of fiscal year (FY) 2007 on the CMS/CMI for Consolidated Unit 16-021(c)-99, the TA-16-260 Outfall. Activities described in the CMS plan ([LA-UR-98-3918], approved by New Mexico Environment Department (NMED)-HWB on 9/8/99), and other related activities are described herein.

Description of Activities and Contacts

NMED Interactions – LANL and Department of Energy (DOE) representatives did not meet with NMED representatives during August 2007. The next meeting will be in September and the topic will be the "Evaluation of Suitability of Wells Near TA-16 for Monitoring Contaminant Releases from Consolidated Unit 16-021(c)- 99" and its recent Notice of Disapproval.

RCRA Facility Investigation (RFI) Phase II Report and CMS Plan– No activities this month

Best Management Practices (BMPs) – BMPs are inspected quarterly and following significant precipitation events. There were several small precipitation events in August (one greater than 0.5 in); however, these did not require repair of BMPs in the 260 outfall area.

CMS Hydrogeologic Investigations– Hydrogeologic investigations include periodic water sampling as outlined in the Phase II RFI as well as continuing investigations delineated in the CMS plan. The ongoing spring sampling program, currently focused on capturing high-flow events, includes biannual stable isotope sampling at Martin and Burning Ground Springs. These sampling activities are now being accomplished under the auspices of the interim facility-wide groundwater monitoring plan. All TA-16 groundwater monitoring locations were sampled in May.

The hydrologic system in Cañon de Valle remains wet following the higher-than-average intensity monsoonal rains, significant November through January snows, and unusual May rainfall. Martin Spring is flowing at ~ 2 L/min., Burning Ground Spring is flowing at a rate of ~0.5 L/ sec. After several years of being dry, SWSC Spring is flowing at a rate of ~0.1 L/sec.

The 90s Line Pond is wet as of the middle of August. Perched water was detected in a borehole located to the southeast of the 90s Line Pond during August. Downgradient surface locations in Martin Spring Canyon and Cañon de Valle are wet. The alluvial wells in lower Cañon de Valle and lower Martin Spring Canyon are wet. Surface water in Cañon de Valle is present from Burning Ground spring to MDA-P.

Ecological Risk Pilot–

The ecological risk pilot study is complete; results are presented in the Phase III RFI Report.

CMS Bench and Pilot Studies– Write-up of bench and pilot studies, many of which were conducted under the auspices of the Innovative Technology Remediation Demonstration (ITRD) program, have been completed. The ITRD HE program is focused on two DOE sites: LANL and Pantex. Ongoing studies include:

1. A study of the passive barrier technology of Stormwater Management, Inc., potentially useful for removing HE and barium from waters (LANL). Monitoring of barrier effectiveness recommenced after several quarters of drought conditions during which Martin spring was dry.
2. A study of in situ anaerobic bioremediation of HE using gas-phase carbon additions (Pantex).
3. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination (Pantex).

The CMS Report from Pantex detailing these studies is being reviewed and results are incorporated in the CME report that was submitted to NMED on August 31, 2007.

Interim Measure (IM) –

The IM Report was approved by NMED in a letter dated January 13, 2003. No new activities occurred during this reporting period.

RFI/IR and CMS/CME Reports –

The surface system CMS Report was completed and submitted to NMED on November 26, 2003; the RFI Report was completed and submitted in September of 2003. A response to the NOD on the RFI Report was submitted on January 28, 2004 and an addendum to that NOD response was submitted on February 25, 2004. An approval with modifications for the RFI was received 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. An 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. Public comments on this notice were due to NMED by July 14, 2006. LANL provided comments on this public notice. The remedy was approved by NMED in a letter dated October 13, 2006.

The Investigation Report (IR) for TA-16 groundwater was completed and submitted to NMED on August 31, 2006. An approval with direction of this IR dated November 29, 2006 was received by e-mail the same day. This approval requires an additional report assessing the quality of the wells in and around TA-16. Additional information, including borehole videos and X-ray

diffraction data, requested in this approval 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. An NOD on this document dated August 15, 2007 was received on August 17, 2007. An extension on portions of that NOD requiring response within the CME Report was submitted to NMED on August 24, 2007. The response to that NOD is due to NMED on September 30, 2007.

The Groundwater CME Report was submitted to NMED on August 31, 2007.

Corrective Measures Implementation (CMI) Plan –

Batch and column studies to support the permeable reactive barrier (PRB) design are continuing; initial studies suggest there are several media, including gypsum, a zeolite and "fishbone" that are appropriate for removal of barium from groundwater. Zero valent iron (ZVI) columns appear to generate H_2, which is a problem for the column studies due to permeability reduction.

The CMI Plan was submitted to NMED on May 10, 2007. An NOD on that document was received on June 29, 2007; the response to that NOD was submitted on July 30, 2007. NMED approved the CMI Plan in a letter dated August 17, 2007.

Public and Stakeholder Involvement – None.

Percentage of CMS Completed

LANL estimates 100% of the surface CMS has been completed (please note this percentage does not reflect the deep groundwater CMS, which is still in progress)

Problems Encountered/Actions to Rectify Problems

Column studies to support the CMI Plan PRB designs have encountered unexpected technical problems. Additional studies to resolve these issues are being designed.

Key Personnel Issues

None

Projected Work for September 2007

Investigation Reports and CMS/CME Reports

- Distribution of the Groundwater CME Report
- Response to NOD on Well Evaluation Report

BMPs

- Continued inspection of existing BMPs following significant precipitation events

CMS Hydrogeologic Investigations

- Site maintenance at the TA-16 trailers
- Checking for presence and levels of water in Cañon de Valle alluvial system
- Precipitation monitoring

Ecological Risk Pilot

- None

CMS Bench and Pilot Studies

- None

CMI

- Continuation of batch and column studies for designs of barrier materials for use in the PRB
- Contracting for CMI Implementation

Public and Stakeholder Involvement

None