

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

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

Description of Activities and Contacts

High Performing Team (HPT) – The TA-16-260 HPT had a field visit and brief meeting on March 16.

During the field visit, the proposed locations of the permeable reactive barrier and Stormfilter at Burning Ground spring were evaluated. A PRB location near alluvial well 2658 was proposed. A Stormfilter design with the Stormfilter located as close to the spring as possible and the discharge upgradient from the stream channel was also proposed to minimize disturbance to the wetlands. NMED was asked to notify LANL if they had concerns about them. The locations of the three surge bed boreholes were visited and the core from these boreholes was examined. No surge beds were visible. A surge bed was visited in outcrop. The grouting implementation plan was briefly discussed.

In the brief meeting, which also included representatives from the Water Stewardship Program, the contents of the well evaluation report was discussed. LANL noted that the interim report would focus most strongly on TA-16 constituents. NMED re-emphasized their desire for a recommendation that wells be drilled/redrilled or rehabilitated.

The next HPT meeting will be in April and will focus on groundwater modeling and the well evaluation report.

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 March (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.

The hydrologic system in Cañon de Valle remains wet following the higher-than-average intensity monsoonal rains and significant November through January snows. Martin Spring is flowing at ~ 500 mL/min., Burning Ground Spring is flowing at a rate of ~200 mL/ sec., and SWSC Spring remains dry.

The 90s Line Pond and downgradient surface locations in Martin Spring Canyon and Cañon de Valle are wet and melting. The alluvial wells in lower Cañon de Valle, Fishladder Canyon, and lower Martin Spring Canyon are wet. Surface water in Cañon de Valle remains present from Burning Ground spring to MDA-P. In the non-perennial reaches of Cañon de Valle, Martin Spring canyon, and Fishladder canyon there are intermittent pockets of ponded water present at the surface.

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 was obtained.

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 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 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.

Work on the TA-16 Well Evaluation Report continues. An outline for this report was submitted to NMED and e-mail comments on this outline were received.

A draft outline for the Groundwater CME Report was completed. Modeling to support that report is ongoing. The draft outline was submitted to NMED and e-mail comments on this outline were received.

Corrective Measures Implementation (CMI) Plan –

An annotated outline was completed and engineering drawings are in process. A draft of this outline was submitted to NMED and e-mail comments on the outline were received. A 90% design/peer review draft was completed in March. Peer review comments were received. 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 be generating H₂, which is a problem for the column studies due to permeability reduction. Three boreholes were completed in March to aid the grouting design. There was no evidence for surge beds in these boreholes.

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 are going slowly and having unexpected technical problems. Additional studies to resolve these issues are being designed. These studies will continue beyond the submittal date of the CMI Plan.

Key Personnel Issues

None

Projected Work for April 2007

Investigation Reports and CMS/CME Reports

- Discussions regarding the Groundwater Investigation and CME Reports with NMED personnel
- Writing of the Well Evaluation report
- Peer review of the Well Evaluation report
- Continuation of groundwater modeling

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
- Characterization of boreholes in 260 outfall area using geophysics
- Peer review of draft CMI Plan, finalization of plan

Public and Stakeholder Involvement

None