

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during August of fiscal year (FY) 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 [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) site, which was severely damaged in a flood event on August 21, 2011, was provided to NMED personnel on August 25, 2011. Potential paths forward were discussed; continued discussion in the coming weeks will resolve how the PRB pilot project will proceed.

### **Surface CME/CMI**

**Best Management Practices (BMPs)** – BMPs are inspected quarterly and following significant precipitation events. Several rain events occurred in August: two exceeded 0.5 in., including the almost 2-in. event of August 21, 2011 (measured at the TA-06 weather station).

**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 water 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.

Flow in the TA-16 canyons increased significantly in August resulting from intense monsoonal rains. Two events, on August 3, 2011, and particularly on August 21, 2011, led to flooding in Cañon de Valle. Two of the long-term alluvial wells, CdV-16-2657 and CdV-16-2658, were destroyed and their exact former locations are not available for replacement wells. Options for replacement of these wells are being considered. New baseline contamination levels following this severe flooding need to be evaluated.

Martin Spring is flowing at a rate of ~ 0.1 L/s, Burning Ground Spring is flowing at a rate of ~ 0.3 L/s, and SWSC Spring continues not to flow over the weir-box exit.

The 90s Line Pond has refilled and is near its maximum 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.

**CMI** – Progress was made on National Pollutant Discharge Elimination System (NPDES) permitting for the storm filter systems in springs. The U.S. Environmental Protection Agency (EPA) issued a draft permit for public comment on August 27, 2011. This permit requires monitoring of aluminum concentrations but does not prescribe effluent limits for it. However, effluent limits for other constituents such as silver, thallium, and lead may be problematic. A meeting to discuss this issue with NMED personnel is anticipated.

Replacement of the zero-valent iron (ZVI) with granular activated carbon occurred in July. Severe damage to the PRB occurred in August as a result of fire-induced flooding. On August 3, 2011, flood damaged monitoring wells associated with the project. Then, on August 21, 2011, flooding severely damaged the capture wall and many of the monitoring wells. The central portion of the capture wall was breached down to bedrock. LANL and the U.S. Department of Energy will consult with NMED personnel in coming months to determine how to proceed. A draft of the FY2010–FY2011 CMI monitoring plan (due September 30, 2011) was completed.

### **Subsurface CME/CMI**

***RFI/Investigation Report and CME for Deep Groundwater*** – Well R-25c, completed in September 2008, has not produced water since it was completed.

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

**Public and Stakeholder Involvement** – A tour of the PRB site for NMED personnel was conducted on August 25, 2011.

### **Problems Encountered/Actions to Rectify Problems**

The draft NPDES permit for the storm filters may be problematic; further evaluation of naturally occurring constituents slated for monitoring and effluent limits is needed.

The hydrologic system in Cañon de Valle was strongly perturbed by the August flooding; baseline contaminant levels within the canyon system need to be reevaluated. Two long-term alluvial wells were also destroyed in this flooding.

The PRB capture wall was severely damaged in August by floods. A path forward for this pilot project must be determined in consultation with NMED personnel.

**Key Personnel Issues** – None

## **Projected Work for September 2011**

### **Surface CME/CMI**

#### ***BMPs***

- Continue inspection of existing BMPs following significant precipitation events

#### ***CME Hydrogeologic Investigations***

- Maintain the TA-16 trailers
- Check for the presence and levels of water in Cañon de Valle alluvial system
- Begin planning for replacement of destroyed alluvial wells
- Begin planning for reevaluation of contaminants within the canyon
- Continue precipitation monitoring

#### ***CMI***

- Evaluate draft NPDES permit for storm filter systems and provide comments to EPA
- Meet with NMED personnel to determine a path forward for the PRB
- Complete the annual update to CMI monitoring report/plan
- Continue waste management activities for remaining water at CMI remedy sites

### **Subsurface CME/CMI**

- Analyze deep groundwater data in the context of Water Canyon/Cañon de Valle investigation report

### **Public and Stakeholder Involvement**

- Continue discussions with NMED personnel regarding PRB flood damage