

**Monthly Progress Report**  
**Corrective Measures Study (CMS) for Potential Release Site (PRS) 16-021(c)**  
**May 2002**

This report summarizes Los Alamos National Laboratory (LANL) activities completed during May of fiscal year (FY) 2002 on the CMS for PRS 16-021(c), the 260 outfall. Both the activities described in the CMS plan ([LA-UR-98-3918]), which was submitted to the New Mexico Environment Department-Hazardous Waste Bureau [NMED-HWB] on 9/30/98, and approved by NMED-HWB on 9/8/99), and other related activities are described herein.

**Description of Activities and Contacts**

***High Performing Team (HPT) Activities*** – The 260 HPT did not meet in May 2002. LANL provided a draft letter on a treatability study focusing on barium stabilization. NMED representatives did not express any concerns with the letter.

The next HPT meeting is scheduled for June 17, 2002. Agenda items may include ecorisk results, a data update, the IM Report, and points of compliance.

***RCRA Facility Investigation (RFI) Report and CMS Plan***– No new activities occurred during this reporting period.

***Best Management Practices (BMPs)***– BMPs are inspected quarterly and following significant precipitation events. Due to low levels of precipitation in May, no BMP repairs were required.

***CMS Hydrogeologic Investigations***–CMS hydrogeologic investigations include ongoing Phase II RFI sampling as well as continuing investigations outlined in the CMS plan.

The ongoing Phase II RFI sampling program includes collecting samples at Martin and Burning Ground spring every other day for stable isotopes. SWSC spring remains dry.

The wells, both alluvial and deep, were checked for both presence and level of water. Four out of five alluvial wells in Canon de Valle contained water, the uppermost well was dry. No water was present in all three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

No samples from precipitation events were collected and archived for analysis during this reporting period.

For well CdV-R-37-2, work was continued on the Well Completion Report. An internal rough draft was completed.

### ***Ecological Risk Pilot***–

Work was continued on consolidating the aquatic and terrestrial system study and implementation plans. Rodent sampling in Canon de Valle and Pajarito Canyons (the reference site) was completed. Eight deer mice and three brush mice were captured in Canon de Valle and twelve deer mice and three brush mice were captured in Pajarito Canyon. The majority of the captures were on the first night of a four night trapping campaign. The rodents are currently being screened for hantavirus. The relatively low level of rodents trapped is probably due to the effects of the drought.

***CMS Bench and Pilot Studies***–Bench and pilot studies continued in collaboration with the Innovative Treatment Remediation Demonstration (ITRD) Program. The ITRD HE program is focused on two DOE sites: LANL and Pantex. Studies include:

1. A study of the passive barrier technology of Stormwater Management, Inc., which is potentially useful for removing HE and barium from waters.
2. A study of chemical treatment of HE-contaminated soil using zero-valent iron (ZVI). The LANL portion of this study has been completed.
3. At Pantex, a study of in situ anaerobic bioremediation of HE using gas-phase carbon additions.
4. A study of ex situ anaerobic bioremediation of HE-contaminated soils using the W. R. Grace process, which combines anaerobic bioremediation with a ZVI treatment. The LANL portion of this study has been completed.
5. A study of HE composting. Amendments appropriate to northern New Mexico were tested on both clean and contaminated soils. The LANL portion of this study has been completed. The internal report was completed on these studies
6. A study of immobilization of barium-contaminated sediments from Cañon de Valle. A preliminary study has been completed and further investigations are planned for FY 02.
7. Phytoremediation studies in Cañon de Valle. Native plants are being evaluated for their ability to remove HE from surface waters. Preliminary results suggest that low levels of phytoremediation are occurring in the Burning Ground spring area.
8. Oxidation, reduction, and in-situ bioremediation studies of groundwater contamination at Pantex.

The HEPS field team continued troubleshooting on the Stormwater Management system to determine why it does not appear to be working effectively for barium. A draft of a treatability study letter for barium stabilization was submitted to DOE-OLASO for transmittal to NMED.

### ***Interim Measure (IM)*** –

Comments from the internal reviewers on the Interim Measures Report were addressed.

***Public and Stakeholder Involvement***– A presentation on the 260 outfall CMS was made at the ER public meeting on May 8, 2002. A presentation on Goldsim risk modeling was made at the Spring meeting of the American Geophysical Union (AGU).

### **Percentage of CMS Completed**

LANL estimates 88 % of the CMS has been completed to date. Note that this percentage does not reflect the deep and potential intermediate wells that will be drilled per the CMS plan addendum.

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

*General Problem (1)* The Cerro Grande fire has severely impacted the 260 RFI/CMS activities. These problems have been discussed in detail in previous monthly reports.

*Action to Rectify General Problem (1):* LANL will work closely with NMED through the HPT to mitigate the effects of the Cerro Grande fire. Effects of the fire on the monitoring data in Canon de Valle continue to be addressed.

### ***CMS Hydrogeologic Investigations***

*Problem (1):* Questions relating to the quality of data from well R-25 remains a concern to the TA-16-260 team.

*Action to Rectify Problem (1):* LANL will evaluate the data from the quarterly sampling of the R-25 well to evaluate its reliability.

### ***CMS Bench and Pilot Studies***

*Problem (1):* The fact that the Stormwater Management unit does not appear to be removing barium is of concern,

*Action to Rectify Problem (1):* LANL will work with ITRD to determine if there are problems with the barium-specific resin and will potentially evaluate other barrier materials.

### ***IM***

None.

### **Key Personnel Issues**

None

### **Projected Work for June 2002**

### ***RFI Report and CMS Plan***

- None

### ***BMPs***

- Inspection of existing BMPs following significant precipitation events will continue.

### ***CMS Hydrogeologic Investigations***

- Maintenance of autosamplers
- Quarterly sampling including stream profiling.
- Checking for levels and presence of water in alluvial and deep wells.
- Sampling of flow-integrated autosamplers
- Continued precipitation monitoring and sampling for stable isotopes.
- Data analysis
- Review of rough draft of CdV-R-37-2 Well Completion Report
- Review of data quality objectives for groundwater modeling
- Review of data quality objectives for drilling

### ***Ecological Risk Pilot***

- Completion of rodent sampling.

### ***CMS Bench and Pilot Studies***

- Evaluation of data from Stormwater units

### ***IM***

- Data analysis and continued writing of IM Report

### ***Public and Stakeholder Involvement***

None anticipated.

