

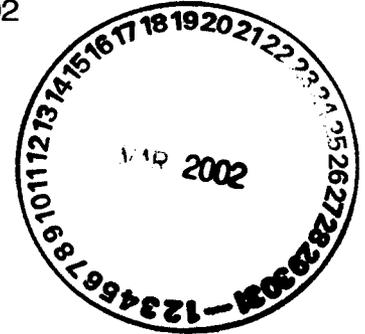
**ENVIRONMENTAL
RESTORATION
PROJECT**

Los Alamos National Laboratory/University of California
Environmental Science and Waste Technology (E)
Environmental Restoration (ER) Project, MS M992
Los Alamos, New Mexico 87545
(505) 667-0808/FAX (505) 665-4747



U.S. Department of Energy
Office of Los Alamos Site Operations, MS A316
Environmental Restoration Program
Los Alamos, New Mexico 87544
(505) 667-7203/FAX (505) 665-4504

Date: March 19, 2002
Refer to: ER2002-0171



Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

**SUBJECT: FEBRUARY 2002 CORRECTIVE MEASURES STUDY (CMS)
PROGRESS REPORT FOR POTENTIAL RELEASE SITE (PRS)
16-021(c)**

Dear Mr. Young:

Enclosed are two copies of the February 2002 CMS Progress Report for PRS 16-021(c), the 260 Outfall. This report is being submitted as part of the reporting conditions outlined in Section R, *Scope of work for Resource Conservation and Recovery Act CMS at the Laboratory, Task IV, Reports, Part A, Progress* Module VIII of the Laboratory's Hazardous Waste Facility Permit.

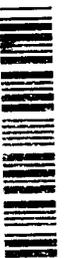
If you have any questions, please call Dave McInroy at (505) 667-0819 or Lance Woodworth at (505) 665-5820.

Sincerely,

Julie A. Canepa, Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

Mat Johansen, Project Manager
Department of Energy
Office of Los Alamos Site Operations



6346

TA-16
16-021(c)

JC/MJ/NR/am

Enclosure: February 2002 CMS Progress Report (ER2002-0170)

Cy (w/enc.):

A. Dorries, EES-9, MS M992
T. Grieggs, ESH-19, MS K490
D. Hickmott, EES-6, MS M992
M. Kirsch, E/ER, MS M992
D. McInroy, E/ER, MS M992
N. Riebe, E/ER, MS M992
C. Rodriguez, E/ER, MS M992
L. Soholt, ESH-20, MS M887
M. Johansen, OLASO, MS A316
G. Turner, OLASO, MS A316
L. Woodworth, OLASO, MS A316
J. Davis, NMED-SWQB
M. Leavitt, NMED-GWQB
S. Yanicak, NMED-DOE OB, MS J993
D. Neleigh, US EPA (2 copies)
E/ER File, MS M992
IM-5, MS A150
RPF, MS M707

Cy (w/o enc.):

J. Canepa, E/ER, MS M992
J. Bearzi, NMED-HWB
J. Parker, NMED-DOE OB

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during February 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 formally meet during February 2002. Most of the team members participated in the HPT retreat that occurred on February 26, 2002 in Santa Fe. At this meeting, the status of all the HPTs was reviewed and goals for the coming months were outlined.

The next HPT meeting is scheduled for Monday, March 11, 2002. Agenda items may include a data update, a discussion of geophysics data quality objectives (DQOs), an update on the innovative treatment remediation demonstration (ITRD) project, and a discussion of the goals of the HPT.

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 February, 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

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. Water was also present in the uppermost of the three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

One sample from a precipitation event (snowmelt) was collected and archived for analysis during this reporting period.

A discussion of DQOs for modeling was held. The initial focus will be on refining the conceptual model for the deep perched zone.

A kickoff meeting for well CdV-R-37-2 Completion Report was held on January 31, 2002.

Ecological Risk Pilot–

Data analysis continued on results from the fall sampling campaign.

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.
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 field team attempted to diagnose whether there were any problems with the barium resin in the Stormwater Management unit. They made a minor change in the flow through the unit to ensure longer contact times with the resin.

Interim Measure (IM) –

The IM Report is being written by the subcontractor. An internal rough draft is being reviewed by the HEPS Team.

Public and Stakeholder Involvement– No activities

Percentage of CMS Completed

LANL estimates 86 % of the CMS has been completed. Note this percentage does not reflect the deep and potential intermediate wells to 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 March 2002

RFI Report and CMS Plan

- Discussion will be held on modifying the CMS Addendum to address intermediate depth boreholes.

BMPs

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

CMS Hydrogeologic Investigations

- Maintenance of autosamplers
- 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.
- Quarterly sampling & stream profiling
- Data analysis
- Mineralogic, petrologic and chemical characterization of samples from CdV-R-37-2
- Review of data quality objectives for groundwater modeling
- Review of data quality objectives for drilling

Ecological Risk Pilot

- Evaluation of data from ecotoxicity samples

CMS Bench and Pilot Studies

- Evaluation of data from Stormwater units

IM

- Data analysis and writing of IM Report

Public and Stakeholder Involvement

None

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

This report summarizes Los Alamos National Laboratory (LANL) activities completed during February 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 formally meet during February 2002. Most of the team members participated in the HPT retreat that occurred on February 26, 2002 in Santa Fe. At this meeting, the status of all the HPTs was reviewed and goals for the coming months were outlined.

The next HPT meeting is scheduled for Monday, March 11, 2002. Agenda items may include a data update, a discussion of geophysics data quality objectives (DQOs), an update on the innovative treatment remediation demonstration (ITRD) project, and a discussion of the goals of the HPT.

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 February, 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

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. Water was also present in the uppermost of the three alluvial wells in Martin Spring Canyon. All of the intermediate depth boreholes were dry.

One sample from a precipitation event (snowmelt) was collected and archived for analysis during this reporting period.

A discussion of DQOs for modeling was held. The initial focus will be on refining the conceptual model for the deep perched zone.

A kickoff meeting for well CdV-R-37-2 Completion Report was held on January 31, 2002.

Ecological Risk Pilot—

Data analysis continued on results from the fall sampling campaign.

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.
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 field team attempted to diagnose whether there were any problems with the barium resin in the Stormwater Management unit. They made a minor change in the flow through the unit to ensure longer contact times with the resin.

Interim Measure (IM) —

The IM Report is being written by the subcontractor. An internal rough draft is being reviewed by the HEPS Team.

Public and Stakeholder Involvement—No activities

Percentage of CMS Completed

LANL estimates 86 % of the CMS has been completed. Note this percentage does not reflect the deep and potential intermediate wells to 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 March 2002

RFI Report and CMS Plan

- Discussion will be held on modifying the CMS Addendum to address intermediate depth boreholes.

BMPs

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

CMS Hydrogeologic Investigations

- Maintenance of autosamplers
- 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.
- Quarterly sampling & stream profiling
- Data analysis
- Mineralogic, petrologic and chemical characterization of samples from CdV-R-37-2
- Review of data quality objectives for groundwater modeling
- Review of data quality objectives for drilling

Ecological Risk Pilot

- Evaluation of data from ecotoxicity samples

CMS Bench and Pilot Studies

- Evaluation of data from Stormwater units

IM

- Data analysis and writing of IM Report

Public and Stakeholder Involvement

None