Environmental
Restoration
University of California
Environmental Restoration Project, MS M992
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99 FEB 22 PM 4: 06
RCRA PERMITS PROGRAM

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

Date: February 12, 1999
Refer to: EM/ER:99-032

99 FEB 22 PM 4: 06
RCRA PERMITS PROGRAM

Mr. Benito Garcia
NMED–HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: QUARTERLY TECHNICAL REPORT FOR OCTOBER–DECEMBER 1998

Dear Mr. Garcia:

Enclosed are two copies of the Environmental Restoration Project's Quarterly Technical Report, October–December 1998. The Quarterly Technical Report presents information from each focus area on the quarter's activities, including sampling, cleanups, and report writing. Also enclosed is a certification statement signed by the designee owner and operator for the Los Alamos National Laboratory.

If you have questions regarding this report, please contact Dave McInroy at (505) 667–0819 or Joe Mose at (505) 667–5808.

Sincerely,

Julie A. Canepa, Program Manager
LANL/ER Project

Sincerely,

for Joseph A. Mose

Theodore J. Taylor, Program Manager
DOE/LAAO

JC/TT/MB/bj

Enclosures: (1) Quarterly Technical Report, October–December 1998
(2) Certification

8171

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CERTIFICATION

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Document Title: Quarterly Technical Report, October–December 1998

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Los Alamos National Laboratory

Environmental Restoration

A Department of Energy Environmental Cleanup Program

QUARTERLY TECHNICAL REPORT

October–December 1998

February 12, 1999

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ACRONYMS AND ABBREVIATIONS

AOC	area of concern
BMP	best management practice
DOE	US Department of Energy
DOE/AL	US Department of Energy/Albuquerque Operations Office
DOE/LAAO	US Department of Energy/Los Alamos Area Office
DX	Dynamic Experimentation (Division)
EM	Environmental Management (Division)
ER	environmental restoration
EES	Earth and Environmental Science (Division)
ESH	Environment, Safety, and Health (Division)
ESH-1	Health Physics Operations Group
ESH-18	Water Quality and Hydrology Group
FIMAD	Facility for Information Management, Analysis, and Display
FY	fiscal year
HE	high explosives
HRMB	Hazardous and Radioactive Materials Bureau
HSWA	Hazardous and Solid Waste Amendments
LANL	Los Alamos National Laboratory
MDA	material disposal area
NFA	no further action
NMED	New Mexico Environment Department
NRDA	National Resource Damage Assessment
NOD	Notice of Deficiency
NTISV	nontraditional *in situ* vitrification
PCB	polychlorinated biphenyl
PRS	potential release site
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RSI	Request for Supplemental Information
SAL	screening action level
SAP	sampling and analysis plan
SOP	standard operation procedure
SWMU	solid waste management unit
SWO	Solid Waste Operations
TA	technical area
TSCA	Toxic Substances Control Act
VCA	voluntary corrective action
VCM	voluntary corrective measure

QUARTERLY TECHNICAL REPORT
OCTOBER–DECEMBER 1998
LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL RESTORATION PROJECT

ALBUQUERQUE OPERATIONS OFFICE

CONTRACTOR: University of California

PROJECT MANAGER: Julie Canepa

NUMBER OF POTENTIAL RELEASE SITES: Approximately 2000

POTENTIAL WASTE: Radionuclides, High Explosives, Metals, Organics

1.0 INTRODUCTION

This quarterly report describes the technical status of activities in the Los Alamos National Laboratory (the Laboratory) Environmental Restoration (ER) Project. The activities are divided according to the current focus area structure and then, when applicable, by the technical area (TA) where the specific activity is located. The Hazardous and Solid Waste Amendments (HSWA) portion of the Laboratory's Hazardous Waste Facility Permit (Module VIII, Section P, Task V, C) requires the submission of a technical progress report on a quarterly basis. This report, submitted to fulfill the permit's requirement, summarizes much of the fieldwork performed this quarter in the ER Project.

2.0 FOCUS AREAS

2.1 Canyons — Focus Area Leader: Allyn Pratt

2.1.1 Reach Reports

During the first quarter of FY99, the Canyons Focus Area submitted the two reach reports listed below to the US Department of Energy (DOE) and the New Mexico Environment Department (NMED). The reach reports present the results of sediment investigations conducted in 1997 and 1998 and contain an assessment of the risk associated with current land use.

- Evaluation of Sediment Contamination in Pueblo Canyon: Reaches P-1, P-2, P-3, and P-4
- Evaluation of Sediment Contamination in Upper Los Alamos Canyon: Reaches LA-1, LA-2, and LA-3

A third reach report, Evaluation of Sediment Contamination in Lower Los Alamos Canyon: Reaches LA-4 and LA-5, will be delivered to DOE and NMED early in the second quarter of FY99.

2.1.2 Ongoing Reach Investigations

2.1.2.1 DP Canyon (part of Los Alamos Canyon system)

The first phase of investigation of sediments in DP Canyon reaches DP-1 and DP-3 was completed in November 1998, with the collection of the first round of sediment samples. A second round of sediment sampling was completed in reaches DP-2 and DP-4. Sites from which samples were collected for limited-suite and key contaminant analyses were selected based on geomorphic mapping, stratigraphy, and radiological field measurements. Analytical suites were selected based on results of the first round of sediment samples in reaches DP-2 and DP-4.

2.1.2.2 Mortandad Canyon

The first phase of sediment investigation in Ten Site Canyon (Reach TS-1) began with initial geomorphic mapping in November 1998.

2.1.2.3 Acid Canyon (part of Pueblo Canyon system)

Canyons Focus Area personnel contributed to geomorphic mapping and preparation for sediment sampling in the Potential Release Site (PRS) 0-030(g) tributary to Acid Canyon as part of the investigations by the Remedial Actions Focus Area.

2.1.2.4 Sandia Canyon

Focus area personnel conducted first-quarter surface water base-flow sampling at six stations in accordance with the Upper Sandia Canyon Sampling and Analysis Plan (SAP) in support of the Remedial Actions Focus Area.

2.1.3 Groundwater Activities

Final sampling of water from alluvium wells in DP Canyon was completed in November 1998.

Installation of MCO-7.2 in Mortandad Canyon was completed this quarter. MCO-7.2 was drilled to a depth of 132.5 ft in the Otowi Member. A saturated zone in overlying alluvium from 42.5- to 60.6-foot depth was sealed off from the dry Cerro Toledo interval. The borehole screen was placed between 70- and 92.5-foot depth to look for the occurrence of groundwater in the Cerro Toledo interval. A water sample was collected from the alluvial system, and core samples were taken from alluvium and the Cerro Toledo interval for contaminant characterization.

Drilling of deep well R-15 in Mortandad Canyon will resume when operations at R-25 are such that the Barber drill rig becomes available.

2.1.4 TA-18 Activities

Work continued on the voluntary corrective action (VCA) plan for PRS 18-003(b,c,d, and g) septic systems.

2.2 Material Disposal Areas — Focus Area Leader: Deba Daymon

2.2.1 General Information for Material Disposal Areas Focus Area

General activities for the material disposal areas (MDAs) this quarter included the following:

- supported the roadmapping effort for the MDA areas;
- coordinated ER FY99 technology needs and made a presentation to EM-40 and EM-50 groups in Albuquerque on November 17, 1998;
- participated in the Independent Cost Estimate with the DOE auditors; and
- made presentations on TA-21 and TA-49 to NMED at their monthly Hazardous and Radioactive Materials Bureau (HRMB) meeting on December 14, 1998.

2.2.2 Technical Area Activities

2.2.2.1 TA-21

During November, inspections were conducted with the Laboratory's Water Quality and Hydrology Group (ESH-18) for all best management practice (BMP) surface water controls at TA-21 (per draft Standard Operating Procedure [SOP] 2.01, "Surface Water Site Assessment").

PRS 21-015, MDA B. Focus area personnel completed drilling around the perimeter of the disposal trenches in October 1998. Data from sampling activities are pending. Three drums of hazardous waste were transported under manifest from MDA B to TA-54, Area G, for temporary storage until final disposition is arranged.

PRSs 21-017(a,b,c), MDA U. rilling within the absorption beds and around the perimeter of the beds was completed in November 1998. Data from sampling activities are pending.

PRS 21-024(i). Samples were collected in October 1998 after removal of contaminated soil from the outfall to determine the levels of contamination remaining. Data from sampling activities are pending.

John K
Have we sent comments?
Bonnie

PRS 21-018(a), MDA V. Team members continued preparations for testing the nontraditional *in situ* vitrification (NTISV) process. Preparations included discussions with the Field Management Unit Coordinator for installation of electricity; preparation of the area north of MDA V for the cold demonstration; reviewing environment, safety, and health identification (ESH ID) requirements (e.g., National Environmental Policy Act, threatened and endangered species, etc.); and addressing other institutional concerns, including permitting, health and safety, and waste management. Preliminary documents, such as the site-specific demonstration plan, for the NTISV were submitted to the NMED in December 1998. The hot deployment of the NTISV will be considered as an interim measure as indicated by the NMED.

PRS 21-029, DP Tank Farm. The RFI Work Plan for DP Tank Farm was completed and submitted to NMED for review and comment on October 7, 1998.

John K
Where are we on this?
Bonnie

2.2.2.2 TA-49

PRS 49-001(b,c,d,g) – MDA AB, Areas 2, 2A, and 2B. The old asphalt pad at MDA AB was removed. The low-level radioactively contaminated asphalt was hauled by truck to TA-54, MDA G for disposal. The site was regraded with crushed tuff. Topsoil was then placed over the regraded portion of Area 2, and the entire area was reseeded with shallowly rooted grasses. Gravel erosion protection was placed over the regraded area. A gopher barrier was installed over the location of the former asphalt pad and the area just north of the former asphalt pad. The final silt fence was installed around the construction site.

Lee Winn

A Notice of Deficiency (NOD) was received from NMED on the Stabilization Plan for the area. The response to that NOD was prepared and submitted to NMED this quarter.

John T

PRS 49-008(d). A peer review for soil removal at the Bottle House was conducted, and health and safety plans were prepared and approved. The vegetation was cleared from the Bottle House area, a field radiation survey grid was laid out, and a radiation survey was conducted.

Soil from the low-level radioactively contaminated areas around the Bottle House was removed using a front-end loader and hauled by truck toTA-54, Area G. Additional confirmatory sampling indicated two small areas of residual low-level radioactive contamination. Additional soil from these two areas was shoveled into drums that were then staged at the site's low-level waste storage facility. Confirmatory samples were collected for fixed-laboratory analysis, and clean fill was used to cover the remediated areas.

all RCRA? on RCRA?

2.2.2.3 TA-54

Personnel completed first quarter pore-gas sampling and completed the field report. Results indicated no unexpected concentrations or new contaminants.

2.3 Remedial Actions — Focus Area Leader: Warren Neff

2.3.1 High Explosives Production Sites Team

The High Explosives Production Sites Team spent most of the last quarter in field work activities. The Surface Water Assessment Team, which includes representatives of the NMED Surface Water Bureau, had mandated sampling at all PRSs with an erosion matrix score greater than 60. The sampling and the installation of associated BMPs were completed during this quarter. Major upgrades to BMPs were deployed at PRS 16-021(c), the 260 Outfall. All field work described in the V-Site voluntary corrective measure (VCM) plan was completed, and additional field work was identified at V-Site to determine nature and extent of contamination.

2.3.1.1 TA-16

Hydrogeology. The field team continued to monitor water levels in the Cañon de Valle alluvium wells. Flow measurements were collected in the wells. A round of flow profile measurements and associated sampling was completed. The High Explosives Production Sites Team continued to provide field analytical results for the R-25 drilling effort. Low levels of high explosives (HE) were found in waters from R-25 at depths ranging from 747 ft –1407 ft. Upon this discovery, notification was made to the Surface Water Quality Bureau, Ground Water Quality Bureau, HRMB, and DOE Oversight Bureau by members of the ER Project and representatives of the Environment, Safety,

and Health (ESH) Division. In December, quarterly samples were collected from Cañon de Valle springs and surface water. In addition, daily water samples (bromide tracer) were collected from the TA-16 springs. All water data collected from the hydrogeology fieldwork prior to June 1998 were provided to NMED during December 1998. All first-quarter sampling results are pending.

TA-16-260. NMED reviews of the Phase II Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) report and the corrective measures study plan for PRS 16-021(c), both of which were submitted in September 1998, are pending. In December 1998, a meeting was held with NMED to discuss these documents. In support of NMED's reviews, a field trip was also held during December. Initial results of the water treatment pilot by Stormwater Management were received: A range of up to 65% of the HE in the demonstration water was removed, whereas barium removal was minimal. Stormwater Management will complete additional tests during the second quarter. Studies of the zero valent iron treatment of HE-contaminated soils suggest that this chemical treatment method can reduce HE levels to several hundred ppm. These tests are also ongoing.

V-Site. Data from all PRSs received quality assurance analysis. Data from 9 out of 11 PRSs were retrieved from the Facility for Information Management, Analysis, and Display (FIMAD), and decisions were made regarding these PRSs. All PRSs require nature and extent sampling to support a possible recommendation of no further action (NFA). This sampling will occur during the second quarter.

TA-16 Burning Ground VCA/VCM. Existing data from two PRSs at the TA-16 Burning Ground [PRS 16-016(c), a barium nitrate pile, and PRS 16-010(b), a burn site] were evaluated. It was decided to proceed with a VCA/VCM for PRS 16-016(c) and a RCRA closure for the other site. As a cost-saving measure, this cleanup will be coordinated with that at MDA P.

Surface Water. Sampling was completed at all PRSs with erosion matrix scores greater than 60. Additional BMPs were installed at several PRSs. Extensive upgrades to BMPs at PRS 16-021(c), the 260 Outfall, were completed.

2.3.1.2 TA-22

A rough draft of the SAP for PRSs 22-012 and 22-015(a, b, d, and e) was completed.

2.3.2 Firing Sites Team

2.3.2.1 TA-12

PRSs 12-001(a,b) and 12-002. Personnel defined a strategy and path forward for resolution of the NOD on the VCA Report for PRS 12-001(a), a firing site. Work began on a combined SAP/VCA for firing site PRSs 12-001(a,b) and the open burning ground PRS 12-002.

2.3.2.2 TA-15

PRS 15-009(c). Silt fencing was installed at the PRS 15-009(c) septic tank, and samples were collected from the drainage. Results from the sampling indicated no chemicals of potential concern (COPCs).

Personnel defined the strategy and path forward for resolution of the 1995 RFI Report for TA-15, which was denied by the Administrative Authority. Work has begun on a response to the NOD for that RFI Report and a SAP is planned. Personnel requested from the Laboratory's Dynamic Experimentation (DX) Division background information regarding operations in selected buildings at TA-15.

The status of the Storm Water Pollution Prevention Plan for active sites was determined. Surface water action items were reviewed for correctness, excavation requests were reviewed, and a field visit was completed to delineate areas acceptable for excavation projects that would not impact active PRSs.

2.3.2.3 TA-33

PRS 33-004(a). Work continued on authorized limits for waste from PRS 33-004(a):

- A determination was made that the 10 drums of sludge would not be sent to Sauget, Illinois, but will be handled through Environmental Management Division/Solid Waste Operations (EM/SWO).
- The New York State Department of Environmental Conservation approved the waste profile for disposal of two drums of investigation-derived waste at the Model City facility in New York.
- A determination was made that the 34 drums of aqueous waste cannot be disposed in the landfill at Model City because the facility cannot solidify liquid wastes having less than 20% solids. Model City may be able to treat the aqueous waste at their wastewater treatment plant.
- Minor comments were received from DOE/Albuquerque Operations Office (AL), the Laboratory's Health Physics Operations Group (ESH-1), and the EM/SWO on the draft authorized limit submittal.

PRSs 33-006(a) and 33-010(c). The field team repaired previously installed BMPs at the main drainage at PRS 33-006(a), South Site, by reinforcing them with additional straw bales, rocks, and logs. The 33-010(c) shrapnel slope was reinforced with additional cobbles and boulders for further protection from direct impact of water flow.

PRS 33-008(c). The drainage behind the main site at PRS 33-008(c) was reinforced with straw bales. In addition, a silt fence was placed up-drainage of the straw bales. Debris that was within the drainage channel was moved to level ground adjacent to the drainage channel for future pickup.

A TA-33 site visit was conducted on November 12, 1998, for representatives of the HRMB Surface Water Quality Bureau and Laboratory personnel. The team visited PRSs 33-006(a), -008(c), -010(b), -010(c), and Area of Concern (AOC) 33-001. Based on the site tour, NMED recommended the following actions:

- Conduct an interim action (IA) at PRS 33-008(c) to address refuse in a watercourse by picking up the refuse, constructing rip-rap and matting, and fixing the presently constructed silt fence. Prepare an IA plan to ensure compliance with applicable regulations.

- Conduct an IA at AOC 33-001 to address the polychlorinated biphenyl (PCB)-contaminated soil. Prepare an IA plan.
- No actions were recommended at PRS 33-010(b).
- Place three series of straw bales in the drainage of PRS 33-010(c).
- Finalize the PRS 3-006(a) IA report.

A cost estimate to conduct IAs at PRSs 33-008(c) and C-33-001 was prepared and submitted to the team leader for review.

A fact sheet for TA-33 Soil-Sorting VCA was written and submitted for HRMB review.

An IA Plan for PRSs 33-008(c) and C-33-001 was written and submitted for HRMB review.

2.3.2.4 TA-36

PRSs 36-001, -004(d), and -006. Work has begun on a response to the NMED's formal denial of the RFI Report for PRSs 36-001, -004(d), and -006. Data for the document were reformatted in a more readable and appropriate format. Documents are being reviewed to identify issues related to the specific NMED comments relevant to the preparation of a SAP for the sites. Documents that track the chronology of events surrounding the formally denied RFI report are being compiled.

Preparations are under way for the TA-36 Phase II SAP for PRSs 36-001, 36-004(d), and 36-006. Evaluation of the existing radiological data under the current RESRAD (computer code) model identified an area of concern at PRS 36-001, an MDA. Personnel provided a status report regarding the site to the MDAs Focus Area Leader and informed the Surface Water Assessment Team of the location of PRS 36-001 (canyon bottom). The Surface Water Assessment Team requested a tour of the site to determine if surface water concerns are an issue for this PRS. RESRAD results from the remaining sites continue to indicate that few radiological concerns exist. A review of the data for human health risk under current preliminary remediation goal criteria was initiated.

Work was conducted on the water data report for the HRMB. Surface water and groundwater samples for TA-36 were identified and locations submitted for data retrieval. Personnel reviewed the data retrieved from the FIMAD and developed requested figures.

2.3.2.5 TA-39

PRSs 39-001(a,b). Activities continued for the landfill and MDA AA. A data printout was completed for the sites. Past information and deliverables, including information regarding deep contamination of uranium and thorium, were researched and collated in preparation for additional SAP deliverables. A reconnaissance visit to the technical area was conducted to place NOD comments in a conceptual and geographic framework. Background information regarding operations was requested of DX Division. The status of the Storm Water Pollution Prevention Plan for active sites was determined, and surface water action items were reviewed for correctness.

The strategy and path forward were defined for resolution of the Request for Supplemental Information for the RFI Report for TA-39.

A meeting regarding potential resolutions for the TA-39 landfills was held between Remedial Actions personnel and MDA personnel to understand the MDA Core Document and build a consensus for a path forward.

2.3.3 Industrial Sites Team

Surface Water. Industrial Sites Team personnel attended and participated in Surface Water Assessment Team meetings. The team also provided information requested by NMED, including maps, data, and historical documentation for various sites.

2.3.3.1 TA-3

Upper Sandia Canyon. In coordination with the Canyons focus area, personnel finished compiling data from the first round of the Upper Sandia Canyon sampling campaign. The focused validation, which will be completed next quarter, will ascertain whether any sample suites need to be recollected because of unacceptable data quality. Following focused validation, data assessment will help determine what contaminants at the site drive risk assessment and will help narrow down the analytical suites for further sampling. The information will be used to pinpoint the final round of sampling locations and the analytical suites. To date, PCBs were detected at levels greater than 1 ppm at only 2 of 72 locations within the Upper Sandia Canyon reaches. We completed first quarter water sampling and received water-sampling results; the data are being validated.

PRS 3-056(c). PRS 3-056(c) is a storage area that was used by the Laboratory's maintenance contractor for electrical power lines from 1967 to the present. The site is located on a steep slope that leads to a Sandia Canyon tributary. A Phase I RFI was performed in 1994. The detection of contaminants (PCBs) at levels greater than screening action levels (SALs) led to an expedited cleanup in 1995. Toxic Substances Control Act (TSCA) guidance was used to determine the 10-ppm PCB cleanup level for the industrial site. One thousand yds^3 of PCB-contaminated material were removed from the site. The 2-acre site was cleaned up to a level of less than 10 ppm total PCBs. The site is considered a watercourse by the Administrative Authority although only 10–15 ft of the western slope's toe is actually within the high water table. The NMED has determined that this site be cleaned up to a level of less than 1 ppm total PCBs. Preparation for a VCA at 03-056(c) was begun in this quarter.

2.3.3.2 TA-5

Plans, design, and cost estimates were completed for installing a BMP at PRS 5-001(c), and the BMP was installed. Photographic documentation for the BMP was also completed.

2.3.3.3 TA-35

Integrated Sampling Plan. Work began on the development of an integrated SAP for TA-35. This SAP will integrate the data needs for human health and ecological risk assessments as well as try to gather information needed for conducting watershed assessments and cumulative risk evaluations. The SAP will include over 52 PRSs in TA-35. All previously collected data will undergo formal data analysis and assessment in order to identify data gaps for the additional assessments. Validation of data is almost complete. Exploratory data analysis has been started for the first aggregate.

Surface Water. Plans, design, and cost estimates for installing BMPs at PRSs 35-003(d, l, and q), 35-008, 35-014(e1), 35-016(o), 35-016(i), and 35-016(e) have been completed. Subsequently, the BMPs at PRSs 35-003(d, l, and q) were installed.

2.3.3.4 TA-53

PRSs 53-006(a,b,c,d,e). Personnel from the ER Project and from Los Alamos Neutron Science Center facility management prepared a SAP for PRSs 53-006(a, b, c, d, and e) in an effort to coordinate ER Project sampling efforts with future excavation work for upgrading the radioactive liquid waste treatment system at TA-53. This SAP is an addendum to the TA-53 lagoon work plan. The TA-53 RFI SAP addendum for PRSs 53-006(a, b, c, d, and e), radioactive liquid waste tanks and lines, was completed and submitted to the Administrative Authority on November 1, 1998.

The ER Project received a Request for Supplemental Information (RSI) for the RFI Work Plan/SAP for TA-53 Surface Impoundments, PRSs 53-002(a, b), and the TA-53 SAP Addendum for PRSs 53-006(a, b, c, d, and e). Work has begun on the response to the RSI.

2.3.4 Town Sites Team

2.3.4.1 TA-0

PRS 0-017. Field efforts were completed by early November 1998. Work was conducted in three stages to address the different segments of abandoned acid waste lines located underneath the Los Alamos Medical Center, the parking lot area at the Health Research Laboratory, and along the sides of Los Alamos Canyon. The contractor is waiting on receipt and validation of laboratory analytical results prior to drafting the RFI report.

PRS 0-019. A kickoff meeting for field work at PRS 0-019 was held in late December. The work will involve a VCA to remediate two outfall areas, demolish a pump house structure, and excavate and remove subsurface piping associated with the abandoned Central Wastewater Treatment Plant. In addition, subsurface piping containing asbestos material located at the intersection of Oppenheimer Drive and Loma Vista Drive will be excavated for disposal.

PRS 0-030(g). Field work was completed on the mesa-top portion of the PRS, and laboratory analytical results were received. A status report was drafted and submitted to NMED/HRMB in order to share results of the mesa-top investigation. Personnel began drafting a SAP and performed geomorphic mapping to prepare for further sampling in the canyon area downgradient from the former septic tank location.

2.3.4.2 TA-73

PRSs 73-001(a–d) and 73-004(d). Airport Landfill Work began along the west side of the landfill to install a permanent BMP that will divert surface water runoff away from the landfill surface and toward the canyon. Surface water will be collected via a concrete-lined trench and metal culvert pipe, and it will be diverted over the canyon edge, where flow will be dissipated by rock gabions. By the end of the quarter, work was approximately 95% complete.

Aggregate 73-2. Enhanced storm water runoff controls were put in place to minimize potential migration of ash from the site.

2.3.5 MDA P Closure

Personnel completed construction of the separation pad and a small storage pad at the soil treatment site. Other mobilization activity continued this quarter; a conveyer system and supporting remote material-handling equipment have been installed.

Removal of exposed debris from below the MDA P West Lobe began. One hundred yd^3 of metal and 400 yds^3 of concrete have been decontaminated and are staged, awaiting analytical results prior to disposal. Some waste has been removed, sampled, and placed in less-than-ninety-day storage at TA-59.

2.4 Analysis and Assessment — Focus Area Leader: Alison Dorries

2.4.1 General Information for Analysis and Assessment Focus Area

In the first quarter of FY99, the Analysis and Assessment Focus Area was reorganized into three teams. This quarterly report reflects the new structure.

Personnel from the Analysis and Assessment Focus Area coordinated the submittal of the following five data sets to NMED on December 23, 1998: Cañon de Valle/TA-16 260 Outfall; Water Canyon/TA-36; Los Alamos Canyon, Pueblo Canyon, and DP Canyon; Pajarito Canyon and Two Mile Canyon; and the R-9 and R-12 regional aquifer boreholes. The Analysis and Assessment Focus Area also provided technical support in the form of data set preparation for the ER Project land transfer report.

The Analysis and Assessment Focus Area Team finalized performance measures for FY99 and provided technical support for completion of Chapter 3 of the Installation Work Plan (1998 revision). Several focus area members participated in the development of the ER Project roadmapping report, 1999 Environmental Restoration Project Roadmap.

Peer reviews of four data validation SOPs, two background comparison SOPs, and a statistical methods technical paper were completed in the first quarter.

The ecological risk assessment team continued to work on development of general ecological assessment endpoints with HRMB and natural resources trustees, with the emphasis on the 260 Outfall at TA-16. Meetings were also held with the TA-35 field team to determine the best approach to aggregating the fifty-two potential release sites for risk assessment at the watershed level.

2.4.2 Team Activities

2.4.2.1 Data Analysis and Assessment Team

<u>Data Quality and Adequacy Task</u>

Data Quality and Adequacy Team efforts during the first quarter of FY99 included

- providing technical support for data set preparation for the ER Project water data submittal to NMED;

- providing technical support for data set preparation for the ER Project land transfer report;
- incorporating internal review comments to the technical report, "ICPMS (inductively coupled plasma mass spectrometry) and KPA (kinetic phosphorimetry analysis) Performance Characteristics for LANL Environmental Data";
- directing work on the last phase of the minimum detection limit study that involves spiking LANL soil samples and determining matrix-specific method detection limits;
- providing analytical chemistry technical support for preparation of the Watershed Management SAP; and
- uploading to the ER database tables containing the new LANL background values for soil, tuff, and sediment.

Modeling Support Task

Team members continued to work with personnel from the Laboratory's Earth and Environmental Sciences (EES) and ESH divisions to develop requirements for the database that will support the Hydrogeologic Workplan data collection effort as well as ER Project modeling efforts. The team also worked towards developing a strategy for data stewardship of the ER database.

2.4.2.2 Risk Analysis and Review Team

Peer Review and Consistency Team

Peer Review and Consistency Team members held discussions with personnel throughout the ER Project to determine the optimal approach to peer review in FY99 and also began preparing for reviews and circulation of the many deliverables received at the close of FY98. Peer reviews were conducted on six external deliverables. The team also provided input on the land transfer draft report submitted to DOE in November.

Ecological Risk Team

The Ecological Risk Team continued development of the eco-toxicological database, ECORISK, and incorporated comments received on the user interface design. Work also continued on the development of an aquatic ecological screening level methodology and on ecological screening levels for a select list of 260 Outfall COPCs; the development of toxicity profiles for four key 260 Outfall COPCs; the development of a review sheet for reviews of primary toxicity literature; and the training of Laboratory graduate research assistants to use the review sheets.

Relative to the 260 Outfall, the team is also conducting an ongoing review of a number of sources for the identification of ecological screening reference values and is working to uncover test species, experimental conditions, and measurement endpoints for toxicological testing for specific analytes. Team members have set priorities for identification of ecological screening reference values for screening receptor organisms with respect to analytes of critical concern.

Team members continued to develop the General Assessment Endpoints document and the problem formulation for the Cañon de Valle ecological risk assessment. As part of this effort, the threshold reference values for contaminants of concern were also refined.

Human Health Risk Team

During the first quarter, the Human Health Risk Team

- developed and documented a standard set of human exposure scenarios to evaluate human health risk at Laboratory PRSs;
- assisted with the completion of revisions to the Installation Work Plan (the ER site-wide work plan), submitted to Administrative Authority in November 1998;
- incorporated final revisions into the SAL methodology paper included in the November 1998 revision of the Installation Work Plan; and
- met with technical peers to discuss and consolidate comments from all DOE/AL sites on the risk-based decision tree developed by the Administrative Authority.

Native American Scenario Team

A student from a local pueblo hired to assist in establishing an effective communication link between the ER Project and the pueblos is developing a presentation and paper on a Native American risk assessment scenario. The paper, when finished, will be distributed to the four accord pueblos and the ER Project to provide guidance on working together to develop a risk methodology. The paper reflects work done over the past several years on development of the methodology.

2.4.2.3 Strategic Decision Analysis Team

Cumulative Risk Assessment Team

Team members held meetings with the TA-35 Industrial Sites Remedial Actions Team to determine the best approach to aggregating 52 individual potential release sites for assessment at the watershed level. The aggregation methodology under development supports the integrated technical strategy of the ER Project.

MDA Consistency Team

Team members completed the MDA Core Document and submitted it to DOE/Los Alamos Area Office (LAAO) for review on December 1, 1998. Team members also held meetings with the TA-39 Field Team to discuss the application of the MDA Core Document decision analysis to landfills in Ancho Canyon that are similar to MDAs.

Integrated Modeling/Water Issues

Team members participated in planning sessions regarding the use of modeling to support corrective action decisions at ER sites. Results will be presented to the Administrative Authority. Team members met with the High Explosives Production Sites Team to identify a high-priority site for evaluating a new sediment transport simulation model. Data used in model simulations were collected for importation into the hydrogeologic database. A training session was held regarding the use of a probabilistic decision analysis tool to identify sensitive parameters in simulation models. This decision analysis tool will be used to make data determinations for the three ER Project operational focus areas. Team personnel began linking the hydrogeologic database to grid generation software for subsurface transport modeling.

Work scope was defined for FY99 for three special studies initiated in FY98. These studies ensure a robust infrastructure for modeling contaminant fate and transport at major ER sites. The three special studies are

- developing an electronic database for three-dimensional visualization and mapping of the stratigraphy across the 43-square-mile Laboratory-complex model,
- characterizing the geochemistry of the regional aquifer, and
- modeling of surface water runoff and sediment transport.

In other activity, meetings were held with TA-49 personnel to discuss the interflow trench and the MDA AB monitoring plan. Team personnel also met with a representative from the US Department of Agriculture (USDA) Salinity Laboratory to discuss landfill cover modeling.

2.5 Regulatory Compliance — Focus Area Leader: Tori George

2.5.1 Team Activities

2.5.1.1 Communication and Outreach Team

Work continued on EM Division's sustainability issues. Personnel completed the ER Project FY99 Regional Sustainability Implementation Plan and the web-based tracking system for the sustainability program and delivered the plan and tracking system to the EM Division Office. Personnel implemented the plan and prepared a draft report for the EM Division Office.

Photographic documentation efforts continued. Photographs were taken of many of this quarter's ER activities. Existing photographs and maps were scanned for miscellaneous ER reports and for the ER photographic archive.

Other activities included completing the Public Involvement Plan for inclusion in the ER Installation Work Plan, which was delivered to NMED this quarter; working with the Laboratory's Public Affairs Office regarding news media interactions related to the R-12 well; and meeting with Laboratory and NMED officials on issues related to the R-25 well.

Outreach Activities. Team members completed the following outreach activities this quarter:

- Participated in the Laboratory's Outreach Coordinating Council meetings.
- Participated in the DOE/LANL Citizens Advisory Board public meetings at Taos, Santa Fe, and Cochiti Pueblo.
- Completed the ER Project exhibit on ecological risk for the seventh community environmental meeting titled "Endangered Means There's Still Time...But How Much?" Staff also participated in the public meeting.
- Prepared ER Project information sheets for PRS-21-003 and PRS 21-024(i) for an NMED tour.
- Organized the ER Project/DOE/Headquarters (HQ) meeting and tour.
- Assisted with the Española Main Street "Kids Fest" event held in Española, New Mexico.

- Provided logistical and graphics support to the ER Project Baseline Independent Cost Evaluation meeting that included officials from DOE/HQ and other DOE-wide sites; coordinated a tour of two ER Project sites for this group on behalf of the ER Project Planning and Control Team.

Land Transfer Issues. The team prepared the Task # 2 Draft Report for the Land Transfer Project. Tasks included preparing descriptions of all PRSs in the parcels included in the report, scanning maps and related photos, reviewing FIMAD data, and developing remedies and life-cycle cost estimates for PRSs in TA-21. The team transmitted the document to DOE November 30, 1998. The team has received comments from DOE/LAAO, DOE/AL, and DOE/HQ and the staff is in the process of reviewing the comments and revising the report.

Other land transfer activities included completing estimates of increased FY99 cost for accomplishing DOE land transfer directives and participating in the Interagency Management Team review of the first draft of the Environmental Impact Statement for Conveyance and Transfer.

2.5.1.2 Deliverables Tracking and Consistency Team

PRS Database and Future Deliverable Tracking. The team continued to provide data, as requested for work-off sites, septic systems, and land transfer issues, and the supporting documentation for deliverables. Team personnel continued data entry of regulatory deliverables and other information into the PRS database. The Deliverables Database was taken off-line, and personnel began the effort of placing electronic copies of all NODs and RSIs on the ER server.

Members of the team continued to investigate current information tracking systems in use at the ER Project and to assess and define needs for future information tracking. The goal is to create a system that allows ER Project personnel, DOE, regulatory agencies, and the public to easily access information regarding the status of work at Laboratory PRSs and to determine the status and completion dates of regulatory and performance measure deliverables. It is hoped to have the system accessible on the Web by FY 2000. In the meantime, the staff worked with ER operational focus areas to determine the status of and to track FY98 deliverables; such deliverables include responses to RSIs.

Members of the team continued to meet with NMED staff to coordinate and strategize the most effective and efficient methodology to manage the backlog of documents currently with the Bureau.

Members coordinated ESH Division and Legal Counsel reviews to ensure all NMED deliverables had legal and ESH reviews before transmission to DOE and NMED.

Contracting. Team members worked to plan and implement a contracting tool kit for managers within the ER Project. The goal is to provide a Web site by June 1999 that gives managers within the ER Project the needed information for requesting contractor work. Team members met on a weekly basis to discuss the best way in which to present the contracting issues and answers for use through the Web. Team members worked on portions to go on the Web site, including sole source procurement and conflicts of interest. Additionally, team members provided support to technical representatives and contract administrators in working through a variety of contracting problems.

Consistency. Team members attended peer reviews during the quarter and participated in the creation of a number of documents, including quality procedures for improving the document and peer review process in the ER Project.

2.5.1.3 ER Policy and Guidance Team

The Policy and Guidance Team assisted with responses to a Compliance Order and an NOD this quarter. The team worked with the MDAs Focus Area to complete the response to Compliance Order 98-01, which required the submittal of a work plan for the DP Tank Farm. The final work plan was submitted to NMED on October 7, 1998. The team also assisted with the response to the NOD on TA-49.

Lee

Team members met with the HRMB and DOE to discuss requirements and expectations for renewal of the RCRA permit and the permitting strategy. Personnel worked with DOE to identify contingencies if the HRMB rejects the permit application. Team members presented the proposed outline for the new permit application to NMED and began working on the permit application.

Other activities included the following:

- met with HRMB to discuss regulatory options for the proposed *in situ* vitrification project at TA-21;
- met with HRMB, Surface Water Quality Bureau, and the DOE Oversight Bureau to propose and discuss aggregation;
- began working on aggregation strategies and a needs assessment for aggregation;
- continued working on the roadmapping effort for the ER Project, and identified key activities and uncertainties for each of the three strategies proposed;
- participated in the baseline validation effort for the ER Project; and
- redrafted existing ER Project policies, as necessary.

2.5.1.4 Regulatory Integration and Operations Team

Major accomplishments for the quarter are as follows:

- Completed PRS status sheets for approximately 30 NFA Criteria 1, 2, and 3 work-off sites (work-off sites are PRSs that have been proposed in previous documents for NFA based on human health risks but require evaluations for ecological and surface water concerns) and 15 PRS status sheets for NFA Criterion 4 work-off sites. All of these PRSs are HSWA units and will be included in a Request for Permit Modification.
- Identified and reviewed the status of potential PRSs for work off in FY99, and developed PRS status sheets and a summary matrix to track work-off activities.
- Managed the removal of the 560-gallon underground storage tank at TA-2 on October 28, 1998.
- Provided access to the SOP 2.01 Surface Water Site Assessment database to Laboratory internal users through the ESH-18 Web site.

Clean Water Compliance Activities. Personnel met weekly with the Watershed Management Team in an effort to integrate approaches with the National Park Service regarding water quality in Frijoles Canyon at Bandelier National Monument. Monthly meetings were held with the Surface Water Assessment Team to review erosion matrix scores and to recommend appropriate BMPs where necessary. Personnel participated in field visits with NMED to ensure appropriate erosion/sediment controls, retention structures, and run-on diversion controls are being implemented at TAs 10, 11, 33, 35, 50, and 53; at the TA-16-260 corrective measures study; and at PRS 21-024(i), a former septic tank and outfall. They also developed a written request to the NMED Ground Water Quality Bureau for the discharge of 65,000 gallons of purge water at the R-25 drill site.

Team members participated in the Solid Waste Management Unit (SWMU) Working Group meeting with Los Alamos County representatives where work at the following townsite locations was discussed:

- Los Alamos Medical Center,
- Guaje Pines Cemetery,
- Hillside 137,
- development in the Bailey Bridge area,
- development near the old Catholic Church [SWMU 0-030(g)],
- Central Wastewater Treatment Facility (SWMU 0-019), and
- Airport Landfill and ash/incinerator pile.

Team members resubmitted to the NMED the existing surface water and groundwater data generated by ER Project over the past three years, with support from Analysis and Assessment, Canyons, and Remedial Actions Focus Areas. The team also completed the draft copy of the "global" SWMU Storm Water Pollution Prevention Plan. The team supported the Laboratory in submitting a Notice of Intent to discharge storm water, as required by the US Environmental Protection Agency under the new Multi-Sector Storm Water Permit.

Waste Management Activities. The ER Project received approval from DOE to manage several drums of hazardous waste containing slight residual radioactivity as "hazardous only" waste through use of the DOE Authorized Limits Process.

Did they notify us.

Regulatory Integration and Operations Team members performed various waste management activities this quarter: Personnel initiated a drum-recycling program with the Laboratory's EM/SWO and conducted an inspection of all RCRA Waste Storage Areas. Personnel coordinated the transfer of the purge water from R-9 to the TA-50 Radioactive Liquid Waste Treatment Plant for treatment and discharge and the transfer of the drill cuttings from R-12 to the county landfill for disposal. Personnel coordinated the pickup of waste streams from the PRS 0-017 Hydraulic Spill, Sandia Canyon, MDA AB at TA-49, and the Field Support Facility at TA-61.

Team members completed the following work on waste management documents this quarter:

- submitted the ER Project Waste Certification Plan to EM/SWO;
- submitted to EM Program Office a draft letter titled "Waste with No Path" for RCRA/TSCA/ radioactive samples;
- provided regulatory reviews and comments on four waste characterization strategy forms and low-level waste projections for EM/SWO for FY99, and developed waste estimates for the TA-21 Land Transfer Project; and
- prepared waste profiles and disposal requests for 3000 gallons of wastewater generated at R-9 and for 2 roll-off bins of drill cuttings for R-12.

National Resource Damage Assessment (NRDA) Activities. A representative of the Regulatory Integration and Operations Team met with the NRDA Trustee Council to finalize the Memorandum of Agreement, provide documentation of administrative NFA sites, address Trustee comments on the ER/NRDA Integration document, suggest sources of surveillance data, and discuss the PRSs located on Forest Service and Bandelier National Monument lands.

MDA Activities. Team members worked with the MDA Focus Area on the following activities this quarter:

- preparation of the MDA Core Document, which addresses the strategy for managing MDAs;
- the response to the NOD on the moisture contingency plan;
- the development of theTA-21 Project Plan;
- sampling activities in DP Canyon;
- land transfer issues;
- tour of TA-49 for the independent audit;
- completion and transmittal of the Work Plan for DP Tank Farm;
- sent the 10-day field work notification for the "Bottle House" at TA-49 to NMED; and
- reviewed the draft implementation plan for *in situ* vitrification at MDA V and worked on waste coordination issues for that site.

Other Activities. Members of the Regulatory Integration and Operations team completed other activities this quarter. The ER Installation Work Plan was completed and transmitted to NMED for review and comment on November 19, 1998, and a draft of the TA-53 SAP Addendum for PRSs 53-006(a-e) was completed and transmitted to NMED HRMB. Team members participated in a meeting regarding the removal of the underground storage tank at the ATLAS Project located at TA-35 and attended various meetings with the operational focus areas to address regulatory issues. Personnel began work on the consolidation effort for related PRSs; members of the team reviewed TA-3 PRSs for consolidation candidates and completed a consolidation worksheet for the TA-3 wastewater treatment plant.

Team members participated in meetings with the following external organizations:

- Oversight Bureau to discuss staff roles and responsibilities,
- HRMB to discuss the prioritization of document review and how the ER Project should proceed "at risk" if necessary,
- EPA regarding the 1114 Work Plan RSI response,
- Interagency Wildfire Management Team to provide input regarding ER field activities and "points of contact" for FY99,
- HRMB, DOE Oversight Bureau, and DOE/LAAO to discuss the requested Class 2 modification of the approved Closure Plan for MDA P,
- NRDA Trustee Council to finalize the Memorandum of Agreement,
- HRMB/LANL ER monthly meeting,
- Sandia National Laboratory to address waste minimization, and
- NMED regarding the 260 Outfall ecological risk.

The team participated in document and peer reviews for

- interim action plan for PRSs 33-008(c) and C-33-001;
- SAP for PRS 0-030(g) outfall;
- work plan for PRSs 53-002(a,b);
- response to RSI for PRSs 53-006(a–e); and
- VCA Fact Sheets for PRS 0-019, PRS 3-056(c), PRS 16-016(c), PRSs 33-007(b), 33-010(c), and C-33-003.

In addition, team members conducted regulatory reviews and provided comments on the following documents:

- Environmental Restoration Project Waste Minimization Awareness Plan;
- Evaluation of Sediment Contamination in Lower Los Alamos Canyon, Reaches LA-4 and LA-5;
- Evaluation of Sediment Contamination in Upper Los Alamos Canyon, Reaches LA-1, LA-2, and LA-3;
- Response to the NOD on the RFI for the Stabilization Plan of Implementing Interim Measures and Best Management Practices, TA-49, PRSs 49-001 (b, c, d and g);
- Waste Management Plan for MDA P;
- SOP for Site Closeout; and
- Quality Procedure for Readiness Review.