

HSAW LANL G/M/R '99



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Kretz

Date: May 14, 1999
Refer to: EM/ER:99-123

Mr. James Bearzi
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: QUARTERLY TECHNICAL REPORT FOR JANUARY-MARCH 1999

Dear Mr. Bearzi:

Enclosed are two copies of the Environmental Restoration Project's Quarterly Technical Report, January-March 1999. 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,

Theodore J. Taylor, Program Manager
DOE/LAAO

JC/TT/MB/dm

- Enclosures: (1) Quarterly Technical Report, January-March 1999
(2) Certification



TL

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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, January-March 1999

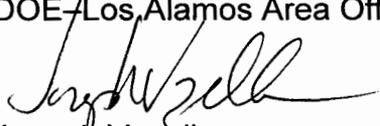
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Los Alamos National Laboratory
Environmental Restoration

A Department of Energy Environmental Cleanup Program

QUARTERLY TECHNICAL REPORT

January–March 1999

May 13, 1999

LANL W/F

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LIST OF ACRONYMS AND ABBREVIATIONS

AP	administrative procedure
BMP	best management practice
CMS	corrective measures study
COPC	chemical of potential concern
DOE	US Department of Energy
DOE-LAAO	US Department of Energy/Los Alamos Area Office
EES	Earth and Environmental Science (Division)
EPA	US Environmental Protection Agency
ER	environmental restoration
ESH	environment, safety, and health
ESH-18	Water Quality and Hydrology Group
ESH-19	Hazardous and Solid Waste Group
ESH-ID	environment, safety, and health identification (process)
FU	field unit
FY	fiscal year
HE	high explosives
HRMB	Hazardous and Radioactive Materials Bureau
HSWA	Hazardous and Solid Waste Amendments
ICPMS	inductively coupled plasma mass spectrometry
KPA	kinetic phosphorescence analysis
LANL	Los Alamos National Laboratory
MDA	material disposal area
NEPA	National Environmental Policy Act
NFA	no further action
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NOD	notice of deficiency
NRDA	Natural Resource Damage Assessment
NTISV	nontraditional <i>in situ</i> vitrification
OU	operable unit
PCB	polychlorinated biphenyl
PRS	potential release site
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
RSI	request for supplemental information
SAP	sampling and analysis plan
SGS	segmented gate system
SOP	standard operation procedure
SSHASP	Site-Specific Health and Safety Plan
SWMU	solid waste management unit
TA	technical area
VCA	voluntary corrective action
VCM	voluntary corrective measure

**QUARTERLY TECHNICAL REPORT
JANUARY–MARCH 1999
LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL RESTORATION PROJECT**

ALBUQUERQUE OPERATIONS OFFICE

CONTRACTOR: University of California

PROJECT MANAGER: Julie Canepa

NUMBER OF POTENTIAL RELEASE SITES: Approximately 2,000

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 Plans and Reach Reports

During the second quarter of fiscal year (FY) 1999, the Canyons Focus Area submitted the four reports listed below to the US Department of Energy (DOE) and the New Mexico Environment Department (NMED).

- Report on Alluvial Well Completions 1996–1999;
- Surface Water and Alluvial Ground-Water Chemistry Data for TA-18 and former TA-27 in Lower Pajarito and Three-Mile Canyons;
- Final Corrective Action Status Report for PRS 18-003(d), TA-18, Seventh and Eight Quarters (Former FU 2, OU 1093); and
- Voluntary Corrective Measure Plan for Potential Release Sites 18-003(a–h) Septic Tank Systems.

2.1.2 Ongoing Reach Investigations

2.1.2.1 DP Canyon (part of Los Alamos Canyon system)

The focused validation for the data collected in November 1998 was completed during this quarter. This validation effort addressed sediment and alluvial groundwater data. The data will be used to prepare the DP Canyon report, scheduled for completion in August 1999.

2.1.2.2 Mortandad Canyon

The first phase of sediment investigation in Mortandad Canyon began at the end of March. Geomorphic mapping and planning for the radiological walkover survey is under way for the four new reaches in Mortandad Canyon. Preparation activities began for fieldwork in Tensite Canyon (reaches TS-1 and TS-2) and Mortandad Canyon (reaches M-3 and M-4), including updating the site-specific health and safety plan (SSHASP), geologic and geomorphic surveying, and designating areas for the radiological surveys.

2.1.2.3 Acid Canyon (part of Pueblo Canyon system)

Canyons Focus Area personnel provided geomorphic mapping and characterization support and preparation for sediment sampling in the potential release site (PRS) 0-030(g) tributary to Acid Canyon.

2.1.2.4 Upper Sandia Canyon

Second quarter surface water base-flow sampling was conducted at six stations in accordance with the Upper Sandia Canyon Sampling and Analysis Plan in support of the Remedial Actions Focus Area.

2.1.2.5 Cañada del Buey (White Rock Land Transfer Parcel)

Canyons Focus Area personnel conducted the readiness review and began the initial site surveys for the surface characterization of the White Rock land transfer parcel. These survey tasks include geomorphic mapping and radiological walkover surveys. The results of this investigation will be provided as input for a land transfer report describing the environmental condition of the site.

2.1.3 Groundwater Activities

The installation of the last of four alluvial wells planned for FY 1999, alluvial well MCO-0.6 in upper Mortandad Canyon, was completed during the second quarter. MCO-0.6 was drilled by hand auger through the alluvium to a depth of 3.1 ft where impenetrable bedrock was encountered. The alluvium was not saturated at the time of installation, but a damp zone was encountered in the bottom 0.5 ft. The well screen was placed at 1.05- to 3.05-ft depth in anticipation that the alluvial system would recharge during the spring snowmelt runoff (the water level was measured at 1.68-ft depth on March 31). A soil sample from the alluvial material was collected for contaminant characterization. Well development and groundwater sampling activities are planned for later this year.

The schedule for the completion of regional well R-15 in Mortandad Canyon has been delayed by the availability of the Barber drill rig, which is still engaged in drilling operations at R-25.

2.1.4 TA-18 Activities

The voluntary corrective measure (VCM) plan for PRS 18-003(a-h) septic systems was completed in March 1999. Fieldwork is currently scheduled to begin the first quarter of FY 2000.

2.2 Material Disposal Areas — Focus Area Leader: Deba Daymon

2.2.1 General Information for Material Disposal Areas Focus Area

General activities for Material Disposal Areas (MDAs) this quarter include the following:

- supported the roadmapping effort;
- provided input for the Programmatic Assumptions Document;
- attended a retreat with DOE at Ghost Ranch to discuss the ER Roadmap and other strategic issues;
- participated in consolidation and aggregation efforts with NMED and DOE; and
- participated in public meetings for the land transfer of the TA-21 parcel.

The final version of the MDA Corrective Action Strategy Document is nearing completion; personnel are incorporating and addressing comments received from DOE and Laboratory review of the December 1, 1998, draft. In response to DOE comments, fact sheets were completed for 13 MDAs, including all of the larger, more complex sites for which the MDA corrective action strategy will be implemented. Parameters were established for a probabilistic modeling tool that was selected to perform sensitivity and uncertainty analyses. This tool supports the development of quantitative decision rules for the decision-analytic component of the strategy.

2.2.2 Technical Area Activities

2.2.2.1 TA-21

The Project Plan for Remediation of TA -21 was completed and submitted to DOE on February 12, 1999.

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 (according to draft LANL-ER-SOP-2.01, formerly draft LANL-ER-AP-4.5) during January.

PRS 21-015, MDA B. The response to the request for supplemental information (RSI) for the Sampling and Analysis Plan for 21-015 was submitted to NMED on February 12, 1999. Preliminary data from sampling activities at MDA B are undergoing focused validation.

PRSs 21-017(a,b,c), MDA U. Preliminary data from sampling activities at MDA U are undergoing focused validation.

PRS 21-018(a), MDA V. The readiness review was completed for the "cold" demonstration (i.e., demonstration with no radionuclides present) portion of the nontraditional *in situ* vitrification (NTISV) Project on February 23, 1999, and mobilization for the demonstration occurred on February 26, 1999. During excavation of the mock-up bed for the demonstration, petroleum

hydrocarbon contamination was found. NMED was notified and the decision was made to perform the cold demonstration as a VCM under the Resource Conservation and Recovery Act (RCRA) corrective action process.

Site preparation activities have been completed for the NTISV cold demonstration; those activities include baseline sampling, construction of the mock-up absorption bed, installation of electrical power, installation of geophysical monitoring wells, installation of electrodes, installation of starter planes, and placement of the hood over the test cell.

The ER Project, DOE, and contractor personnel met with NMED on March 12, 1999, to resolve comments on the NTISV Test Plan. A second meeting was held on March 18, 1999, to discuss the outline and scope of the VCM plan.

The ER Project and DOE personnel made a joint presentation to EM-40 and EM-50 at DOE Headquarters on March 18, 1999, on the status of the cold demonstration portion of the NTISV Project.

PRS 21-024(i). Data from sampling activities at PRS 21-024(i), a septic system, are pending.

PRS 21-029. ER personnel met with DOE and NMED on March 3, 1999, to discuss the DP Tank Farm RFI Work Plan. NMED expects to have preliminary comments available in April.

2.2.2.2 TA-49

PRS 49-001(b,c,d,g), MDA AB, Areas 2, 2A, and 2B. The Laboratory received a letter from NMED on February 18, 1999, indicating that the Laboratory's response to the December 21, 1998, notice of deficiency (NOD) on the stabilization plan for MDA AB, Areas 2, 2A, and 2B was acceptable. As a result of this letter, the draft of the stabilization plan for implementing interim measures and BMPs can be finalized. Additionally, the drafts of the BMP and the IM completion reports can be finalized. The projected completion date for these reports is the end of April 1999.

2.2.2.3 TA-54

A table of contents was drafted for the TA-54 RCRA facility investigation (RFI) report due to NMED in September 1999; this draft will be presented at the April monthly meeting of the ER Project and NMED/Hazardous and Radioactive Materials Bureau (HRMB) personnel. Sections 1 and 2 of the TA-54 RFI report were drafted and will be internally reviewed and completed in April. Multi-media contaminant data tabulation, validation, and screening analyses are under way. Discussions were held with the facility manager of TA-54 regarding roles and responsibilities for site maintenance, closure, and surveillance and monitoring.

Personnel completed quarterly 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 Firing Sites Team

2.3.1.1 TA-15

The SAP and planning document scheduled for the formally denied 1995 RFI Report for TA-15 will be held until the aggregate containing the relevant portion of TA-15 is scheduled for work according to the new baseline. The new baseline will reflect the new consolidation and aggregation strategy.

PRS 15-009(c) Final work on the interim action report for this septic tank is under way. The report will be delivered in the early part of the third quarter of FY 1999.

2.3.1.2 TA-33

Significant progress was made on the TA-33 segmented gate system (SGS) VCA project. A kickoff meeting was held in early January. NMED was briefed on the project for VCA determination. A VCA plan was prepared and peer reviewed, and the project is scheduled to go to the field in April 1999.

Preparations for the readiness review for the TA-33 VCA included writing two short SSHASPs and the SSHASP for SGS activities; completing the waste characterization strategy forms; completing the environment, safety, and health identification (ESH ID) process; writing a facility tenant agreement; and obtaining necessary permits and equipment.

2.3.1.3 TA-36

PRs 36-001, 36-004(d), and 36-006. The SAP and planning document that are currently in preparation as a response to NMED's formal denial of the RFI Report for these sites will be held until the aggregate containing this portion of TA-36 is scheduled for work according to the new baseline. The new baseline will reflect the new consolidation and aggregation strategy.

2.3.1.4 TA-39

PRs 39-001(a,b). The SAP and planning document that are currently in preparation to respond to NMED's formal denial of the RFI Report for PRs 39-001(a,b) will be held until the aggregate containing this portion of TA-39 is scheduled for work according to the new baseline. The new baseline will reflect the new consolidation and aggregation strategy.

2.3.2 High Explosives Production Sites Team

The High Explosives Production Sites Team spent most of the last quarter in fieldwork and data analysis activities. Sampling for nature and extent of contamination was completed at V-Site. Data were received from two pilot studies for high-explosives (HE) treatment. Results were encouraging, but additional refinement of these methods is required.

2.3.2.1 TA-16

Hydrogeology. The field team continued to monitor water levels in the Cañon de Valle alluvial wells. Flow measurements were collected in the wells. Water levels were low because of the minimal precipitation that has occurred this winter. The High Explosives Production Team continued to provide field analytical results for the regional well R-25 drilling effort. Low levels of

HE were found in waters from R-25 at depths ranging up to 1942 ft. In March, 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. No bromide tracer breakthrough was observed. All second quarter results are pending. Planning for a geophysical study in Cañon de Valle was initiated. In March, fieldwork was limited to nonintrusive activities because of the presence of a threatened and endangered species in Cañon de Valle.

TA-16-260. The Laboratory presented the results of the RFI report and corrective measures study (CMS) for PRS 16-021(c) at a public meeting in Española on February 4, 1999. The Laboratory also presented these results to numerous groups of visitors to the R-25 well site. The Laboratory received an RSI from the NMED on the RFI report and the CMS plan on March 22, 1999. The High Explosives Production Team is developing responses to this RSI. Stormwater Management, Inc., was provided with additional samples for passive barrier treatment testing. Planning for on-site studies of zero-valent iron treatment of HE-contaminated soils was initiated.

V-Site. Sampling for nature and extent of contamination at the V-Site PRSs was completed. A preliminary review of these data suggests that five PRSs remain as possible candidates for no further action (NFA). A decision peer review of V-Site was completed. An internal team review of a rough draft of the V-Site VCM report was also completed.

TA-16 Burning Ground VCA. A presentation of this VCA and RCRA closure was given to NMED. NMED approved the cleanup of the barium nitrate pile [PRS 16-016(c)] as a VCA. As a cost-saving measure, this cleanup will be coordinated with that at MDA P. The VCA plan for the barium nitrate pile will be melded with the Phase II SAP for MDA P.

Surface Water. Data were received from first quarter sampling at all PRSs having draft LANL-ER-SOP-2.01 (surface water site assessments) scores greater than 60. Additional BMPs will be needed at MDA R based on the results of these data.

2.3.2.2 TA-22

The SAP for PRSs 22-012 and 22-015(a,b,d,e) was completed and provided to NMED.

2.3.3 Industrial Sites Team

Industrial Sites Team personnel attended and participated in Surface Water Assessment Team meetings. They also provided NMED-requested information about various sites. The information included maps, data, and historical documentation.

2.3.3.1 TA-3

Upper Sandia Canyon. The Industrial Sites Team completed second quarter water sampling. First quarter data are being validated. The focused validation for the first round of the upper Sandia Canyon sampling was completed; the validation will ascertain whether any sample suites need to be recollected because of unacceptable data quality. Initial discussions with NMED about the first round of analytical results resulted in a reduced analytical suite for the base-flow surface water sampling. The information will also be used to pinpoint the final round of sample locations and analytical suites. To date, polychlorinated biphenyls (PCBs) were detected at greater-than-1 ppm at only 2 of 80 locations within the upper Sandia Canyon reaches.

PRS 3-056(c). A fact sheet was submitted to NMED in February 1999 regarding PRS 3-056(c), a transformer storage area located on a steep slope leading to a Sandia Canyon tributary and used by the Laboratory's electrical power line maintenance contractor from 1957 to present. The NMED

decision regarding the site was to proceed with a VCA (rather than a VCM). A Phase I RFI was performed in 1994, and detection of contaminants (PCBs) greater than screening action levels led to an expedited cleanup in 1995. Toxicity Substances Control Act guidance was used to determine the PCB cleanup level of 10 ppm for the industrial site. One thousand yds³ of PCB-contaminated material were removed from the site, resulting in the 2-acre site being cleaned up to a level of less than 10 ppm total PCBs. The site is considered to be a watercourse, although only 10–15 ft of the western slope's toe is actually within the high water table, and as such, the administrative authority has required this site be cleaned up to a level of less than 1 ppm total PCBs.

PRS 3-010(a). In preparation for a meeting between HRMB and the Laboratory's ER Project, personnel addressed questions that the NMED Groundwater Quality Bureau had regarding this PRS, a disposal site. At the HRMB/ER Project meeting, a representative from the Groundwater Quality Bureau asked questions regarding the construction of the well on the site, which was installed but never developed; the samples taken from the well were mostly "mud" and not filtered. There is a concern with the interpretation of the data, which do not meet US Environmental Protection Agency (EPA) sampling guidelines for water. Other than periodic water-level measurements in the borehole, no other groundwater data have been collected at this site. According to a representative of the Groundwater Quality Bureau, that bureau has no concerns with the site. During the HRMB/ER Project meeting, HRMB personnel agreed to review all information regarding this site and to make a final decision about the regulatory status of this PRS (i.e., whether the NFA recommendation will be accepted).

Best Management Practices. The team finalized plans, designs, and cost estimates for putting BMPs in place at PRSs 3-010(a) and 3-056(c). Personnel began preparation of SSHASPs for the BMP activities.

2.3.3.2 TA-35

The TA-35 integrated SAP is being developed as the pilot for the integrated strategy document. This SAP will integrate the data needs for evaluation of human health and ecological risk as well as gather information that will be needed in conducting watershed assessments and cumulative risk evaluations. The SAP will include more than 52 PRSs in TA-35. All previously collected data will undergo the formal data analysis and assessment process in order to identify data gaps for the additional assessments.

The integrated SAP approach is as follows:

- Assess existing PRS-specific data by applying the NMED risk-based decision process.
- Identify gaps in existing data quality or quantity as the basis for supplemental sampling.
- Consider common-receptor aggregation strategy for stratifying supplemental samples.
- Characterize individual PRSs for nature and extent of contamination, with hill-slope PRS extent being bounded at the toe of the slope, by definition.
- Characterize aggregate PRSs for nature and extent of contamination where PRS boundaries are ambiguous or overlapping.

- Assess imminent and substantial endangerment for aggregate PRSs with common present-day receptor(s) (i.e., mesa-top PRSs with industrial-use scenario, hillside/slope-toe PRSs with recreational/resource-use scenario).
- Propose those PRSs (aggregated as necessary) for NFA that “pass” both human health and ecological assessments.
- For PRSs that are not proposed for integrated NFA, use data to support conceptual model of contaminant inventory in watershed-level site conceptual model.

Validation of the data is complete, and exploratory data analysis is almost complete. The team began developing the technical approach, data quality objectives, site models, and sampling designs. Decision peer review is scheduled for April 12, 1999.

2.3.3.3 TA-53

PRSs 53-006(a,b,c,d,e). The team continues to coordinate with facility management at TA-53 to collect samples as the radioactive liquid waste system is upgraded. Samples were collected below the radioactive liquid waste pipeline at two locations near buildings TA-53-622 and TA-53-30 at the vicinity of PRSs 53-006(d and e). Also, three samples were collected in the area northeast of the impoundments where the new holding tanks will be located. The area sampled is part of PRS 53-008.

PRSs 53-002(a,b) and 53-006(a,b,c,d,e). The team completed an 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–e). The response to the RSI included archival research and submittal of documentation and analytical data. The RSI response was transmitted to NMED on March 19, 1999.

The team began fieldwork preparation for the removal and disposal of a deteriorated geotextile that had been placed on the surface of PRS 53-002(a). Fieldwork preparation activities include writing an SSHASP, beginning the ESH-ID questionnaire process, putting tenant agreements in place, and performing TA-53 site-specific training for all personnel involved.

2.3.4 Townsites Team

2.3.4.1 TA-0

PRS 0-017. Analytical data were received from the contract laboratories and were subsequently validated. The contractor performed a second phase of fieldwork along the sides of Los Alamos Canyon in late January to delineate potential lead contamination associated with the Omega Bridge. Fieldwork was coordinated with the Laboratory’s Hazardous and Solid Waste Group (ESH-19) who provided survey and x-ray fluorescence services. Additional samples were sent off-site for fixed-laboratory analyses (lead only). The contractor provided a draft RFI report for PRS 0-017 near the end of the quarter; the report is presently undergoing internal review.

PRS 0-019. A VCA plan was drafted for remediation activities at the former Central Wastewater Treatment Plant. The plan was peer reviewed, and revisions were made prior to submittal to DOE. Waste characterization fieldwork was conducted to determine information for waste profiles and for determination of chemicals of potential concern (COPCs). The contractor is awaiting analytical results upon which a limited analytical suite will be developed for extent sampling on the hillsides below the outfall areas. Characterization samples collected from the pump house were found to

contain lead and asbestos, which may require additional funding for this out of scope development. A field implementation plan for asbestos abatement was drafted to remove asbestos-wrapped piping at property located at the intersection of Oppenheimer Drive and Loma Vista Drive. The plan was written to include asbestos abatement activities at the PRS 0-019 pump house as well. The contractor submitted a corporate health and safety plan for asbestos abatement activities and short SSHASP for approval. A short delay was incurred in generating an approved access agreement because the property was sold to Housing Solutions of Santa Fe. Work is expected to be complete by the end of April.

PRS 0-030(g). The SAP was completed for sampling of the canyon area downgradient from the former septic tank location. The SAP underwent a peer review and was submitted to the NMED in February. The team is awaiting a response from the NMED from their review of the SAP. A meeting was held on March 17, 1999, in Santa Fe with the NMED to discuss results from the mesa-top portion of the investigation.

2.3.4.2 TA-1

Sitewide PRS Re-evaluation. A kickoff meeting was held for the re-evaluation of all TA-1 PRSs. The contractor began work on the project, including data management and assessment activities, review of previous reports, determination of data gaps, and formulation of SAP preparation activities.

2.3.4.3 TA-73

Group 73-2 PRSs 73-003, 73-004(a,b), 73-005(a-f) 73-006, and 73-007. The contractor performed all fieldwork associated with the above listed PRSs and is presently awaiting analytical results. Approximately 200 linear feet of vitrified clay pipe and cast iron pipe were removed during investigation activities; the cast iron pipe was recycled.

2.3.5 MDA P Closure

Mobilization activities were completed this quarter. Excavation and segregation of soil and debris from the MDA P West Lobe began. Approximately 2800 yds³ of soil were excavated this quarter. This material has been staged pending analytical results. Approximately 1500 yds³ of debris were also excavated and decontaminated and then staged pending analytical results.

2.4 Analysis and Assessment — Focus Area Leader: Alison Dorries

2.4.1 General Information for Analysis and Assessment Focus Area

Members of the Analysis and Assessment Focus Area continued to participate in the ER re-baselining effort (as members of the aggregation watershed teams). Much of this effort involved revising the draft Programmatic Assumptions Document to reflect DOE comments, and developing Task Scope Documentation. Several members of the Analysis and Assessments Focus Area Team continued to support the development of the ER Project Roadmap and the 2006 Vision Roadmap documents, completing second versions of both. Analysis and Assessment Focus Area personnel also participated in the ER prioritization effort.

During this quarter, the ER Integrated Information Management System Committee was established and the Data Analysis and Assessment Team Leader was appointed as a core member. This team member is instrumental in directing work to correct problems associated with

ER Project legacy electronic data, starting with the data set for the DOE Los Alamos Area Office (LAAO) land transfer parcel as a pilot project.

The Ecological Risk 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.

Members of the Strategic Decision Analysis Team assisted in writing a proposal for Laboratory funding to model groundwater transport of HE from the 260 outfall. This study would help to assess potential human health risk due to ingestion of contamination that may be transported to water supply wells. Team members also assisted in assessing groundwater sample results from the R-25 regional well and presented TA-16 hydrologic issues at a meeting with the NMED Groundwater Bureau focusing on the results of the pore water natural tracer analyses and their meaning in the context of the site conceptual model.

2.4.2 Team Activities

2.4.2.1 Data Analysis and Assessment Team

The Analysis and Assessment Focus Area assumed stewardship of the ER Project legacy electronic data in order to ensure that the electronic database will be able to meet project needs in terms of aggregation strategy, modeling, institutional databases and institutional demands. The Data Analysis and Assessment Team also presented to NMED the proposed Laboratory approach to implementation of the new SW-846 Method 5035 for volatile organic compounds in soil samples.

Work continued on the DOE land transfer project. The first phase of the land transfer data set was downloaded and is undergoing quality assurance checks. Work began on the download of the second phase data set. Team members provided technical support for the data set preparation for the TA-18/Pajarito Canyon water data submittal to NMED.

Data Quality and Adequacy Task. The Data Quality and Adequacy team conducted the peer review process for five standard operating procedures (SOPs) addressing routine data validation. Two background comparison SOPs were reviewed and edited. Work continued on the upload of the LANL ER background data set to the Laboratory's Facility for Information Management, Analysis, and Display. Team members began revisions to the final draft of the technical report, "ICPMS and KPA Performance Characteristics for LANL Environmental Data."

Modeling Support Task. Team members drafted a document outlining the end-state vision for the ER contaminant database and a strategy for working with legacy data. LANL-ER-SOP-1.05, "Field Quality Assessment and Quality Control Samples," was revised, and a review was made of the draft data management plan for the groundwater database. Work continued on the definition of categories and criteria for data "pedigree." 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.

2.4.2.2 Risk Analysis and Review Team

Peer Review and Consistency Team. Twelve peer reviews were conducted in this quarter: three SAPs, two VCAs, two SOPs, two VCMs, and three quality procedures.

Ecological Risk Team. The Ecological Risk Team continued development of the ecotoxicological database, ECORISK. 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 and for radionuclides. Toxicity profiles for key 260 outfall COPCs, are in development. A list of data fields and tables for the databases was sent to DOE on March 31, 1999. The team incorporated NMED comments into the ecological risk screening methodology document.

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 COPCs were also refined.

Human Health Risk Team. During the second quarter, the Human Health Risk Team continued to develop and document a standard set of human exposure scenarios to evaluate human health risk at Laboratory potential release sites. A draft of these human health scenarios was sent to DOE on March 18, 1999, for comment.

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 continued to develop 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.

2.4.2.3 Strategic Decision Analysis Team

The Strategic Decision Analysis Team made considerable progress on the Integrated Technical Strategy Plan during the second quarter. Each task team contributed to this progress.

Surface Water Strategy Task. Team members made progress on both programmatic and technical issues. Members of this task team worked to integrate ER Project objectives and strategies with the Laboratory's "Draft Watershed Management Plan" (LANL 1999, 62920), defining how data collected under that plan would be used to support corrective action decisions. In addition, they continued to calibrate surface water and erosion models to field data, to apply these models in support of risk assessments at various spatial and temporal scales.

Groundwater Strategy Task. Progress was also made in both programmatic and technical areas. The team worked with institutional environmental programs to prioritize siting of regional wells to support ER decisions and strategies regarding groundwater contamination and continued to refine groundwater fate and transport models to support those decisions and strategies.

Cumulative Risk Task. The team assimilated the progress of the Surface Water and Groundwater Strategy Task Teams into an annotated outline for the Integrated Technical Strategy Plan. The Integrated Technical Strategy Plan is being developed to support implementation of the watershed approach to corrective actions described in the ER Project roadmap document. It will be the "umbrella document" that integrates and supplements existing documents (e.g., the "Core Document for Canyons Investigations" [LANL 1997, 55622]) and documents currently

under development such as the MDA Corrective Action Strategy. The annotated outline for the MDA Corrective Action Strategy document has been completed, as well as fact sheets for thirteen MDAs.

2.5 Regulatory Compliance — Focus Area Leader: Tori George

2.5.1 General Information for Regulatory Compliance Focus Area

This quarter, the focus area worked on tasks including consolidation and aggregation of PRSs, evaluation of work-off sites (those PRSs that have been proposed in previous documents for NFA based on human health risks but require evaluations for ecological and surface water concerns), the NTISV Project, land transfer, waste management, and regulatory review of documents. Specific tasks accomplished by the four teams in the focus area are discussed in the following sections.

2.5.2 Team Activities

2.5.2.1 Communication and Outreach Team

Land Transfer Activities. The Communications and Outreach Team completed many activities associated with land transfer. Members of the team revised the "Environmental Restoration Report to Support Land Conveyance and Transfer under Public Law 105-119" and distributed copies to individuals and groups, including the local media, the San Ildefonso Pueblo, NMED, and Los Alamos County. The team gave presentations on this document to the Los Alamos County Planning and Zoning Committee, the San Ildefonso Pueblo governor and tribal officials, and the Los Alamos County Council. Following these presentations, the team organized two public information meetings, one at the Pojoaque Cities of Gold hotel and one at Fuller Lodge in Los Alamos, on March 24, 1999, and March 25, 1999, respectively. The purpose of the meetings was to hold discussions of the ER Project and its role in the land transfer process. Team members prepared posters, handouts, a video, and an electronic slide presentation of the land transfer parcels, which were presented at the meetings. Members of the team took photographs at the public information meetings.

In other land transfer activities, a document summarizing the ER report on land transfer was prepared and distributed to persons such as members of the media, community leaders, and tribal officials. A Cost Estimation Report for land transfer was also completed.

Outreach Activities. The Communications and Outreach Team organized an ER Project public meeting held at Northern New Mexico Community College on February 4, 1999, to discuss the ER Project's accomplishments. Approximately 60 people attended the meeting. The presentations given at the meeting were videotaped.

Members of the team participated in the DOE/Laboratory Citizens Advisory Board public meetings in Nambe and Española, New Mexico. ER Project staff members gave a presentation on the R-25 monitoring well at the first meeting and on the status of the ER Project at the second meeting. Team members also participated in a one-day Citizens Advisory Board public workshop in Santa Fe, New Mexico. The subject of the workshop was risk assessment.

Other meetings attended this quarter included the following:

- DOE public meeting on neutron scattering (January 19, 1999);

- Rio Arriba Environmental Health Project monthly meetings in January and February 1999;
- meeting with environmental staff from the San Ildefonso Pueblo and the Santa Clara Pueblo to discuss land transfer issues, risk assessment, aggregation, and other relevant environmental restoration issues; and
- annual meeting of the Laboratory's Groundwater Integration Team.

Tours were provided for various officials this quarter. NMED toured major ER Project sites on February 24, 1999. A tour of the R-25 monitoring well was given for the four accord pueblo governors and tribal staff on March 5, 1999; approximately 42 people attended the tour. Team members then coordinated a tour of MDA P, the R-25 monitoring well, and the TA-21 NTISV Project on March 10, 1999, for officials from EPA Region 6, DOE Albuquerque Operations Office, and NMED.

Other outreach activities the Communications and Outreach Team participated in included attending the San Ildefonso Pueblo's feast-day activities January 6, 1999, and assisting with a press release for the R-25 monitoring well issues. Planning is under way for an ER Project Earth Day event scheduled for April 24, 1999, in Los Alamos County and for a community meeting on environmental monitoring being planned for April 29, 1999, that will include the Laboratory, NMED, and San Ildefonso and Jemez Pueblos.

Other activities. Personnel continued work on the ER Project's internal and external Web sites. Other activities included preparation of a draft public involvement appendix for the ER Project roadmap and preparation and delivery of access agreements to Los Alamos County for the airport and to Housing Solutions of Santa Fe for the property at the intersection of Oppenheimer Drive and Loma Vista subdivision.

2.5.2.2 Deliverables Tracking and Consistency Team

PRS Database and Future Deliverable Tracking. The team continued to provide supporting documentation for deliverables and data as requested for work-off sites, septic systems, and land transfer issues. Personnel continued data entry and tracking of regulatory deliverables and other information into the PRS database.

Members of the team continued to investigate current information tracking systems in use within the Project to assess and define needs for future information management. The team members began mapping system needs and current processes to assess critical information pathways. The staff continued to work with ER operational personnel to determine the status of FY 1999 deliverables.

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

Contracting. Team members began reviewing, updating, and performing a quality assurance check of the contracting toolkit for managers within the ER Project. Review of statements of work continued, and definition of the scope of a contracting self-assessment was begun.

2.5.2.3 ER Policy and Guidance Team

The team continued work on the renewal of the HSWA Module of RCRA permit. Discussions with DOE and HRMB continued regarding RCRA permitting strategy. The team completed the first draft of the permit renewal package and distributed it on March 18, 1999, to DOE- LAAO, ESH

Division, and the ER Project for review and comment. Comments will be reviewed and resolved during the next quarter.

Aggregation efforts continued this quarter. Personnel completed the designation of aggregates and developed a crosswalk of all PRSs with proposed consolidated PRS numbers, operable units, watersheds, and aggregates. Members of the team continued integrating the ER Project's aggregation strategy with LANL's "Draft Watershed Management Plan" (LANL 1999, 62920) and "Hydrogeologic Workplan" (LANL 1998, 59599). A presentation on the final draft of aggregate maps and preliminary prioritization efforts was given to NMED, HRMB, DOE Oversight Bureau, and the Surface Water Quality Bureau. The team has received written comments from NMED regarding the aggregation strategy and prioritization. Team members also presented the aggregation strategy to the Deputy Laboratory Director for Laboratory Operations. The presentation included a discussion of using the newly established Environmental Working Group as the filtering mechanism for resolving ownership and hand-off issues before going to the Operations Working Group and Facility Management Council, who will most likely be the joint decision-making body.

The team provided regulatory support for the NTISV Project at TA-21. During a meeting with NMED regarding the project, NMED agreed that the "cold" demonstration could proceed as a VCM "feasibility demonstration" to treat the diesel-contaminated soil at the site. A member of the Policy and Guidance Team reviewed the VCM plan for the cold demonstration and accompanied NMED staff on a tour of the NTISV site at TA-21.

Other activities included the following:

- developed a straw-man CMS schedule for focus areas to use as a template when planning CMS work;
- met with DOE-Albuquerque Operations Office and Sandia National Laboratories/New Mexico to discuss strategies for consolidation of PRSs and the annual unit audit;
- met with personnel from Sandia Laboratories/NM to discuss topics including the relationship between groundwater and surface water; institutional controls for exposure control; PCBs; and polycyclic aromatic hydrocarbons;
- reviewed and provided comments on the CMS monthly report for the TA-16-260 outfall, the ER Project's standard operating procedure for chain of custody, and the land transfer report;
- continued reviewing, evaluating, and redrafting existing ER policies, as necessary; and
- provided support for the PRS consolidation effort and for work-off efforts.

2.5.2.4 Regulatory Integration and Operations Team

The Regulatory Integration and Operations Team submitted documentation to DOE-LAO regarding 37 NFA Criteria 1, 2, and 3 PRSs selected for work off in FY 1999; of these, 36 are HSWA units to be included in a Request for Permit Modification.

Members of the team worked together to complete the evaluation of approximately 130 NFA Criterion 4 PRSs identified for work off this fiscal year. They also evaluated approximately 362 NFA Criterion 5 PRSs identified for work off; of these, 257 PRSs were submitted to personnel from the Analysis and Assessment Focus Area for Ecorisk/ARAR evaluation, and 105 PRSs were deferred pending further investigation and/or cleanup.

Consolidation efforts continued this quarter. Members of the team researched sites for consolidation, completed worksheets, and prepared an initial deliverable in response to NMED's call for information to support an annual unit audit. Following NMED review, efforts involved working closely with NMED, DOE, and team leaders to resolve discrepancies, provide additional information (rationale, maps, etc.), select an appropriate numbering system for the consolidated units, and prepare a final deliverable table summarizing the results of the consolidation effort. Approximately 220 PRSs were consolidated into 45 in an effort to expedite ER remediation activity. The effort resulted in an overall reduction from 1098 HSWA PRSs to 684 HSWA PRSs.

Other general activities for the quarter include the following:

- reviewed and compiled past RSI and NOD response commitments;
- began revising LANL-ER-AP-4.01, "Identification, Documentation, and Reporting of Newly Discovered Potential Release Sites for the Environmental Restoration Project";
- began investigating the applicability of the "contained-in" rule for characterization of certain MDA P wastes (the contained-in policy defines when some contaminated media can be considered to no longer contain hazardous waste);
- participated in decision and document peer review;
- participated in a readiness review for the cold NTISV demonstration;
- represented ER at the Interagency Wildfire Management Team meetings;
- represented ER on the focus team for development of the Laboratory Implementation Requirement (LIR 404-30-02.0) and the Laboratory Implementation Guidelines addressing National Environmental Policy Act (NEPA) and biological and cultural resources;
- researched the background and status of ER/NEPA compliance, and gathered material in preparation for drafting an ER/NEPA Policy Statement; and
- provided regulatory reviews of documents, including SAPS, responses to RSIs, procedures, a technical paper, draft 20 NMAC 6.3, the pollution prevention plan for MDA P, and other ER Project documents.

Clean Water Compliance Activities. The Solid Waste Management Unit (SWMU) Working Group met monthly with Los Alamos County, DOE, and NMED representatives to discuss issues associated with townsite SWMUS. These issues included work at the Los Alamos Inn, the land transfer parcels, the VCA at SWMU 0-019 (Central Wastewater Treatment Facility), the Airport landfill and ash/incinerator pile, work at SWMU 0-030(g) (septic system near the parking lot at the old catholic church), and the TA-21 NTISV Project.

Work continued on BMPs. Personnel worked with a contractor regarding BMP installation, inspection, and maintenance for the Remedial Actions Focus Area and, before fieldwork, resolved issues associated with health and safety plans and landlord tenant agreements. The ER Project prepared an updated list of PRSs where BMPs are to be installed, inspected, and maintained by the ER Project and submitted the list as well as the semi-annual report describing the findings of the last quarterly inspection to DOE-LAAO. This quarter, inspections of BMPs at approximately 30 PRSs were completed. A representative met with ER team leaders and ESH-18 personnel to discuss ER Project or facility management unit ownership of BMPs. Establishing

responsibility for inspection and maintenance of the BMPs will impact roadmapping and baseline activities.

Other activities included the following:

- teaming with the Surface Water Decision Logic Team to prepare a coordinated response from the ER Project regarding the "Draft Watershed Management Plan";
- discussing with decontamination and decommissioning personnel the storm water management issues related to work to be performed at TA-21;
- participating in meetings with the Surface Water Assessment Team to discuss firing site and industrial site PRSs that scored in the 40–60 range on the surface water site assessments; and
- supporting the Canyons Focus Area in preparing a Notice of Intent to discharge at regional well R-25, located at TA-16 south of Cañon de Valle; the ER Project received written approval from NMED to discharge.

Waste Management Activities. The ER Project participated in a Solid Waste Operations program to recycle empty used waste drums. During the first two quarters of FY 1999 the ER Project inspected and shipped 400 empty drums for refurbishment and reuse. This project avoided more than 100 cubic yards of waste.

Team members provided regulatory reviews and comments on five waste characterization strategy forms and participated in MDA P meetings to provide regulatory assistance on issues regarding environmental media and decontamination water.

Natural Resource Damage Assessment (NRDA) Activities. A representative of the Regulatory and Integrations Operations Team attended the NRDA Natural Resource Trustee Council meeting held to revisit the memorandum of agreement and to outline the FY1999 scope of work. At the meeting, the following two draft documents were discussed: the Preliminary Assessment of Natural Resource Indicators and Service Losses for LANL, and the Protocol for Integrating Natural Resource Damage Assessment and Restoration Process with ER Project Cleanup at LANL. These documents will be reviewed, revised, and later issued by the council upon Trustee Council consensus.

In addition, the NRDA representative was responsible for providing packets of ER Project documentation for trustees to consider as they make determinations regarding restoration alternatives. Included in the packets were relevant ER Project documents as well as maps showing locations of PRSs, sampling information, and contaminant distribution of radioactive contamination and metals (by Laboratory watershed).

Support to Operational Focus Areas. Personnel from the Regulatory Integration and Operations Team who are deployed to the operational focus areas to provide support on regulatory issues assisted with the following activities this quarter.

Canyons Activities. A deployed member of the team assisted with preparations for the land application of purge water from regional well R-25, which began March 31, 1999. Under the NMED Notice of Intent for R-25, approximately 42,000 gallons were land-applied using a sprinkler system.

MDA Activities. The deployed team member attended the TA-54 RFI meeting to discuss the pending RFI report for TA-54 and scheduled a meeting with NMED to discuss analytical results for MDAs B and U to determine if additional drilling is necessary. This team member also conducted regulatory reviews and provided comments on the VCM plan for the NTISV cold demonstration project at PRS 21-027(d) and on two draft sections of the RFI report for TA-54.

Remedial Actions Activities. Activities included providing technical input into the TA-53 RSI response, compiling regulatory history for TA-16 V-Site PRSs, conducting site visits to PRS 0-019 and PRSs associated with Aggregate 73-2, and attending various meetings with NMED. Decision and document peer reviews were provided for two SAPs four VCA plans, and one VCM report for the Remedial Actions Focus Area.

3.0 REFERENCES

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