



University of California  
Environmental Restoration Project, MS M992  
Los Alamos, New Mexico 87545  
505-667-0808/FAX 505-665-4747



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

*Barbara  
Ron*

Date: May 29, 1996  
Refer to: EM/R-96-310



Mr. Leo Hengstenberg  
103 DP Road  
Los Alamos, NM 87544

**SUBJECT: RESURFACING OF YOUR DRIVEWAY**

Dear Mr. Hengstenberg:

The Department of Energy and the Los Alamos National Laboratory's Environmental Restoration Project have determined that the investigation of Septic Tank 0-030(b), which is located on your property, warrants the resurfacing of your driveway.

The Laboratory has engaged in the process of determining a reasonable cost for the restoration of your pavement. The process included several unsuccessful attempts to obtain a bid from the contractor who originally installed your driveway. It was therefore necessary to obtain a bid from an alternate contractor (see enclosure). Any contractor you retain for the subject work may charge up to \$5,620.00 as indicated on the enclosed bid against a Laboratory purchase order that will be issued for this work.

Please call Garry Allen at (505) 667-3394 to obtain the purchase order number when you are ready to engage your resurfacing activities. You may also contact Mr. Allen or Bonnie Koch at (505) 665-7202, if you have any questions regarding this letter.

Sincerely,

*JG*  
*G. Allen*  
for Jorg Jansen, Program Manager  
LANL/ER Project

Sincerely,

*B. Koch*  
for Theodore J. Taylor, Program Manager  
DOE/LAAO

JJ/TT/bp

Enclosure: Bid from Alternate Contractor

Cy (w/ enc.):

- G. Allen, CST-18, MS E525
- B. Garcia, NMED-HRMB
- D. Griswold, AL-ERD, MS A906
- B. Koch, LAAO, MS A316
- J. Harry, EES-5, MS M992
- B. Hoditschek, NMED-HRMB
- R. Kern, NMED-HRMB
- N. Naraine, DOE-HQ, EM-453
- D. Neleigh, EPA, R.6, 6PD-N
- T. Taylor, LAAO, MS A316

- J. Vozella, LAAO, MS A316
- N. Weber, NMED-AIP, MS J993
- J. White, ESH-19, MS K490
- S. Yanicak, NMED-AIP, MS J993
- RPF, MS M707



6852

TL

Mr. Leo Hengstenberg  
EM/ER:96-310

-2-

May 29, 1996

Cy (w/o enc.):

T. Baca, EM, MS J591

T. Glatzmaier, DDEES/ER, MS M992

D. McInroy, EM/ER, MS M992

G. Rael, AL-ERD, MS A906

W. Spurgeon, DOE-HQ, EM-453

EM/ER File, MS M992

pratt\_allyn\_r@lanl.gov

## **FACT SHEET FOR CANYONS INVESTIGATION**

### **Description of Field Unit 4**

4/10/96  
The canyons within Field Unit 4 contain widespread low-level contamination derived from direct discharges from mesa top SWMUs, from sediments and surface waters transported from mesa top release sites (PRSs), and from direct releases at canyon floor SWMUs. The canyons are important pathways for the transport of contaminants across American Indian, private, and public land and eventually contribute sediments, surface water, and ground water to the Rio Grande.

Field Unit 4 includes three operable units (OUs): OU 1098, OU 1129, and OU 1049. OU 1049 contains 19 canyon systems which have an aggregate length of 110 miles of canyon and drainage systems on property controlled by the Laboratory. The canyons study area is bounded by the western Laboratory border to the Rio Grande, the canyon floors laterally from the stream channel to the modern floodplain deposits, and the stream channel vertically to the deepest ground water bodies affected by regulatorially defined limits of contaminants.

### **Regulatory Requirements**

The canyon's investigations will evaluate the potential impacts of Laboratory-derived contaminants within the major canyon systems of the Pajarito Plateau. These canyon investigations are a regulatory requirement of Module VIII, Sections I.5 and Q, tasks 1 through 5, of the HSWA Permit (May 19, 1994), which was issued by the Environmental Protection Agency (EPA) to address contamination problems specific to the Laboratory. Specifically, the HSWA Permit requires the canyon's investigations is to:

- determine the potential for contaminant transport into or within watersheds;
- evaluate human health risks and ecological impacts associated with the presence of contaminants;
- refine conceptual models for contaminant transport;
- assess the potential for interconnections between ground water in alluvium, perched intermediate zones, and the main aquifer; and
- assess the projected impact that contaminants may have on off-site receptors and the Rio Grande.

These investigations deal with of affected media within the canyon systems rather than the investigation of SWMUs. As such, the technical approach is

significantly different from previous RFI work plans that investigated solid waste management units (SWMUs).

### **Technical Approach**

Canyon characterization activities will provide data for a present-day snapshot of risk based on present-day contaminant levels, will evaluate the potential impact of contaminant transport into and within the watersheds, and subsequently will transition to a long-term monitoring program. The characterization data will be used to develop risk scenarios based on Laboratory use, recreational land use, traditional use by American Indians, and residential use at Totavi and Otowi Houses.

Two investigation paths are proposed:

- sampling and analysis of surface sediments on the canyon floors to evaluate surface exposure pathways and
- sampling and analysis of surface and ground water to assess the transport pathways and potential impacts on the different zones of saturation.

The investigation of surface sediments will identify the human and ecological risks associated with the present-day distribution of contaminants and provide information about the processes controlling contaminant distribution. This understanding is gained through an initial stage of biased sampling and broad-based analyses. The initial sampling strategy will use radiological surveys and geomorphologic mapping to give a broad view of the distribution of contaminants within surface sediments. Discrete sampling points will be identified based on radiological screening surveys and geomorphologic features. After the lists of contaminants are defined, subsequent investigation will limit analyses to the limited suite of known contaminants. Sediment sampling is largely restricted to post-1943 canyon deposits in both the active channels and the floodplains. Furthermore, task/site work plans will focus on identifying areas most likely to contain contaminants, determining the geomorphic settings where the greatest contaminant inventories could occur (post-1943 sediments), and assessing the susceptibility of the contaminants to redistribution in sediments and dust. The iterative portions of the technical approach will allow the investigators to tune the characterization requirements to observed conditions in the field. This approach will ultimately lead to a well-defined and quantitative understanding of the natural systems involved in canyon contaminant fate and transport.

The investigation of surface and ground water will also focus on areas most likely to contain contaminants, such as the near-surface alluvial and intermediate perched zone ground waters. The ephemeral surface waters of the canyons will be collected and analyzed for contaminants during times of surface

flow (during spring runoff and summer monsoons). Ground waters will be sampled by drilling boreholes that intersect the ground water bodies. Studies of the deep unsaturated zone and the main aquifer will be conducted if (1) the intermediate perched zones contain contaminants above maximum concentration limits for drinking water, (2) the data from nearby main aquifer wells indicate the presence of contaminants, or (3) the combined historical data and investigation results suggest that the alluvium, intermediate perched zones, and main aquifer are interconnected. In all sampling, the selection criteria for location and analytical content are designed to develop the best possible data set at the most reasonable cost. Results of the ground water investigations will be used for locating and designing ground water monitoring systems.

### **Public Involvement**

Field Unit 4 conducts informal and formal meetings with the general public, the neighboring Indian Pueblos, and regulators. The purpose of these meetings is to involve these groups with the design and implementation of Field Unit 4 activities. These interactions result in suggested approaches for the task/site work plans. In addition, the ER Project has employed Indian Pueblo members to work on the field characterization teams. The intent of these interactions is to provide avenues for the American Indian perspective to become an integral part of the preparation and execution of the canyons task/site work plans.

### **Canyons Priorities and Schedules**

<u>Priority</u>	<u>Canyon Group</u>	<u>Task/Site Work Plan Date</u>
1	Los Alamos, DP, Pueblo, Acid	November, 1995
2	Mortandad	September, 1997
3	Pajarito, Twomile, Threemile	November, 1998
4	Canada del Buey, Sandia	October, 1999
5	Guaje, Bayo, Barrancas, Rendija	April, 2000
6	Water	October, 2001
7	Ancho, Indio, Chaquehui	May, 2002
8	Portillo, Fence	December, 2003