

Los Alamos National Laboratory

ENVIRONMENTAL RESTORATION

University of California
Environmental Restoration, MS M992
Los Alamos, New Mexico 87544
505-665-4557
FAX 505-665-4747

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



Date: **MAR 30 1995**
Refer to: EM/ER:95-120

Mr. William K. Honker
Hazardous Waste Management Division
U.S. Environmental Protection Agency
Region 6
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

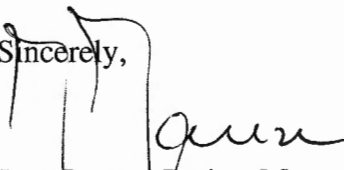
Dear Mr. Honker:

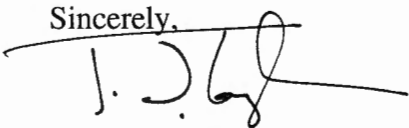
*NOD: 36-004(d) + 36-006 SAP
RESPONSE*

**SUBJECT: NOTICE OF DEFICIENCY (NOD) RESPONSE FOR OPERABLE
UNIT 1130 RESOURCE CONSERVATION AND
RECOVERY ACT FACILITY INVESTIGATION (RFI) WORK
PLAN WORK BREAKDOWN STRUCTURE NUMBER 4.2.6.1.19**

Enclosed is the NOD response requesting a sampling plan for the RFI Work Plan for Operable Unit 1130. The final response is due to the Environmental Protection Agency (EPA) on Friday, March 31, 1995. The signed certification form is also attached.

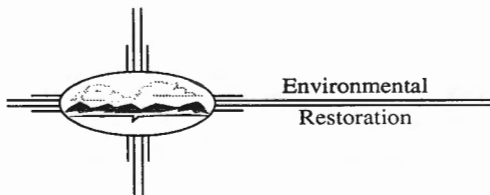
If you have any questions about this material, please contact Gene Gould of my staff at (505) 667-0402 or Everett Trollinger at (505) 667-5801.

Sincerely,

Jorg Jansen, Project Manager
Environmental Restoration

Sincerely,

Theodore J. Taylor, Program Manager
Los Alamos Area Office

JJ/TT/plp

Enclosures: NOD Response for OU 1130 Resource Conservation RFI Work Plan
Certification Form



HSWA LANL 7/1130/36/06-004(d) + 36-006

TK

MAR 30 1995

- Cy: T. Baca, EM-DO, MS J591, w/o enc.
G. Gould, ESA-DE, MS G787, w/o encl.
W. Spurgeon, EM-453, HQ, w/o encl.
J. Vozella, AAMEP, LAAO, MS A316 w/o enc.
H. Decker, AIP, NMED, MS J993
B. Garcia, NMED
D. Griswold, ERD, AL, MS A906
J. Jansen, EM/ER, MS M992
J. Levings, ERPO-AL, MS A906
E. Merrill, EM-453, HQ
B. Swanton, HRMB, NMED
T. Taylor, AAMEP, LAAO, MS A316
J. White, ESH-19, MS K498
EM/ER File, MS M992
RPF, MS M707



field UNIT-2
TA-36-OU-1130

Ron K
Barbara
Teri
Susan


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 gather and evaluate 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:

Response to NOD for RFI Work Plan for OU 1130

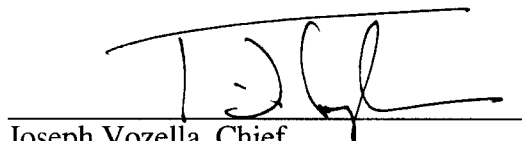
Name:


Tom Baca, Program Director
Environmental Management
Los Alamos National Laboratory

Date:

3-30-95

Name:


Joseph Vozella, Chief
Environment, Safety, and Health Branch
DOE-Los Alamos Area Office

Date:

3/30/95

or

Theodore J. Taylor
Program Manager
Environmental Restoration Program
DOE-Los Alamos Area Office

**Response to EPA Comments Regarding
the January 1995 Sampling Plans for
Operable Unit 1130
SWMUs 36-004(d) and 36-006**

General Comments:

- 1. LANL needs to provide a schedule for both units for fieldwork (initiation and termination) and submittal of an RFI report.***

Discussion

Solid Waste Management Units (SWMU) 36-004(d) and 36-006 are located within active firing sites. For this reason, the RFI Work Plan for OU 1130 proposed the deferral of the site investigations until the firing sites were decommissioned. Therefore, these SWMUs were not included in the 1994 sampling effort. However, as requested by the EPA, the investigations will no longer be deferred and the units will be addressed during the 1995 sampling effort. LANL has included an additional section to each sampling plan of the anticipated schedules.

Proposed Text Changes

SWMU 36-004(d), page 10, revise as follows:

“6.0 SCHEDULE

LANL anticipates fieldwork to begin at SWMU 36-004(d) Skunk Works, during August, 1995. LANL firing schedules at TA-36 are determined weekly; therefore, the exact schedule for field activities cannot be established. Fieldwork at SWMU 36-004(d) is expected to last 5 days. Therefore, allowing for interruptions and limited access due to firing activities, fieldwork should be completed at the end of August, 1995. The RFI report for 36-004(d) Skunk Works, will be submitted on March 31,1996.”

SWMU 36-006, page 10, revise as follows:

“6.0 SCHEDULE

LANL anticipates fieldwork to begin at SWMU 36-006 Surface Disposal Area, during August, 1995. LANL firing schedules at TA-36 are determined weekly; therefore, the exact schedule for field activities cannot be established. Fieldwork at SWMU 36-006 is expected to last approximately 3 days. Therefore, allowing for interruptions and limited access due to firing activities, fieldwork should be completed at the end of August, 1995. The RFI report for SWMU 36-006 Surface Disposal Area, will be submitted on March 31,1996.”

- 2. Both sampling plans indicate that data gathered will be compared to screening action levels to determine if contaminants are present at levels of concern. LANL will need to compare with action levels to determine if additional action such as an expedited cleanup or Corrective Measure Study are necessary. LANL will also need to compare data with background information for inorganics to determine if the extent of contamination is bounded.***

Discussion

Each sampling plan (Section 3.0, Page 6 of each plan) indicates that the resultant data will be compared to screening action levels (SAL). The plans state that if potential contaminants of concern (PCOC) are identified above SALs, further investigations may be warranted to assess the extent of contamination and to develop corrective action strategies.

LANL concurs with the EPA's request that the inorganic data will also be compared to background information. However, as these are reconnaissance sampling efforts, the objective is to determine the presence/absence of PCOCs rather than contaminant boundaries. As stated above, extent of contamination will be addressed under subsequent field efforts should results from the Phase I activities indicate elevated levels of contaminants of concern (COC).

Proposed Text Changes

SWMU 36-004(d), Section 3.0, page 6, paragraph 2, revise as follows:

" If RFI sampling indicates that concentrations of PCOCs are below screening action levels (**SAL**) or **background concentrations**, no further action (NFA) will be proposed for Skunk Works. If **elevated concentrations of PCOCs are detected**, consideration will be given to a Phase II investigation and/or a baseline risk assessment.

4.0 DATA NEEDS AND DATA QUALITY OBJECTIVES

The primary data requirements of Phase I investigations at the Skunk Works are to determine if PCOCs are present above screening action levels or **background values** at the locations of probable maximum contamination."

SWMU 36-006, Section 3.0, page 6, paragraph 2, line 1, revise as follows:

"The subject of this RFI sampling is to determine if contaminants are present in soil and sediments that are associated with the abandoned solid waste debris. If contaminants of concern are identified above screening action levels (**SAL**), or **background concentrations**, further investigations may be needed to assess the extent of contamination and to develop further corrective action strategies.... If RFI sampling indicates that PCOCs are below screening action levels or **background values**, no further action (NFA) for the Surface Disposal Area, as a separate PRS from the firing sites, will be proposed."

Specific Comments:

SWMU 36-004(d) - 5.3 Sampling, p.8:

- 3. LANL needs to provide a figure detailing the area to be sampled. This should include the firing site, battery disposal area, and drainage system. More than one figure may be required to provide the detail required.***

Discussion

LANL has prepared two additional figures. Figure 1-2 is replaced with a more detailed site sketch by the same title. Figure 2-2, titled PRS-36-004(d) Skunk Works Area of Investigation, has been added to provide greater detail of the area of investigation.

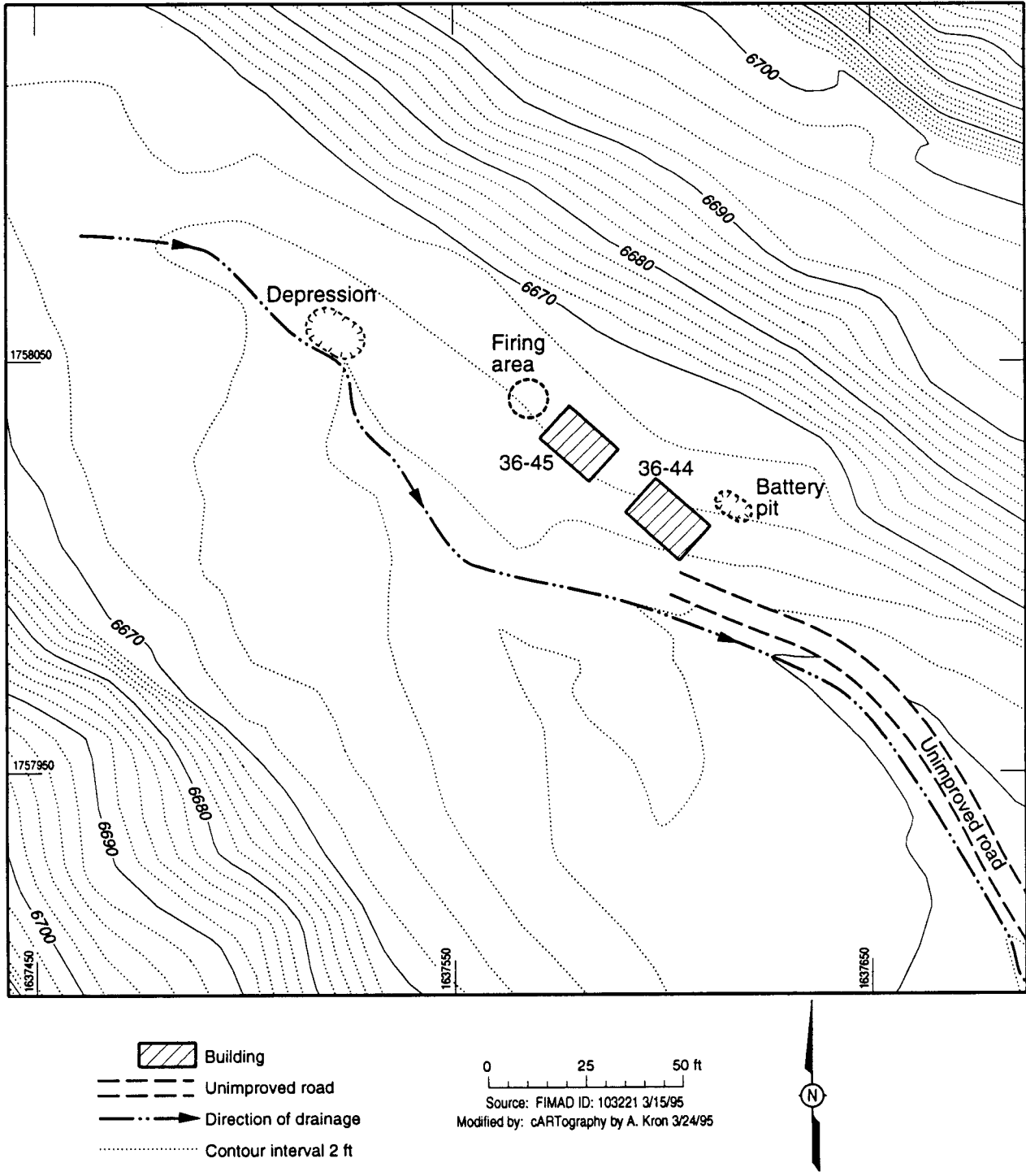


Figure 1-2. Topographic map of present day Skunk Works.

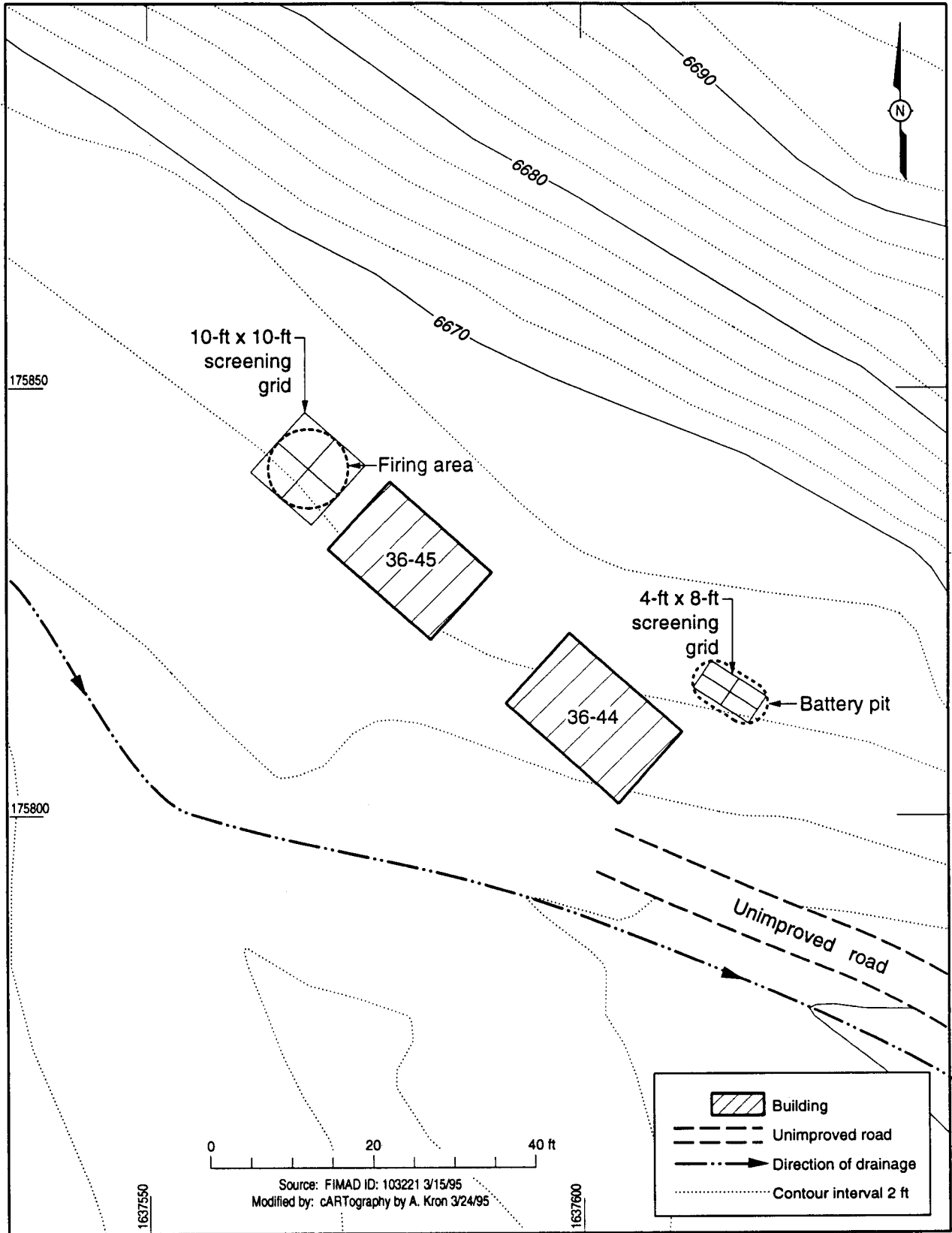


Figure 2-2. Areas of investigation for PRS 36-004(d), Skunk Works.

4. **LANL needs to elaborate on the size of the quadrants which are going to be field screened or sampled. These quadrants should be indicated on the above figure.**

Discussion

The sampling plan text has been expanded to clarify the nature of the quadrants. The quadrants have been indicated on Figure 2-2.

Proposed Text Changes

Section 5.3, page 8, paragraph 3, revise as follows:

"Field screening sampling of the firing area will be conducted by dividing the shot area into quadrants. The former firing area is approximately 10 ft x 10 ft. The primary detonation point was situated in the center of this area. Therefore, the quadrants, each measuring 5 ft x 5 ft, will emanate in four directions from the central detonation point. A biased screening sample will be collected from each quadrant as well as the center of the firing area. The grid is shown on Figure 2-2, PRS 36-004(d), Skunk Works Area of Investigation."

Section 5.3, page 8, paragraph 4, revise as follows:

"A similar strategy will be used at the battery pit. The pit is approximately 4 ft wide x 8 ft long. The floor of the pit will be partitioned into four intersecting quadrants each measuring 2 ft wide x 4 ft long (Figure 2-2). Based on visual indicators, biased screening samples will be collected from each quadrant as well as the center of the pit. The biased screening samples collected from the bottom of the pit will be analyzed for HE (using a spot-test kit), lead (using XRF), and pH (using a soil field kit) -tested for HE, analyzed for lead using LIBS, and pH tested. Based on field screening results, a surface soil sample (from the pit bottom) and a subsurface soil sample will be collected from the location of highest contamination. The metals aliquot will be omitted from the subsurface sample if LIBS analysis indicates lead is not present above screening action levels."

5. **LANL needs to provide additional information on the Laser-induced breakdown spectroscopy (LIBS) method such as publications on use and application. What is the accuracy of this method as a field screening tool for inorganics? The January 1995 edition of "Environmental Technologies" by LANL that this is a developing rather than proven technology.**

Discussion

Laser-induced breakdown spectroscopy (LIBS) for field screening purposed at LANL remains in the development stage. The Standard Operating Procedures (SOP) is currently being established. As stated on page 9, Table 5-1, LIBS will not be utilized if the SOP is not in place. In each case that LIBS is specified in the sampling plan, x-ray fluorescence spectroscopy (XRF) will be substituted for the field screening of samples for inorganics. The term LIBS will be replaced with XRF to reflect the substitution. The XRF will be used as a field screening tool; therefore, the subsurface soil sample collected from the battery pit will be submitted for metals analysis regardless of the XRF results. This change is reflected in the above revised paragraph by the deletion of the last sentence.

SWMU 36-006:

6. ***What is the approximate average thickness of the material which forms this surface disposal area? How thick is the material at the edge of the canyon and at the base of the canyon? Can LANL provide a rough schematic of the profile of this surface disposal area?***

Discussion

The approximate thickness of debris at SWMU 36-006 Surface Disposal Area varies significantly throughout the site. Figure 1-2 has been modified to show the spatial variation. A cross section has been developed, Figure 1-3, PRS 36-006 Schematic Profile of A-A', to provide a rough profile of the area where the greatest volume of material is located.

7. ***5.3 Sampling - Sampling plans for surface and subsurface samples within the surface disposal area are unclear. If the subsurface migration scenarios details that the primary contaminants will percolate along the soil/tuff interface, why is this interface not being sampled? The surface samples proposed do not appear to meet the migration scenario, and subsurface samples along the base of the disposal area would provide better information.***

Discussion

As stated under Section 2.2, Potential Pathways and Exposure Routes, page 5, and Section 4.0 Data Needs and Data Quality Objectives, page 6, the most likely release mechanism for PCOCs is via erosion of the debris. Migration of the PCOCs would then occur along the surface water pathway. The subsurface migration pathway is considered a secondary migration pathway. Within this secondary migration pathway, percolation and migration of PCOCs along the soil/tuff interface is the most likely scenario. The primary migration pathway (surface water pathway) will be addressed by collecting samples from the surface soils and sediments. LANL concurs with the EPA's concern that the proposed sampling strategy may not provide sufficient information regarding the secondary migration pathway (the soil/tuff interface). Therefore, an additional soil/tuff interface sample has been added to the sampling plan. The text has been revised to clarify the sampling strategy.

Proposed Text Changes

Section 5.3 , Sampling, page 7, revise as follows:

"A total of ~~five~~ **six** samples ~~locations~~ will be collected for laboratory analysis ~~under designated for this reconnaissance investigation of the Surface Disposal Area (Table 5-1).~~ Two biased surface sample locations ~~within~~ **from the base of** the main disposal area will be chosen. ~~These sample areas will be obtained by using best professional judgment to select five preliminary locations for field screening~~ **Initially, five field screening locations will be selected based on best professional judgment; these locations** ~~The preliminary locations will be screened for explosives (spot test), gross alpha, beta, and gamma (gross radiation detector), and relevant metals (Laser-Induced Spectroscopy, LIBS) (XRF).~~ ~~The preliminary field screening~~ **locations** exhibiting the highest positive screening results will then be sampled for laboratory analysis. If no field indicators are found, samples will be obtained using best professional judgment to determine the locations most likely to receive contaminants. Surface samples will be obtained from a depth of no greater than 6 in. **Two biased subsurface soil samples will be collected at the base of the main disposal area. The sample locations will be chosen based on visual indicators, field screening results, and best professional judgment. The samples will be collected from the soil/tuff interface**

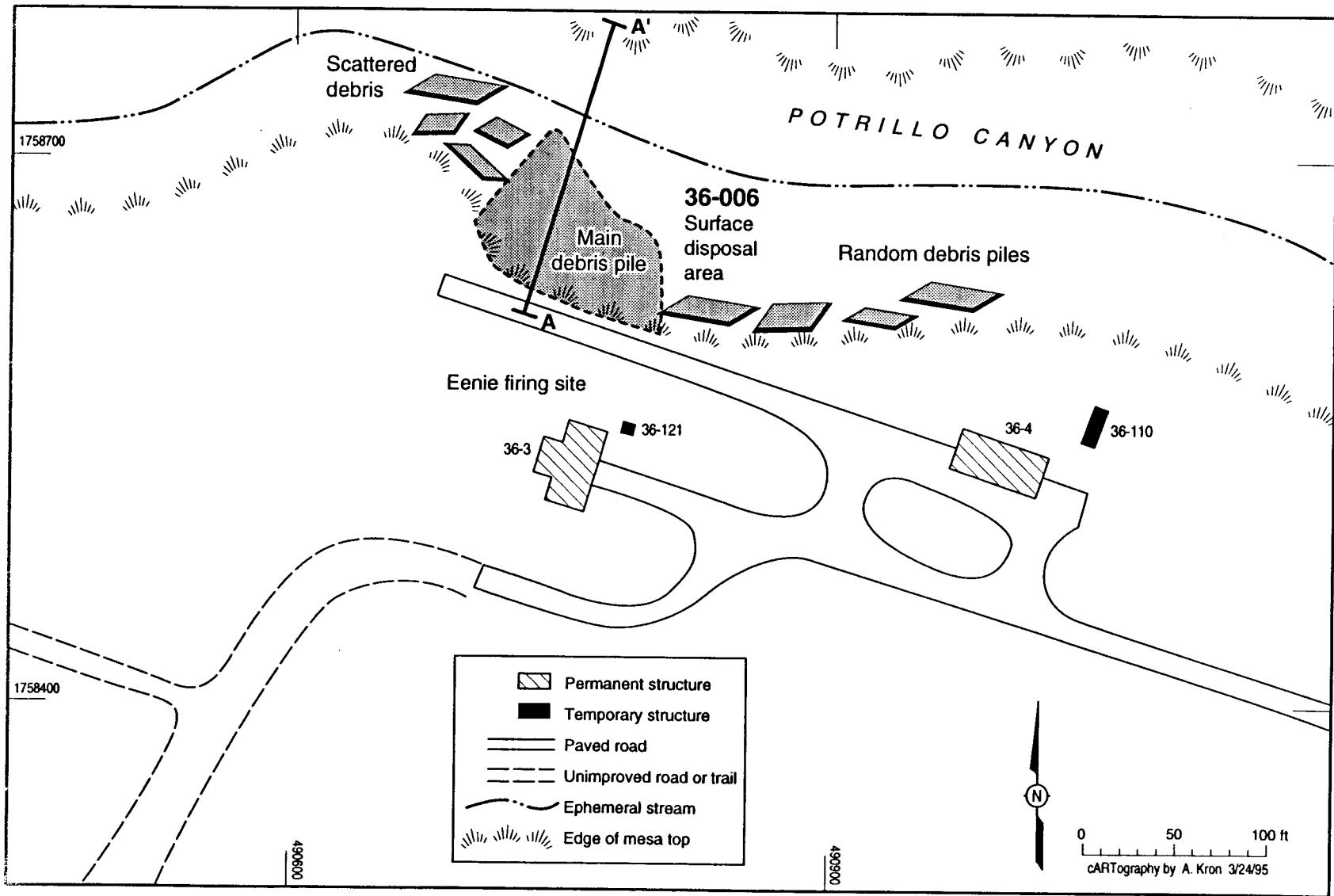


Figure 1-2. Location of PRS 36-006.

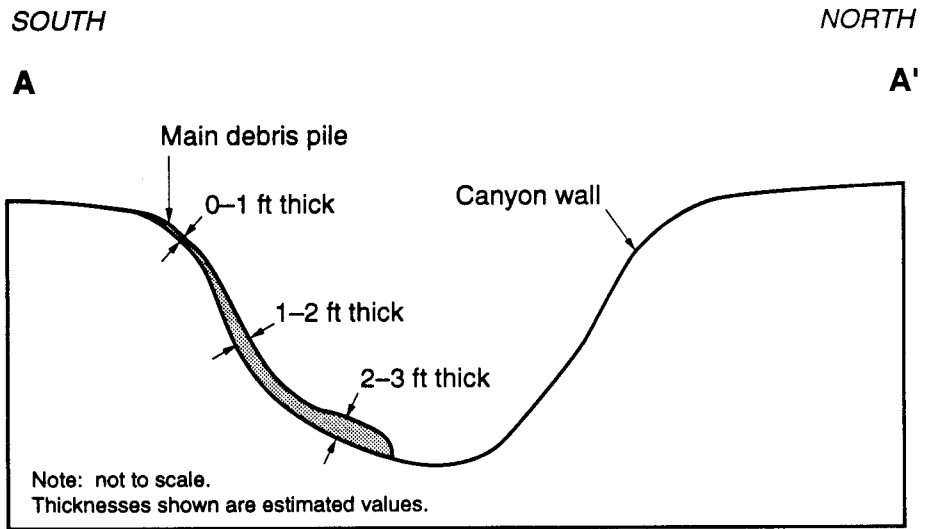


Figure 1-3. Schematic profile A-A' at PRS 36-006, main debris pile.

to address potential subsurface migration of PCOCs. One subsurface soil sample will be collected from the surface soil sample location which exhibits the greatest potential to have received contaminants. It is recognized that the surface soil sample locations may not adequately define the appropriate location for biased sampling of the subsurface. Therefore, visual indicators and best professional judgment will be utilized to confirm the subsurface soil sample location."