

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



Date: August 14, 1998
 Refer to: EM/ER:98-288

Dr. Robert S. Dinwiddie
 NMED-HRMB
 P.O. Box 26110
 Santa Fe, NM 87502

SUBJECT: RESPONSE TO RSI FOR THE SAP FOR PRS 0-030(g) (FORMER OU 1071, FU 1)

Dear Dr. Dinwiddie:

In response to your August 7, 1998, Request for Supplemental Information (RSI) for the Sampling and Analysis Plan (SAP) for Potential Release Site (PRS) 0-030(g), the Los Alamos National Laboratory Environmental Restoration Project has enclosed Revision 1 (August 1998) of the referenced document. All comments outlined in Enclosure A of the RSI are currently incorporated into the revised SAP, specifically:

- the Laboratory has revised the statement addressing the Hazardous and Radioactive Materials Bureau's concerns on page 1, bullet 2, to add human health risk assessment;
- the Laboratory has revised the list of analytes to include americium-241; and
- the Laboratory has revised all references to this particular site in the SAP as PRS 0-030(g).

We appreciate your expedited review of this revised SAP so that the results of these sampling activities can be shared with the private property owner and planned site development can proceed as scheduled. If you have any questions, or require additional information, please contact Dave McInroy at (505) 667-0819 or Joe Mose at (505) 667-5808.

Sincerely,

Julie A. Canepa, Program Manager
 Environmental Restoration

JC/TT/VR/dm

Sincerely,

Theodore J. Taylor, Program Manager
 DOE/LAO

Enclosure: SAP for PRS 0-030(g) (Former OU 1071, FU 1)



H/SWA LANL 1/1071/0/0-030(g)

TL

Cy (w/enc.):

D. McInroy, EM/ER, MS M992
J. Mose, LAAO, MS A316
W. Neff, CST-7, MS E525
D. Neleigh, EPA, R.6, 6PD-N
J. Newlin, CST-7, MS M992
C. Rodriguez, CIO/ER, MS M992
S. Rae, ESH-18, MS K497
T. Trujillo, AL-ERD, MS A906
J. White, ESH-19, MS K490
B. Garcia, NMED-HRMB
M. Leavitt, NMED-GWQB
J. Parker, NMED-HRMB
G. Saums, NMED-SWQB
S. Yanicak, NMED-AIP, MS J993
EM/ER File (CT# C498), MS M992
RPF, MS M707

Information Only (w/o enc.):

T. Baca, EM, MS J591
A. Dorries, TSA-10, MS M992
T. George, EM/ER, MS M992
T. Longo, DOE-HQ, EM-453
J. Plum, LAAO, MS A316
G. Rael, AL-ERD, MS A906
V. Rhodes, Aurora, MS M992
P. Schumann, ESH-19, MS M992
J. Vozella, LAAO, MS A316
EM/ER File, MS M992

**SAMPLING AND ANALYSIS PLAN FOR
PRS 0-030(g),
FORMER LOCATION OF THE SEPTIC TANK AND VITRIFIED CLAY PIPE**

Los Alamos National Laboratory

**Environmental
Restoration
Project**

**Revision 1
August 1998**

1.0 INTRODUCTION AND SCOPE

This sampling and analysis plan (SAP) addresses the final confirmation sampling activities associated with the former location of Solid Waste Management Unit (SWMU) 0-030(g), septic tank #6, which was removed as part of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). The site is located in former Technical Area (TA) 0, along the northern perimeter of Town Site Mesa and near the confluence of Acid Canyon. A drain line, also removed during RFI field activities, extended north to an outfall on the rim of a small drainage channel that is a tributary of upper Acid Canyon.

SWMU 0-030(g) is recommended for no further action based on the results of the RFI, which are documented in the RFI Report for SWMU 0-030(g) (LANL, September 12, 1995). However, the sampling activities proposed in this plan address concerns expressed by the New Mexico Environment Department (NMED) Hazardous and Radioactive Material Bureau (HRMB). These concerns include:

- nature and extent of contamination beneath the former septic tank, vitrified clay pipe (VCP) and outfall area have not been adequately defined, and
- human health and ecotoxicological risk assessment using approved methodologies have not been conducted for the site (including the outfall area).

These sampling activities outline below focus on collecting final confirmation samples from locations beneath the former septic tank and VCP; this information will be incorporated into a Final SAP (using the annotated outline) that addresses the outfall area as well. The purpose of this abridged SAP is to expedite the sampling effort associated with the septic tank and VCP, which are located on private property, so that field work can be completed prior to development of the site.

2.0 RCRA FACILITY INVESTIGATION RESULTS

2.1 Field Work

In 1993, an RFI was conducted at SWMU 0-030(g) and the associated outfall. This field investigation included:

- excavation and removal of the septic tank, septic tank contents, and drain line
- excavation and removal of soil underlying the septic tank and drain line
- collecting samples of septic tank contents
- collecting confirmation samples from the soil/tuff underlying the locations of the removed septic tank, drain line, and associated soil, and
- collecting samples from soil/sediments located within the outfall drainage.

The results of these field activities, data evaluation, and risk assessment resulting in a recommendation for NFA are documented in the RFI Report for SWMU 0-030(g).

2.2 Reporting Requirements

The reporting requirements associated with the RFI at SWMU 0-030(g) are summarized chronologically in Table 2.2-1.

**TABLE 2.2-1
CHRONOLOGICAL SUMMARY OF REPORTING REQUIREMENTS**

Document	Date	Summary
RFI Report for SWMU 0-030(g) (LANL, September 12, 1995)	September 1995	LANL ER recommends SWMU 0-030(g) for NFA.
NOD* (NMED, July 1, 1996)	July 1996	HRMB outlines deficiencies, including conducting an Ecological Risk Assessment at SWMU 0-030(g) and the associated outfall drainage using NMED guidance within 90 days of issuance of final Ecological Risk Assessment guidance.
NOD Response (LANL, March 6, 1997)	March 1997	LANL ER responds to deficiencies and agrees to conduct and submit the Ecological Risk Assessment within 90 days of receiving final NMED guidance.
RSI** (NMED, May 12, 1998)	May 1998	HRMB outlines supplemental information required for the site, including preparing a SAP to 1) conduct additional confirmation sampling at SWMU 0-030(g) and characterization sampling in the outfall drainage, and 2) conduct both Human Health and Ecotoxicological Assessments using the Risk-Based Decision Tree and RFI and supplemental data.
RSI Response (LANL, June 10, 1998)	June 1998	LANL ER responds to deficiencies and agrees to preparing a SAP, conducting field work, and submitting a report that includes the Human Health and Ecotoxicological Assessments using the Risk-Based Decision Tree.
Approval upon Modification (NMED, June 29, 1998)	June 1998	HRMB outlines modifications required to finalize approval of the RFI Report, including providing several replacement pages and addressing other modifications in the SAP.

*NOD – Notice of Deficiency

**RSI – Request for Supplemental Information

3.0 SAMPLING OBJECTIVE AND APPROACH/DESIGN

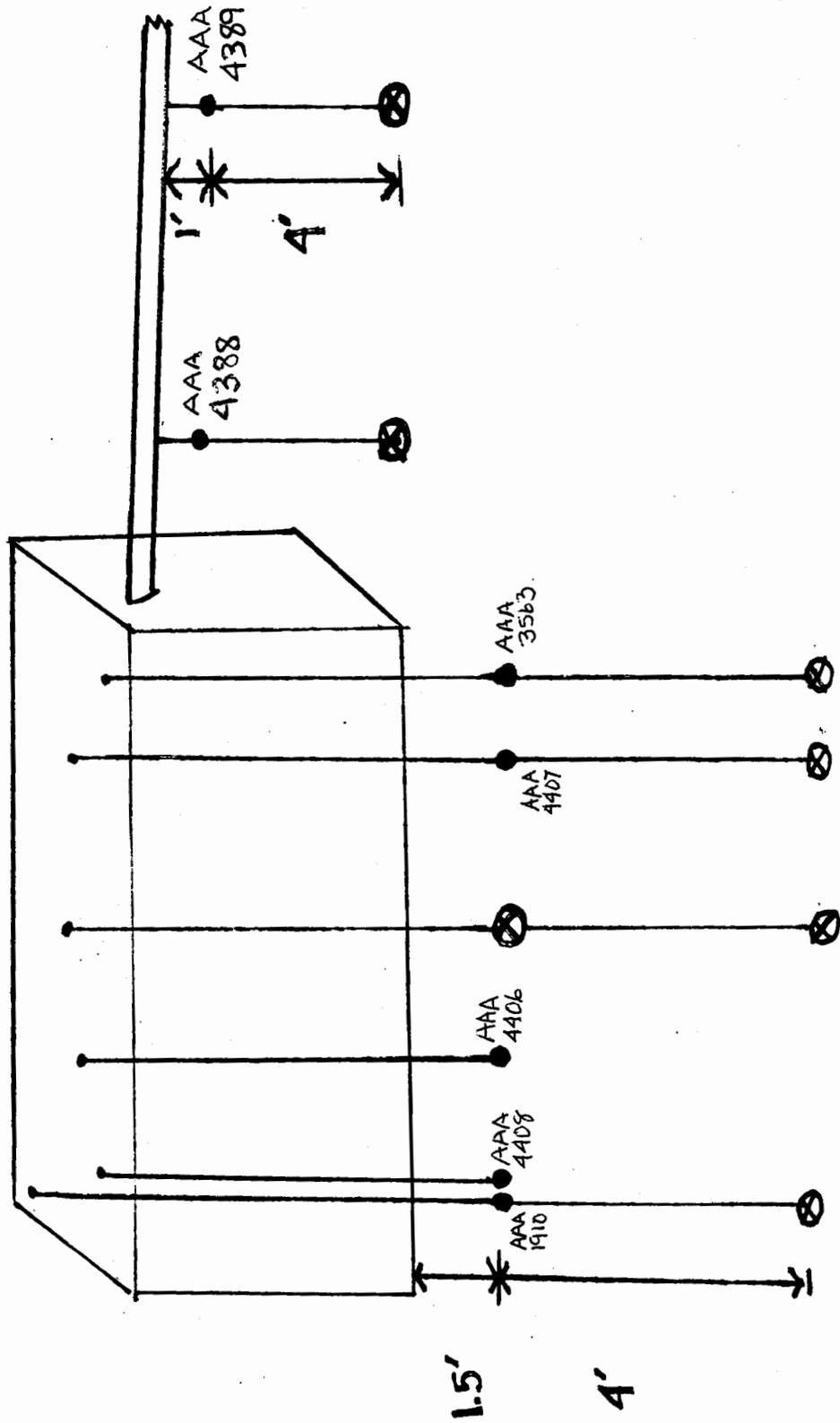
3.1 SAMPLING OBJECTIVE

The objective of this investigation is to provide supplemental analytical data from soil/tuff underlying the former locations of the septic tank and VCP. The results of these data will be used in conjunction with the 1993 RFI data to confirm that extent of contamination was adequately addressed when the septic tank, VCP, and underlying soil were removed from the site.

3.2 SAMPLING APPROACH/DESIGN

The 1993 RFI confirmation sampling approach was developed jointly with the Environmental Protection Agency (EPA) Region 6 and designed to confirm that contaminated soil beneath the septic tank and VCP was removed as part of the RFI campaign. This sampling approach is intended to augment the RFI confirmation sample data associated with the former septic tank and VCP with additional data. All data will then be used to show that extent of contamination was captured during septic tank, VCP, and underlying soil/tuff removal activities. Extent of contamination will be confirmed by collecting samples for full suite analyses at:

1. additional locations directly beneath the former structures, and
2. several depths at each location.



- Previous sampling location
- ⊗ New sampling location (full suite)

Figure 3.2-1. PRS 0-030(g) previous RFI sampling locations and proposed sampling locations.

The sampling design is based on RFI removal activities and confirmation sample locations and depths, which are depicted in Figure 3.2-1. Figure 3.2-1 is a three-dimensional schematic showing the septic tank and VCP, RFI confirmation sample locations and depths, and proposed confirmation sample locations and depths. Five RFI confirmation samples related to the location of the septic tank were collected after the septic tank and 18 in. of associated soil/tuff were removed. Similarly, two RFI confirmation samples associated with the VCP in the vicinity of the tank were collected after removal of the VCP and 12 in. of underlying soil/tuff. The following seven additional confirmation sample locations and depths are proposed:

- One additional locations to total six locations directly beneath the former septic tank; this location will be sampled at two depth intervals. The first depth interval will be identical to the previous RFI sample depth and the second depth interval four feet below the first interval.
- An additional depth interval will be sampled at three of the previous RFI confirmation sample locations directly beneath the former septic tank. The depth interval will correspond to four feet below the previous RFI confirmation sample depth.
- An additional depth interval will be sampled at two of the previous RFI confirmation sample locations directly beneath the VCP in the vicinity of the septic tank. The depth interval will correspond to four feet below the previous RFI confirmation sample depth.

4.0 SAMPLING ACTIVITIES AND ANALYTICAL METHODS

4.1 Sampling Activities

Confirmation soil/tuff samples will be collected using LANL-ER-SOP-06.10 "Hand Auger and Thin-Wall Tube Sampler" or LANL-ER-SOP-04.01 "Drilling Methods and Drill Site Management, depending upon site conditions. Samples will be collected at the locations and depths outlined in Section 3.2. Once collected, each sample will be field-screened for gross alpha and beta/gamma radiation and organic vapors. Radiological field-screening methods for samples will consist of using a Ludlum 139 with a 43-4 air proportional probe and a Ludlum 2221 with a 43-1 zinc sulfide scintillation probe to detect gross alpha radiation and a Ludlum 2 with a 44-40 GM probe to detect gross beta/gamma radiation. A photo-ionization detector (PID) will be used to detect organic vapors. Equivalent detectors and instruments may be substituted, as appropriate. Additional samples may be collected based on elevated radiological and/or organic vapor field screening results. After field-screening, samples will be submitted to the TA-21 radiological screening laboratory to address transportation requirements. All samples will then be submitted to a fixed laboratory for analysis of target analyte list (TAL) metals, polychlorinated biphenyls (PCBs)/pesticides, semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and isotopic plutonium and uranium.

4.2 Analytical Methods

All samples will be analyzed at analytical laboratories using EPA SW-846 methods (EPA, July 1992) for inorganic and organic constituents and radiochemical separation and alpha spectroscopy for isotopic plutonium, isotopic uranium, and americium-241. Proposed analytical suites and methods are summarized in Table 4.2-1.

**TABLE 4.2-1
ANALYTICAL SUITES AND METHODS FOR CONFIRMATION SAMPLING**

Analyte Suite	Analytical Laboratory Method
Inorganic Constituents	
TAL metals	SW-846 Methods 6010 (inductively coupled plasma emission spectroscopy), 6020 (graphite furnace atomic absorption), 7000 (inductively coupled plasma mass spectrometry), and 7470 (cold vapor atomic absorption)
Organic Constituents	
PCBs/pesticides	SW-846 Method 8081 (gas chromatography/electron capture detection)
SVOCs (including PAHs)	SW-846 Method 8270 (gas chromatography/mass spectroscopy)
VOCs	SW-846 Method 8260 (gas chromatography)
Radionuclides	
Isotopic Plutonium	Alpha spectroscopy
Isotopic Uranium	Alpha spectroscopy
Americium-241	Alpha spectroscopy

5.0 IMPLEMENTATION

5.1 Project Organization and Personnel

Table 5.1-1 shows the project organization and personnel for the SWMU 0-030(g) confirmation sampling.

**TABLE 5.1-1
PROJECT ORGANIZATION AND PERSONNEL**

Title	Name	Organization
Project Management		
Focus Area Leader	Roy Michelotti	EM/ER
Townsites Team Leader	Warren Neff	EM/ER
Field Team		
Field Team Leader (FTL)	TBD	TBD
Site Safety Officer (SSO)/Radiation Screening Personnel (RSP)	TBD	TBD
Sampler/Waste Manager (WM)	TBD	TBD

5.2 Project Schedule and Reporting

These sampling activities at SWMU 0-030(g) are scheduled to begin as soon as NMED HRMB concurs with this plan. Additionally, LANL ER will notify NMED HRMB prior to actual field activities to accommodate the collection of split samples, if desired. Actual field activities are expected to require two working days to complete.

The results of these sampling activities will be evaluated, summarized, and submitted to NMED HRMB as soon as available; NMED HRMB can then immediately appraise the property owner of the results. Additionally, these results will also be included in a Final Report Addendum evaluating and summarizing all sampling data from the 1993 RFI, these confirmation sampling activities associated with the septic tank and outfall, and the confirmation sampling activities to be proposed for the outfall area.

6.0 REFERENCES

EPA (Environmental Protection Agency), July 1992). "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, Final Update 1, Office of Solid Waste and Emergency Response, Washington, D.C.

LANL (Los Alamos National Laboratory), September 12, 1995. "RFI Report for Solid Waste Management Unit 0-030(g)," Los Alamos National laboratory Report, Los Alamos, New Mexico. (LA-UR-95-3263)

LANL (Los Alamos National Laboratory), March 6, 1997). "Response to Notice of Deficiency for Technical Area 0, Solid Waste Management Unit 0-030(g)," letter and attachment from J. Jansen, Program Manager, Los Alamos National Laboratory Environmental Restoration Project and T. Taylor, Program Manager, Department of Energy Los Alamos Area Office.

LANL (Los Alamos National Laboratory), June 10, 1998. "Response to Request for Supplemental Information for the RFI Report on Solid Waste Management Unit 0-030(g)," letter and attachment from J. Canepa, Program Manager, Los Alamos National Laboratory Environmental Restoration Project and T. Taylor, Program Manager, Department of Energy, Los Alamos Area Office to R.S. Dinwiddie, RCRA Permits Management Program (RPMP) Manager, Hazardous and Radioactive Materials Bureau (HRMB).

NMED (New Mexico Environment Department), July 1, 1996. "Notice of Deficiency for RFI Report on SWMU 0-030(g)," letter and attachment from B. Garcia, Bureau Chief, Hazardous and Radioactive Materials Bureau (HRMB) to G.T. Todd, Department of Energy, Los Alamos Area Office.

NMED (New Mexico Environment Department), May 12, 1998). "Request for Supplemental Information RFI Report on SWMU 0-030(g)," letter and attachment from R.S. Dinwiddie, RCRA Permits Management Program (RPMP) Manager, Hazardous and Radioactive Materials Bureau (HRMB) to T. Taylor, Program Manager, Department of Energy, Los Alamos Area Office and J. Browne, Director, Los Alamos National Laboratory.

NMED (New Mexico Environment Department), June 29, 1998. "Approval upon Modification RFI Report on SWMU 0-030(g)," letter and attachment from R.S. Dinwiddie, RCRA Permits Management Program (RPMP) Manager, Hazardous and Radioactive Materials Bureau (HRMB) to T. Taylor, Program Manager, Department of Energy, Los Alamos Area Office and J. Browne, Director, Los Alamos National Laboratory.