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Date: February 12, 1999
Refer to: EM/ER:99-036

HswA LANL 1/1106/21

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

**SUBJECT: RSI FOR THE SAMPLING AND ANALYSIS PLAN FOR SWMU 21-015
LOS ALAMOS NATIONAL LABORATORY, NM 0890010515**

Dear Mr. Garcia:

Enclosed is the Los Alamos National Laboratory's response to the New Mexico Environment Department Hazardous and Radioactive Materials Bureau's Request for Supplemental Information (RSI) for the Sampling and Analysis Plan for SWMU 21-015. In addition, an update to the Reference Set for Material Disposal Areas, Technical Area 21, is enclosed.

If you have any questions, please contact Dave McInroy at (505) 667-0819 or Gary McMath at (505) 665-4969.

Sincerely,

Julie A. Canepa, Program Manager
LANL/ER Project

Sincerely,

Theodore J. Taylor, Program Manager
DOE/LAO

JC/TT/JJ/bj

- Enclosure: 1) Response to Request for Supplemental Information for the Sampling and Analysis Plan for SWMU 21-015
2) Reference Set for Material Disposal Areas, Technical Area 21

TU



Cy (w/ enc.):

M. Buksa, EM/ER, MS M992
D. Daymon, EM/ER, MS M992
J. Jones, EM, MS M992
M. Kirsch, EM/ER, MS M992
D. McInroy, EM/ER, MS M992
G. McMath, CST-7, MS M992
D. Neleigh, EPA, R.6, 6PDN
T. Taylor, LAAO, MS A316, w/reference set
W. Woodworth, DOE-AL, MS A906
M. Dale, NMED-AIP, MS J993
J. Kieling, NMED-HRMB
EM/ER File (CT# C633), MS M992
RPF, MS M707

Cy (w/o enc.):

Tracker, Rm. 604, MS M992
EM/ER File, MS M992

**Response to Request for Supplemental Information
Sampling and Analysis Plan for SWMU 21-015
Los Alamos National Laboratory (LANL), NM0890010515**

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The comments are divided into general and specific categories as presented in the letter. Los Alamos National Laboratory's (LANL's) responses follow each NMED comment. Because the field investigation described in the sampling and analysis plan (SAP) was started in 1998, it does not make sense at this time to revise the SAP, as directed by a number of NMED's comments. A significant portion of the work specified in the SAP has been completed. However, NMED's comments have been addressed either by the investigation or the responses contained in this document.

GENERAL COMMENTS

NMED Comment

1. *LANL needs to ensure that all angled borehole descriptions include the following information in the 21-015 RFI Report:*
 1. *Any visual or olfactory contamination should be noted;*
 2. *All PID or FID readings should be noted;*
 3. *Approximate angle of borehole;*
 4. *Approximate starting location or borehole;*
 5. *Approximate vertical depth of soil sample; and*
 6. *Approximate horizontal location of sample.*

LANL Response

1. The Resource Conservation and Recovery Act facility investigation report will include the above-listed information in either tabular or graphic format. OK

NMED Comment

2. *NMED is not satisfied in the manner by which a particular section of the sampling and analysis plan was written. On page 29, second paragraph, LANL mentions that VOC analysis will be collected at the end of each borehole and at two other locations along each borehole. However, on page 30, LANL mentions in the footnote of Table 3.3-2 that VOC samples will be analyzed only if field screening indicates their presence. This is contradictory to the narrative discussion on page 29. In the future, sampling and analysis plans should clearly state the sampling intervals and the types of analysis to be performed. Contradictory or deceptive sampling and analysis plans are not appreciated and may create a feeling of distrust towards LANL.*

LANL Response

2. The discussion of volatile organic compound (VOC) sampling on Page 29, second paragraph, was correct in describing the locations for collection of pore-gas samples when drilling the boreholes. NMED references Table 3.3-2 in the above comment, which does not have the above referenced footnote. Table 3.3-3, which has the referenced footnote, indicates that core samples would be analyzed for VOCs following Environmental Protection Agency (EPA) SW-8260 methods. This

footnote must be taken in the context of the preceding paragraph. The paragraph includes the sentence "Analysis for VOCs will be performed on any sample for which a positive organic vapor measurement was obtained by field screening." The intent was to analyze core samples where organics were detected with field instrumentation.

During the 1998 field activities, each 2.5-ft core section was field screened for VOCs and radiological contamination over the entire length (100 ft) of each borehole. Pore-gas samples were collected at 35 ft (beneath the bottom of the trench), 75 ft, and 100 ft (total length) in each of the seven angled boreholes. Pore-gas samples were analyzed following EPA Compendium Method TO-14. Please note that it has never been nor ever will be the intent of LANL to write contradictory or deceptive SAPs.

SPECIFIC COMMENTS

NMED Comment

1. Section 3.2 Quality Assurance/Quality Control, Page 27, paragraph 4
LANL mentions that the field QC samples, such as duplicates, rinsate blanks, and trip blanks, will be collected in accordance with Laboratory ER Project guidance; however, this information is not included in the sampling and analysis plan. Please submit a revised sampling and analysis plan that includes this information.

Can LANL provide this or a general document for all sampling activities? Ed

LANL Response

1. Section 3.2 on Page 27 of the SAP states that "one of every 20 core sections will be sampled in duplicate to determine the variance associated with all aspects of this effort (i.e., collection, location, handling, and analytical variances)." These samples were collected during the 1998 field program. Field quality control (QC) samples, such as rinsate blanks and trip blanks, were collected in accordance with current LANL Environmental Restoration (ER) Project guidance (Jansen 1995, 48417). A copy of this guidance is attached for inclusion in the Technical Area (TA) 21 reference set. As called for in the RFI report annotated outline, a complete discussion of quality assurance and control will be included.

OK

NMED Comment

2. Section 3.3 Field Activities, Page 29, paragraph 1
LANL needs to clarify in the revised sampling and analysis plan whether all 10 sampling intervals per angled borehole will be analyzed for selected radionuclides, SVOCs, and metals. From reviewing the Appendix B Tables, it appears that there will not be 10 samples per borehole analyzed, which is contradictory to the narrative discussion of paragraph 1 on page 29.

Also, LANL indicated that each borehole will be cored at the 2.5 to 5 foot interval to be screened for VOCs and radioactivity. If radionuclides or organics are detected, then, subsequent intervals will be logged, photographed and inspected for fractures. For clarity, NMED will require that each borehole interval be screened and logged. Please revise the sampling plan accordingly.

LANL Response

2. Paragraph 1. LANL agrees that the text on Page 29 is not clear on the starting depth for sample collection; the Appendix B tables are correct. In addition, Figure 3.3-1 indicates the portion of the

borehole where core will be recovered and sampled. The first sample was collected at the bottom of the trench, which corresponds approximately to the 30-ft depth on angle. Further samples were collected from each 10-ft interval starting at the 30-ft interval. The samples were collected from the bottom 1 ft of each 10-ft interval (unless field observations or screening results indicated samples should be collected elsewhere), for a total of eight core samples for each borehole.

OK

Paragraph 2. LANL agrees that each borehole should be screened and logged over its entire length. Boreholes drilled during the 1998 field campaign were screened (VOCs and radioactivity), logged, and photographed over the entire length of the core.

As specified in depth

OK

NMED Comment

- 3. Section 3.3 Field Activities, Page 29, paragraph 2

If practical, LANL should be using EPA method 5021 or 5035 on cores in which the tuff is recovered in a "powdered" or friable state, instead of the "Soil-Gas Sampling Procedure for Open Boreholes." VOC soil samples should be analyzed using methods 5021 or 5035 of Update III to SW-826, "Test Methods for Evaluating Solid Waste" as published in the Federal Register of June 13, 1997, Vol. 62, No. 114, pp. 32452-463. If EPA method 5021 or 5035 are not practical, please justify in the revised sampling and analysis plan.

Also, LANL mentions in the sampling and analysis plan that two VOC samples will be taken from each angled borehole. LANL should clarify in the revised sampling and analysis plan whether the VOC samples taken from each angled borehole will be located underneath the trench.

LANL Response

- 3. Paragraph 1. Because of the welded nature of the tuff in the vicinity of Material Disposal Area (MDA) B, it is unlikely that core will be recovered in a powdered or friable state. The collection of pore-gas samples is a more effective sampling method when it is suspected that organic contaminants, if present, would be in the vapor phase.

OK

Paragraph 2. The narrative on Page 29 states that "Samples for VOC analysis will be collected at the end of the borehole and at two other locations along the borehole...." This makes a total of three samples for each borehole. All VOC pore-gas samples were collected beneath the trench.

OK

NMED Comment

- 4. Section 3.3 Field Activities, Page 30, 5th bullet

LANL mentions that boreholes 8, 9, and 10 will be located based on the analysis of the filed screening instruments used during the drilling of the first seven angled boreholes. LANL should revise the sampling and analysis plan to include the analytical lab results in addition to the filed screening results in determining the location of the final 3 boreholes.

Please clarify if the remaining boreholes will be drilled if the first seven borings indicate no contamination. LANL should contact NMED prior to locating the three remaining boreholes.

? Are we determining location a method?

LANL Response

- 4. LANL is awaiting analytical results to determine if the additional boreholes will be drilled. The SAP does state that field-screening results will be used to determine the locations of the final three

boreholes. However, this was based on logistical concerns that a significant period would elapse between the time when drilling would cease and analytical data would be available for decision-making purposes. As discussed with NMED in meetings on December 14, 1998, and January 14, 1999, LANL has not installed boreholes 8, 9, and 10. LANL will present analytical data to NMED and recommend whether or not to drill additional boreholes and/or assess the value of other investigations before additional field work is conducted at MDA B.

NMED Comment

5. *Section 3.3 Field Activities, Page 30, paragraph 4, Analytical Methods*
The detailed analyte lists, estimated quantitation limits, required QC procedures, and the acceptance criteria should be included in the sampling and analysis plan.

LANL Response

5. A summary of the analyte list and estimated quantitation limits or minimum detectable activities is listed in Tables 3.3-4 and 3.3-5. Page 30 states that "The detailed analyte lists, estimated quantitation limits (EQLs), required QC procedures, and the acceptance criteria are found in the ER Project analytical services statement of work (LANL 1995, 49738)." This information is included in the NMED MDA reference set for TA-21. OK

NMED Comment

6. *Section 3.3 Field Activities, Page 30, Table 3.3-3*
LANL mentions in the footnote of the table that VOC samples will be analyzed only if the field screening indicates their presence. This is contradictory to the narrative discussion on page 29, the next to the last paragraph. In that paragraph, LANL mentions that VOC analysis will be collected at the end of each borehole and at two other locations along the borehole. NMED will require that LANL comply with the requirements stated on page 29. If field screening instruments indicate no VOCs, LANL still must take 3 samples per angled borehole, with the 3 sample intervals being located underneath the trench.

LANL Response

6. Table 3.3-3 correctly states that core samples will be analyzed for VOCs. However, as stated in the LANL response to Comment 2, this analysis must be triggered by positive results on field-screening instruments. The table should have also stated that pore-gas samples would be analyzed using EPA Compendium Method TO-14. OK

Three pore-gas samples were collected for VOC analysis from each borehole, from 35 ft (bottom of the trench), 75 ft, and 100 ft in each of the seven boreholes.

REFERENCE

Jansen, J., June 9, 1995. "Field Collected Quality Assessment Samples," Los Alamos National Laboratory memorandum EM/ER:95-275, Los Alamos, New Mexico. (Jansen 1995, ER ID 48417)

Los Alamos

NATIONAL LABORATORY

memorandum

Date: February 12, 1999

**SUBJECT: REFERENCE SET FOR MATERIAL DISPOSAL AREAS,
TECHNICAL AREA 21**

The enclosed materials are an update to Reference Set for Material Disposal Areas, Technical Area 21, of the Los Alamos National Laboratory Environmental Restoration Project Reference Library. The enclosed materials include a revised table of contents for Volume 4 and a tabbed reference (ER ID 48417). This reference corresponds to "Response to Request for Supplemental Information Sampling and Analysis Plan for SWMU 21-015, Los Alamos National Laboratory (LANL), NM0890010515," which is being submitted concurrently.

To update the Reference Set for Material Disposal Areas, Technical Area 21, remove the old table of contents page (dated November 10, 1998) from Volume 4 and replace it with the enclosed revised table of contents page (dated February 12, 1999). Insert the enclosed tab and reference in proper numerical sequence.

If you have questions regarding these instructions, please contact Marcy Backsen at 505-665-3787.