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1/1071/0

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

March 3, 2000

John C. Browne, Director
Los Alamos National Laboratory
P.O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

Theodore Taylor, Project Manager
Los Alamos Area Office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544

RE: REQUEST FOR SUPPLEMENTAL INFORMATION
RFI REPORT PRS 0-017
LOS ALAMOS NATIONAL LABORATORY NM0890010515
HRMB-LANL-99-003

Dear Dr. Browne and Mr. Taylor:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has received the RCRA Facility Investigation (RFI) Report for PRS 0-017, dated July 30, 1999 and referenced by LA-UR-99-3354 & E/ER:99-197. HRMB has reviewed the report and is requesting supplemental information detailed in the attachment. Los Alamos National Laboratory (LANL) must respond to the request for supplemental information noted in the attachment within thirty (30) calendar days of the receipt of this letter.

If you have questions concerning this letter, please contact me at (505) 827-1558 extension 1012

Sincerely,

John E. Kielling
LANL Project Leader
RCRA Permits Management Program

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Dr. Browne and Mr. Taylor
RSI for RFI 0-017
March 3, 2000
Page 2

JEK:nd

cc: J. Bearzi, NMED HRMB
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File: Reading and HSWA LANL 1/10/1992

ATTACHMENT

The following table includes a complete listing of the potential release sites presented in this document, LANL's proposed actions, and the rationale for the AA's concurrence or non-concurrence on each proposed action.

PRS	LANL's PROPOSED ACTION	DOES AA CONCUR?	AA RATIONALE
0-017	NFA	No	Responses to following comments required

General Comments

1. According to the SWMU report, PRS 0-017 is 39,000 feet of underground acid/industrial waste line and associated sumps and pumps that were used for transport of radiological and chemical waste to various treatment facilities. The RFI report addresses only a portion of the SWMU (former Line167, Line170 and Line171). Is LANL proposing to NFA the entire SWMU or only the portions addressed in this report? If LANL is proposing to NFA the entire SWMU, then LANL should provide the information needed to make NFA determination for the entire SWMU. Human health and ecological risk assessment should have been performed for the entire SWMU. If LANL is proposing to NFA only the portions addressed in this report, review of this report could not result in NFA because HRMB will not grant NFA for a portion of a SWMU.
2. Area of concern (AOC) is defined as "An area at LANL known or suspected to be contaminated with radionuclides, but not contaminated by hazardous chemicals (or hazardous waste)" in Appendix A of the RFI Report. Based on this definition lead contamination of the soil in the Los Alamos Canyon, Omega Bridge area would not be an AOC, but a SWMU. The areas of lead contamination should either be addressed as part of this investigation or be assigned a new SWMU number and added to the HSWA module.
3. As it currently exists, comments on the ecological screening evaluation described in the document can be given in generalities because no details have been presented in the document which can be reviewed to verify risk calculations. The document references a methodology outlined in Kelly et al., 1998. However, that document does not supply adequate information such as biotransfer factors and toxicity reference values to evaluate how hazard quotients were calculated in this document. Please present all relevant information necessary to calculate hazard quotients and hazard indices, including biotransfer factors and toxicity reference values.

4. The risk assessment shows that several chemicals of potential concern fail the ecological screening assessment based on the toxicity values used. This should bring the ecological screening assessment to the site-specific risk assessment stage. Then, uncertainties should be looked at more closely to see if: 1) site-specific adjustments can be made to the concentration or dose equation inputs; 2) additional site characterization data will change contaminant concentrations (especially those constituents with high detection limits) elected to represent exposure concentration to ecological receptors, or 3) site-specific transfer factors and/or toxicity reference values can be substituted for the screening values utilized in calculating the hazard quotient. Eliminating the site without presenting and documenting how assumptions have been altered should not be used to recommend no further action (NFA) decisions. Please propose and document any changes made to the screening assumptions to show that NFA is a viable option.

Specific Comments

5. 2.1 Summary, page 4, paragraph 4:
LANL statement: "The canyon portion of the PRS was recommended for NFA based on Criterion 3; sampling results show no evidence that a release occurred."
HRMB Comment: Section 5.5.2.1 of the RFI work plan for OU 1071 (May 1992) states that an area of contamination was found in the vicinity of Manhole ULR-33 in the Los Alamos Canyon. Americium-241 and Cesium-137 were identified and Plutonium-239 was thought to be present. Soil contamination was found under the cracked pipe that was removed from beneath the north end of Omega Bridge. The area was cleaned to equal to or less than 25 pCi/g. In addition, previous investigations were limited to radionuclides only. Inorganic and organic contamination was never investigated, though the waste lines carried both radiochemical and chemical waste. Furthermore, radionuclides (i.e. Pu-239) were consistently detected above fallout values in the canyon area during this investigation. Since a release has occurred at the site, NFA criterion 3 is not applicable for this portion of the PRS. Therefore, LANL should use an appropriate criterion for recommending NFA.
6. 2.2.1 Site Description, figure # 2.2-1 page 5:
HRMB Comment: Figure 2.2-1 does not represent the entire length of the waste line (i.e. 39,000 feet) described in the SWMU report. Please provide a detailed map of the entire waste line and associated structures that contributed to the waste line.
7. 2.2.1 Site Description, Land Use, page 7, paragraph 3:
LANL statement: "In the vicinity of Los Alamos Canyon, which is owned by the DOE, the current and anticipated future operation and land use of this PRS is recreational. The land adjacent to the southwest of the canyon, on the mesa top behind Fire Station No. 1, may be

leased to the county of Los Alamos for a research business park in the future. No LANL decontamination and decommissioning (D&D) activities are currently proposed for these areas.”

HRMB Comment: Please clarify if this refers to areas (e.g. the land adjacent to the southwest of the canyon, on the mesa top behind Fire Station No.1) where portions of waste line are or were located. Provide a map of the above referenced area and indicate the location of the fire station, PRSs, and former or current waste lines in the area.

8. 2.2.1 Site Description, Environment, page 8, last paragraph:

LANL statement: “Small wetland areas are present on both sides of the Omega road, approximately one-quarter mile downstream from the PRS.”

HRMB Comment: LANL should investigate the small wetland area located downstream from the waste line. Over the years, contaminants released from the waste lines could have migrated and accumulated in the wetlands. This migration of contaminants could have occurred because waste lines on the sides of the canyon were at places buried at shallow depths.

9. 2.3.4.2 Field Investigation (e) Surface and Subsurface Sampling (Line 167), page 24, paragraph 6:

LANL Statement: “Initially, a total of 19 soil samples were collected for radiological screening only on the north side of the canyon at various locations along the trend of Line 167.”

HRMB Comment: Provide a map showing location of samples collected for radiological screening. Provide a table summarizing the results of radiological screening for both the north and south slopes of the canyon.

10. 2.3.4.3 Data Review (a) Radionuclide Comparison with Background/Fallout Radionuclide Concentrations, page 42, paragraph 4:

LANL Statement: “The soil values were used for the backfill material on the mesa top as well as the soil in the canyon based on current protocol adopted by the ER Project.”

HRMB Comment: Clarify the discrepancy between this statement and the ‘footnote d’ of Table 2.3-8 that states that the Qbt 2,3,4 value was used as the BV for fill samples. In addition, the background/fallout values were not used consistently, i.e. Qbt 2,3,4 BV/fallout values were used for Am-241, Cs-137, Pu-238, and tritium and soil BV/fallout values were used for Pu-239, U-234, U-235, and U-238 fill samples. Please use media BV/fallout values consistently.

11. 2.3.5.1 Nature and Extent of Contamination, Mesa Top, page 56, paragraph 1:

LANL Statement: “In the case of mercury, the six detects above the BV were all from locations along Line 171 and all occurred in shallow (fill) samples. In the deep sample at each of these locations, mercury was reported as not detected with a reporting limit less than the mercury concentration in the shallow sample. The detection of chromium and cyanide above their BVs also occurred in shallow fill samples, while in the deeper sample at each location, chromium and cyanide were not detected.”

HRMB Comment: The backfill material at the mesa top is contaminated at least with aluminum, barium, cyanide, chromium, magnesium, mercury, radionuclides, and PCBs. This could pose a future risk if the contaminated fill is exposed at the surface. Therefore, LANL should demonstrate that applicable institutional controls are in place to prevent exposure from future excavations.

12. 2.3.5.1 Nature and Extent of Contamination, Los Alamos Canyon (Line 167 and ULR 33), page 56, paragraph 1:

LANL Statement: "The lead distribution, combined with other evidence provided in this report (Section 2.3.4.2), conclusively shows that the lead contamination is not the result of a release from Line 167. The apparent source of the lead contamination is the periodic maintenance of Omega Bridge; i.e., lead based paint removal prior to repainting."

HRMB Comment: Lead was found at concentrations of 450 and 270 mg/kg at location 00-10144 (Samples RE00-98-0101 and RE00-98-0102) at the depth of 1-2 ft. Explain how lead found at this depth could be attributed to the Omega Bridge maintenance. Explain why samples at greater depths were not taken at this location to define the vertical extent of contamination.

13. 2.4.1 Summary, page 57:

LANL statement: "Human health and ecological screening assessments were not conducted on the mesa top portion of PRS 0-017 because the depth at which lines were buried precluded a viable pathway for exposure to occur and no receptors were present. The distribution and low concentrations of radionuclides detected in canyon samples indicated that a release from Line 167 did not occur."

HRMB Comment: LANL should have evaluated both current and future risk for the mesa top. Excavation of the site in the future could result in contamination being brought to the surface and could pose risk to human health and the environment. Moreover, the fill at the surface was never investigated though the fill samples taken at depth were found to be contaminated with inorganic chemicals, radionuclides and PCBs. Please see Comment 5 regarding a release from Line 167 and Comment 11 regarding institutional controls.

Miscellaneous Comments (No Response Required)

14. 1.0 Introduction, page 1, paragraph 1:

LANL statement: "The Laboratory site covers 43 square miles of Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons containing ephemeral and intermittent streams that run from west to east."

HRMB Comment: The above statement suggests that there are no perennial streams at LANL. However, Section 2.1, Site Description, identifies a perennial stream at the bottom of Los Alamos Canyon.

15. 2.3.4.2 Field Investigation (d) Canyon Subsurface Borehole Sampling (Manhole ULR-33), page 24, paragraph 4:

LANL Statement: "There were no deviations from these plans".

HRMB Comment: There was a deviation from the RFI Work Plan (LANL 1992, 07667.1) as modified by the SAP for SWMU 0-017 (LANL 1998, 62737.30). A composite sample (RE 00-98-0097) was taken that represented three different locations at different depth intervals (7.5-9 ft interval at the original borehole, the 6.5-7 ft interval in the south offset borehole, and the 7.5-9 ft interval in the north offset borehole). Composite samples were not proposed in the SAP. LANL did not obtain HRMB's approval for the deviation prior to implementation.

16. 2.3.4.3 Data Review (a) Inorganic Chemical Comparison with Background, Table 2.3-7, page 41:

LANL Statement: Footnote d -This sample was analyzed for lead only.

HRMB Comment: Samples RE00-98-0101, RE00-98-0102, RE00-98-0103, RE00-98-0099, and RE00-98-0105 were analyzed for full suite of analyses not just lead.

17. 2.3.4.3 Data Review (a) Radionuclide Comparison with Background/Fallout Radionuclide Concentrations, Table 2.3-8, page 43:

HRMB Comment: The text on page 42, paragraph 5, states that Pu-238 was detected in the fill and tuff on the mesa top, however, the table does not report detected values for the tuff.

The third column (Number of Analysis) states that 18 samples were analyzed for Uranium-235, when in fact, only 9 samples were analyzed for Qbt 2,3,4. Column four (Number of Detects) for Uranium-235 is also incorrect.

Since isotopic uranium was analyzed by alpha and gamma spectroscopy, the results of both analyses should have been provided. It is not clear if the data presented for isotopic uranium in Table 2.3-8 is same as the data provided in Appendix D. It is also not clear which analyses produced the data. The 'footnote g' refers to U-235 only. It is not clear if it applies to U-234 and U-238 also.

LANL should have used alpha spectroscopy for Am-241 analysis because BV/Fallout values used for comparison were obtained via alpha spectroscopy (footnote c).

The value for % soil moisture used in calculations to convert pCi/ml to pCi/g for tritium (footnote f) should have been provided.

18. 2.3.4.3 Data Review (a) Radionuclide Comparison with Background/Fallout Radionuclide Concentrations, Table 2.3-10, page 48:
HRMB Comment: It is not clear, if the two different background values (Column 5 -tritium BV/Fallout values 0.066 and 0.053) reported for tritium in soil are due to different moisture content of the soil since soil moisture content values were not provided. Sample RE00-98-0097 should have been identified as a composite sample in the footnotes.
19. 2.4.2.2 Ecological, (a) Scoping, page 61, paragraph 5:
LANL Statement: "The analytical data for antimony, cadmium, selenium, silver, thallium produced by ICPES had detection limits greater than the background data, which were analyzed by inductively coupled plasma mass spectroscopy (ICPMS)."
HRMB Comment: Not all chemicals cited above were analyzed by ICPMS. According to the background document (Ryti et. al. September, 1998) antimony and thallium were analyzed by ICPMS, and selenium by GFAA. To make appropriate comparisons, LANL should in the future use the same analytical methods for site samples as were used for background samples.
20. 2.4.4.2 Other Applicable Assessments, Groundwater, page 68:
HRMB Comment: The alluvial groundwater is within several feet of the surface in the canyon area. Since there was a release of contaminants in the past (see Comment 5) and radionuclides were detected in canyon area during this investigation, an assessment of alluvial groundwater should have been performed.