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MARK E. WEIDLER  
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DEPUTY SECRETARY

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

March 17, 1997

Mr. Theodore J. Taylor, DOE Program Manager  
Los Alamos Area Office, MS A316  
Department of Energy  
Los Alamos, New Mexico 87544

Mr. Jorg Jansen, LANL Program Manager  
Los Alamos National Laboratory ER Project, MS M992  
1900 Diamond Drive, P.O. Box 1663  
Los Alamos, NM 87544

RE: Notice of Deficiency for Los Alamos National Laboratory Operable Unit 1049:  
Los Alamos and Pueblo Canyon RFI Workplan Dated November 1995

Dear Mr. Taylor and Mr. Jansen:

The Hazardous and Radioactive Materials Bureau (HRMB) of the New Mexico Environment Department (NMED) has reviewed your November 1995 RFI Workplan for Operable Unit (OU) 1049 Los Alamos and Pueblo Canyon and has found it to be deficient. LANL shall respond to the attached comments and submit a revised schedule for the remaining canyon workplans within thirty (30) calendar days of receipt of this letter.

Should you have any questions, please feel free to contact either Ms. Teri Davis or Mr. John Kieling of my staff at (505) 827-1558.

Sincerely,

Benito J. Garcia, Chief  
Hazardous and Radioactive Materials Bureau

BJG/td

Attachment

Trace: LANL-313/MT/NJA, DOE, HRMB, KL  
File: HSR 4 LANL Fu 4 OU 1049 L



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TL

Mr. Taylor and Mr. Jansen

March 17, 1997

Page 2

cc: David Neleigh, EPA Region VI  
Robert S. "Stu" Dinwiddie  
John Kieling, NMED HRMB  
Allan Pratt, LANL  
David Broxton, LANL  
Pat Longmire, LANL  
Steve Reneau, LANL  
John Parker, NMED DOE OB  
Steve Yanicak, NMED DOE OB  
FILE: HSWA LANL FU4 OU 1049 L  
TRACK: LANL, 3/13/97, n/a, DOE, HRMB, RE

ATTACHMENT  
Notice of Deficiency  
OU 1049 Los Alamos/ Pueblo Canyon  
RFI Workplan

**General Comments**

1. All references made to the Environmental Protection Agency (EPA) being the Administrative Authority (AA) should be replaced with the New Mexico Environment Department (NMED).
2. The Los Alamos National Laboratory (LANL) shall provide consistency within the report by employing the English unit measurement system in addition to references of the Metric System.
3. All references made to Task/Site Workplan should be replaced with RCRA Facility Investigation (RFI) Workplan.
4. A site map should be included within this Workplan which depicts all potential release sites (PRS) in relation to proposed sampling locations.
5. Recreational land-use scenarios are proposed as exposure scenarios for determining human health risk for a majority of reaches within Pueblo and Los Alamos Canyons. Using a recreational land use scenario may allow concentrations of contaminants to remain at the site and thus hazardous constituents which have the potential to migrate off-site may pose an unacceptable risk using a residential land-use scenario.

As noted in an Environmental Surveillance (ES) Report (1992), "Most of the residual radioactivity from these historical releases is now associated with the sediments in Pueblo Canyon with an estimated total inventory of about 600 mCi of plutonium (ESG 1981). About two-thirds (400 mCi) of this total are in the DOE-owned portion of lower Pueblo Canyon." This would suggest that additional source areas due to accumulation of sediments down canyon need to be considered. Concentrations of constituents of concern may increase down canyon as a result of potential "secondary" source areas. This information indicates sediment migration is of concern when assuming a recreational land-use scenario within one reach. LANL shall propose an acceptable solution to this situation.

6. The ecological risk model presented within Chapter 6 should be modified to reflect LANL's recent approach to ecological risk-assessment as described within the *Ecological Risk Assessment for LANL* (1997).

7. Numerous reaches within Los Alamos and Pueblo Canyons (e.g. DP Canyon/ Los Alamos Canyon confluence, Acid/Pueblo Canyon confluence, and upper Los Alamos Canyon (TA-2)) contain significant sediment contamination in need of stabilization. As noted by NMED DOE OB (Steve Yanicak to Court Fesmire dated May 6, 1996), contaminants found in sediments within the canyon bottom at TAs 2 and 41 need to be stabilized: "water levels within the alluvium could rise to a point at which ground water may come into contact with contaminates (e.g., <sup>90</sup>Sr) in the vadose zone, and therefore, introduce or re-mobilize" contaminants within sediments. Until appropriate final measures can be implemented, LANL shall develop stabilization measures for known areas of significant sediment contamination to prevent further migration of contamination.

8. All schedules shall be modified to reflect the current status of activities and completion dates of specific tasks.

### Specific Comments

1. Executive Summary, pg. ES-1(Response to Regulatory Requirements): The following sentence should be changed from, "~~This site/site work plan satisfies the regulatory requirements of Module VIII, Sections I.5 and Q, tasks 1 through 5, of the HSWA Permit ....~~" to "~~This RFI Workplan intends to satisfy a portion of the regulatory requirements of Module VIII, Sections I.5 and Q, tasks 1 through 5, of the HSWA Permit ....~~".

2. Table 1-2, Pg. 1-9: The schedule proposed for the submittal of all the remaining canyon Workplans is unacceptable. HRMB will initiate an agency permit modification to set a specific schedule of investigation for the 15 major canyons as a part of the HSWA Module. LANL shall resubmit a schedule which does not extend beyond the year 2000 for submitting all remaining canyon work plans.

3. Section 2.5.5.1, pg. 2-22, par. 2: The following strikeout text should be replaced with the redline text; "~~Two of the lagoons contain only sanitary waste.~~", "~~Two of the lagoons contain a mixture of industrial and sanitary waste.~~".

4. Section 3.6.3.2, pg. 3-42: The occurrence of intermediate perched ground water in Otowi-1 (Pueblo Canyon) and PM-1 (Sandia Canyon) should be noted in this section.

5. Table 3-17, pg. 3-82: The well logs for TW-2A do not indicate that ground water was encountered from the Cerros Del Rio Basalts. Please revise this table and associated narrative.

6. Table 3-17, pg. 3-82: The well logs for TW-2, TW-3, and TW-4 do not indicate they were completed within the Santa Fe Group, but rather the Totavi Formation, Puye Formation and possibly the Tschicoma Formation. Please revise this table and associated narrative.

7. Section 3.7.6.1, pg. 3-86, par.6: The barometric pressure data for TW-1A and TW-1 may indicate a time-lag observation between these two points. It does not necessarily suggest that these two zones of saturation are hydraulically disconnected. This inference should be qualified.

8. Section 3.7.6.1, pg. 3-86, par.7: Within this paragraph, the reference made to Otowi-4 should be Otowi -1.

9. Section 6.3.2, pg. 6-8, par. 1: "Risk calculations for this investigation will incorporate contaminant levels found in the perched zones unless field investigations demonstrate that the perched zones are not usable for water supplies." As previously conveyed in a letter from NMED to DOE/LANL (Mr. Ed Kelley to Mr. G. Thomas Todd, dated July 24, 1996), this approach is unacceptable. LANL shall remove this sentence from the Workplan.

10. Table 7-5, pg. 7-21: As indicated in Table 7-5, the total number of full-suite analyses samples to be taken for Reaches P1 - P4 is eight. However, the number of samples to be collected per reach is denoted as (4/reach). Please clarify the total number of samples taken.

11. Table 7-5, pg. 7-21: Although section 7.2.2.1.3 states, "Reach LA-4 may contain the highest concentrations of Laboratory-derived contaminants along lower Los Alamos Canyon", Table 7-5 indicates that Reach LA-4 samples will not be analyzed for a full-suite of organics, inorganics, and radionuclide constituents. LANL should provide an explanation of the sampling of reaches P-4 combined with LA-3 to justify the limited analysis of LA-4 within the text.

12. 7.3.3, pg. 7-36: Regional aquifer wells should be included as part of this workplan in order to investigate known releases of hazardous constituents to ground water as described within NMED's *Hydrogeologic Evaluation of LANL* dated July 1996. The following locations should be investigated as described within the above-noted document: 1) Reach P-1 (immediately below the confluence of Acid/Pueblo Canyons), 2) Reach P-4 (immediately adjacent to POI-4), and 3) Reach LA-2 (immediately adjacent to LAOI-3.2). Specific single well aquifer characteristic testing should be performed as well as pumping of the regional aquifer wells, which are clustered with intermediate perched aquifer wells, to observe water-level measurements within POI-4 and LAOI-3.2.

13. 6. 7.3.3, pg. 7-36: This section lacks proposed aquifer testing for all concerned modes of ground water occurrence. LANL shall include aquifer testing for all newly constructed wells

and provide the results within the RFI Report. Also, water-level measurements should be obtained quarterly for all newly installed wells and reported within the RFI Report.

14. 7.3.3.1.2, pg. 7-40: All water samples collected for compliance with RCRA and comparison with LANL SALs shall be collected as unfiltered samples. See letter from EPA to DOE/LANL (Mr. Honker to Mr. Vozella) dated May 16, 1995.

15. 7. 7.3.3.1.5, pg. 7-64: The title to this section is misleading since the regional aquifer is found primarily within the Puye Formation and Totavi Lentil beneath LANL.

16. 7.3.3.1.5, pg. 7-67: In general, isotope data is the most indirect and inconclusive data to support hydraulic connection between various zones of saturation. Methods for investigating hydraulic connection include direct water-level measurement, aquifer characteristic testing, tracer tests, and isotope data. The first three methods listed are the most direct and conclusive. LANL shall supplement all water chemistry data used to support hydraulic connection inferences with water-level observation data where available.

17. 7.3.3.1.5, pg. 7-67; Water-level transducer data shall be collected and analyzed from POI-4, TW-1A, and TW-1 during the zonal sampling of Otowi-1. Pumping rates and water-levels observed within O-1 should be documented and reported within the RFI Report.

18. 7.3.3.1.5, pg. 7-67: Within the Workplan, 10-ft screen intervals are proposed for alluvial monitoring wells. Anticipated water-level fluctuations should be considered during the design of well construction for the alluvial monitoring wells. LANL shall propose screen lengths for all shallow perched "alluvial" monitoring wells to NMED for approval on a site-by-site basis. Twenty-foot screened intervals should be utilized for all other proposed monitoring wells (regional aquifer and intermediate perched ground water) unless data exists to justify the need for longer screened intervals.