

LANL  
RED 94

M E M O R A N D U M

TO: STEPHANIE STODDARD, RCRA PERMITTING SECTION

THROUGH: STEVE ALEXANDER, ~~MANAGER~~, RCRA TECHNICAL COMPLIANCE PROGRAM ~~SM~~

FROM: <sup>2W</sup>LEE WINN, RCRA TECHNICAL COMPLIANCE PROGRAM

DATE: JANUARY 28, 1994

RE: TECHNICAL REVIEW OF RESPONSE TO NOTICE OF DEFICIENCY FOR LOS ALAMOS NATIONAL LABORATORIES TECHNICAL AREA 35, TSL-85 SURFACE IMPOUNDMENT

-----

The following review was performed to determine technical adequacy of the Los Alamos National Laboratories (LANL) document entitled **Amendment to the Closure Plan for the Technical Area 35, TSL-85 Surface Impoundment**. This document was submitted in response to the RCRA Permitting Section's June 21, 1993 letter disapproving the closure plan. As a result of this review, the following items are the apparent technical deficiencies. Items are referenced by item number, document section, page, and paragraph if applicable. All language taken directly from the document is represented in bold lettering, following this are HRMB Technical Compliance Program comments.

<b>ITEM</b>	<b>SECTION and COMMENT</b>
-------------	----------------------------

1.	Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-2, paragraph 2. <b>"The action level calculated for selenium in the Closure Certification Report risk assessment (BEC, 1991) is summarized in Table 2-2 of this amendment."</b> Table 2-2 - In deriving action levels for a systemic toxicant in soil:
----	--

- a. the source of the RfD should be cited and include the date;
- b. an intake of .2 grams/day for a 16kg child/5 year exposure period should be used.

Why did LANL use other criteria in this table? Using their RfD (assuming it is the most current and from an acceptable source), instead of a screening action level of 250 mg/kg the calculated screening action level for selenium for would be much lower.

2.	Section 2.0 Response to NMED's Reasons for Closure Plan
----	---

72



Stephanie Stoddard  
January 28, 1994  
Page 2

Disapproval, page 2-2, paragraph 3. **"However, a comparison of beryllium concentrations detected at sample locations 85PL-1 through 85PL-12 (Table 2-1) with background levels for beryllium (Table 2-3) shows that the beryllium concentrations are all below background levels.** Regarding Table 2-3's reference to background study reports, LANL cannot reference documents without prior review and approval of the documents by the New Mexico Environment Department (NMED). For background levels from naturally occurring metals, in site specific situations if the background determination does not include site specific investigation components, it should not be accepted. See comments under item 3 below.

3. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-2 - 2-3, paragraph 4. **"Background levels for beryllium are documented in the report entitled "Sigma Mesa: Background Elemental Concentrations in Soil and Vegetation" (Ferenbaugh et al., 1979) (Appendix B) and the study "Preliminary Background Elemental Concentrations in Bandelier Tuff and Selected Soil Series" (Longmire et al., November 1993). The study by Longmire et al. (1993) will be completed in November 1993; Attachment 2-1 of this amendment provides a telephone log with summaries of the background concentration data determined by Longmire et al. for antimony, beryllium, and selenium."**

Regarding Attachment 2-1 - see comment for item number 2 above.

Regarding Appendix B "Sigma Mesa: Background Elemental Concentrations in Soil and Vegetation" - see comment for item number 2 above. Additionally, the following are examples of concerns which may be addressed in a background investigation:

- a. Is Sigma Mesa near TA35, TSL-85?
- b. What were the detection limits for the metals and were these below calculated screening action levels?
- c. Can it be proven that sample sites were not from areas of suspected sources of contamination?
- d. RFI Guidance Volume II of IV, Soil, Groundwater and Subsurface gas releases, EPA 530/SW-89-031, May 1989, OSWER Directive 9502.00-6D, page 9-44 states: "Background soil samples should be taken from areas

Stephanie Stoddard  
January 28, 1994  
Page 3

that are not near a suspected source of contamination and from the same stratigraphic layer as the study area samples, if possible." Cross sections should be provided to show that samples for background represent the same stratigraphic layer and soil type as the unit under investigation.

4. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-3, paragraph 3. **"The presence of nonhazardous dielectric waste oil in the soils appears to have interfered with the SVOC analyses for the soils, resulting in samples with evaluated LOQs."** LANL should remediate the dielectric oil for the following reasons:
  - a. because of LANL's inability to accurately determine the presence of SVOCs as a result of the masking effect of the dielectric waste oil,
  - b. because the presence of waste oil in the soil indicates that a leak occurred under the surface impoundment, and
  - c. because hazardous constituents were part of the waste stream.
5. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-4, paragraph 4. **"For the proposed additional sampling presented in Section 3.0 of this amendment, LANL's Environmental Chemistry Group (EM09) will conduct analyses for all Appendix VIII analytes that their in-house laboratories have the analytical capability to perform."** Why is LANL limited to using only their in-house laboratories if this is a problem? Additionally, see technical comments for Section 3.0 below.
6. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-7, paragraph 2. **"Acetone and 4-isopropyltoluene are not listed in Appendix VIII; therefore, they were not included in the Closure Certification Report risk assessment (BEC, 1991). 40 CFR subpart 264.111 Closure performance standard states:**

"The owner or operator must close the facility in a manner that: (a) Minimizes the need for further maintenance; and (b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents,

leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere;...."

LANL should include acetone and 4-isopropyltoluene in the Closure Certification Report risk assessment.

7. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-8, paragraph 1. **"Pure 1,1,1-trichloroethane was the primary degreasing solvent used in Buildings 85 and 188...Current analytical methods are unable to measure concentrations of hazardous constituents down to a concentration of 0."** The phrase "primary degreasing solvent" implies others. What were they? Additionally, measuring concentrations of constituents is typically done to the estimated quantitation limit, but J-flag, or Tentatively Identified Compound (TIC) reporting is required to be included in baseline risk assessment.
8. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-9, paragraph 2. **"PCBs were detected in Phases I, III, and IV at concentrations listed in Enclosure 4 of the Closure Certification Report (BEC, 1991) that exceeded calculated action levels. However, all detected concentrations of PCBs were below the NMED clean closure required cleanup level of 10 mg/kg (ppm) as specified in the Closure Certification Report risk assessment. Therefore, PCB concentrations are not considered a concern at the site and unless determined otherwise do not require any remedial action."** Because of the occurrence of multiple hazardous constituents, PCB concentrations should be included in the calculation of aggregate risk or hazard index during risk assessment.
9. Section 2.0 Response to NMED's Reasons for Closure Plan Disapproval, page 2-9, paragraph 4. **"A summary of the most current IRIS values used for the proposed risk evaluation will be included with the submittal of the Revised Closure Certification Report as part of the risk evaluation."** If toxicological data is not found in IRIS, LANL should look for HEAST data or other available approved EPA sources. Sources should be referenced in the report along with date of the reference.
10. Section 3.0 Proposed Sampling and Analysis Plan, page 3-1, paragraph 2. **"All analyses, QA, and QC will follow guidance specified in "Test Methods for Evaluating Solid Waste" (SW-846) (U.S. EPA, 1992). If hazardous constituents are detected in any of the samples, a risk**

**evaluation will be performed as outlined in Section 4.0 of this amendment.** QA results should be supplied along with analyses results. The report of analyses should include any J-flag data and TICs. J-flag data and TICs should be used in risk assessment or when multiple constituents have been detected.

11. Section 3.0 Proposed Sampling and Analysis Plan, page 3-1, paragraph 3. **"The analyses performed for Phase I soil samples generated analytical data for VOCs and SVOCs that are suspected due to surrogate recovery results outside EPA limits and missed EPA-allowable holding times. In addition, the SVOC data were compromised due to the interference from nonhazardous dielectric waste oil resulting in elevated LOQs. Therefore, Phase VI soil samples will be collected in the area of the former surface impoundment at locations representative of the locations sampled during Phase I."** How does LANL propose to correct the influence of the dielectric oil without raising the LOQs for VOCs and SVOCs? See comment for item number 4 above.
12. Section 3.0 Proposed Sampling and Analysis Plan, page 3-2, paragraph 2. **"Twelve soil samples will be collected, following the procedures described in Section 3.4.1.2, at a depth of 3.5 to 4.5 feet at approximately the same sampling locations as the Phase III samples."** LANL should indicate on a site map where the sampling locations were during the Phase III sampling event? A minimum of five soil samples should be collected below the fill soil where the UST was located. Additionally, how does LANL know that this number of samples will characterize the extent of contamination? Finally, see comment for item number 13 below.
13. Section 3.0 Proposed Sampling and Analysis Plan, page 3-3, paragraph 4. **"Take small, equal portions of sample from the surface or near the surface of the material to be sampled. Composite the samples in a glass container."** Samples for VOCs should not be composited.
14. Section 3.0 Proposed Sampling and Analysis Plan, page 3-5, paragraph 4. **"The analytical methods expected to be employed for analysis of samples collected during closure activities are denoted in Table 3-6."** Cobalt, copper, acetone, isopropyltoluene, and PCB's should be added to the appropriate analytical methods list. Additionally, this table should have a column indicating method detection limits, estimated quantitation limits, and screening action levels for each component. Because LANL

Stephanie Stoddard  
January 28, 1994  
Page 6

cannot analyze for all Appendix VIII they should provide a comparative list of analytical methods and associated constituents from an U.S. EPA Contract Laboratory Procedure (CLP) approved laboratory. The CLP laboratory should be one that analyzes using unmodified methods for the appendix VIII list of hazardous constituents.

15. Section 4.0 Proposed Risk Evaluation, page 4-1, paragraph 3. This equation fails to include the absorption factor = 1.
16. Section 4.0 Proposed Risk Evaluation, page 4-2, paragraph 2. **"Aggregate hazard and risk indices are normally calculated for a site by summing these individual hazard quotients and risks, respectively, over the major constituents that are observed at a given site."** LANL should explain what is implied by "major" constituents.
17. Section 4.0 Proposed Risk Evaluation, page 4-3, number 1. **"If constituent is detected above the LOQ in all samples, the 95 percent upper confidence limit of the arithmetic average will be used (per RAGS)."** LANL should explain what is meant by "all" samples. It is appropriate that a risk assessment be performed if any constituent is detected either by J-flag, TIC, or quantity.
18. Section 4.0 Proposed Risk Evaluation, page 4-5, paragraph 1. **"If the aggregate hazard index is greater than or equal to 1 or the aggregate risk exceeds  $1 \times 10E-6$ , risk assessment using a site-specific, realistic exposure assessment will be performed."** If this is the case, LANL may need to consider all exposure pathways.

cc: LANL 94 Red File  
Barbara Hoditscheck

File:LANLTA35