

~~CONFIDENTIAL~~ ^{NO}
Memorandum

To: Stephanie Kruse, RCRA Permitting

From: *SH* Susan Hoines, RCRA Technical Compliance Program

Through: *RAK* Ronald A. Kern, Technical Compliance Program

Date: January 4, 1996

Subject: Technical review of LANL's responses (received 9/6/95) to NOD given to Los Alamos National Laboratory regarding the clean closure proposal of the mixed waste surface impoundments at TA53

The following comments in Attachment A are provided as a review of the technical adequacy of Los Alamos National Laboratory's (LANL's) August 31, 1995 submittal of the "Response to comments on LANL's Response to Notice of Deficiency (NOD) for TA-53 Mixed Waste Surface Impoundments". Previously, HRMB issued a reply on July 24, 1995, noting deficiencies in LANL's response to the NOD for this closure plan.

As requested by the RCRA Permitting Program, the RCRA Technical Compliance Program (RCRA TCP) agreed to review LANL responses to the HRMB comments and LANL's Statistical Comparisons to Background: Part I (dated March 28, 1995). The HRMB labeled its comments as items:

A-2 [7/24/95 Enclosure A, comment item #2],

A-3 [7/24/95 Enclosure A, comment item #3],

1)#2 [7/24/95 Enclosure B, part (1) Responses to Technical review of the NOD comments for the TA 53 surface impoundments closure plan dated December 16, 1994, comment item #2]

1)#18 [7/24/95 Enclosure B, part (1) Responses to Technical review of the NOD comments for the TA 53 surface impoundments closure plan dated December 16, 1994, comment item #18],

1)#34 [7/24/95 Enclosure B, part (1) Responses to Technical review of the NOD comments for the TA 53 surface impoundments closure plan dated December 16, 1994, comment item #34], and

2) [7/24/95 Enclosure B, part (2) Response to Technical Area (TA 53, NE & NW Surface



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Impoundments (Former Operable Unit 1100), dated March 10, 1995 in which LANL responded to the Teleconference Comments of January 24, 1995 with NMED].

Permitting and TCP met on December 13, 1995 to review responses.

At this time, the RCRA TCP recommends approval of all but two of the responses. The LANL responses not approved by RCRA TCP are the responses to comment items A-2 and to 2). The RCRA TCP understands currently that the RCRA Permitting Program will determine how these concerns will be addressed with LANL. Technical comments are included as Attachment A.

ATTACHMENT A

The following comments are provided as a review of the technical completeness of the responses dated 8/31/95 to Notice of Deficiency (NOD) given to Los Alamos National Laboratory (LANL) regarding the clean closure of the mixed waste surface impoundments at TA53. The first category below gives a summary of the RCRA Technical Compliance Program (RCRA TCP) comments. The second category lists a specific RCRA TCP comment for each LANL response.

SUMMARY:

The RCRA TCP conditionally approves all but two of LANL's responses. The condition for approval is that LANL must adhere to its currently proposed methodology of calculating Upper Tolerance Limits (UTLs) for naturally occurring metals in each soil horizon (as outlined in a LANL document submitted to the EPA November 28, 1995 regarding the NOD issued for the PRS 31-001 RFI Report). Additionally LANL must use its proposed methodology for the screening process for identifying Constituents Of Potential Concern (COPCs) based on the results of the multiple chemical evaluation (see the December 1, 1995 LANL document submitted to the EPA as a follow-up on issues from the Joint Risk Assessment Workshop)

The two responses not approved are LANL's proposal to apply an industrial land use scenario towards clean closure and LANL's inadequate sampling map for demonstrating that inactive piping is uncontaminated.

SPECIFIC COMMENTS:

The following are specific comments which provide the RCRA TCP rationale for acceptance or denial of a particular LANL response. Reference to the response text is located by part, section, page, and paragraph, where applicable. The specific text is quoted and highlighted in bold. Following are the RCRA TCP comments.

<u>ITEM</u>	<u>COMMENT</u>
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| 1 | <u>Enclosure A</u> , Item A2, page 1, "... The radionuclide dose and the chemical risk and hazard will be calculated based on a continued industrial land use scenario. " Since this plan is presented as a clean closure, LANL must use the residential criteria as the most conservative approach for a clean closure demonstration. |
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- 2 Enclosure A, Item A3, page 1-2. LANL submitted a November 28, 1995 document to the EPA regarding the NOD issued for the PRS 31-001 RFI Report. In this document, LANL adopted the EPA UTL calculation for naturally occurring metals in the soil. LANL identified the background values for each soil horizon. This is acceptable to the RCRA TCP. However, beryllium and arsenic, naturally occurring constituents that were dealt with in LANL's soil background study, present a concern because their UTL concentrations are one to two orders of magnitude above the Screening Action Limit (SAL) accepted by the EPA and HRMB. Therefore, RCRA TCP recommends that site specific background data be acquired for arsenic and beryllium. If LANL adheres to its current policy for calculating UTLs for each soil horizon, RCRA TCP accepts the soil horizon background values for naturally occurring metals, except for Be and As.
- 3 Enclosure B, Part 1), Item #2, page 6. LANL response to HRMB comment on page 3 of its December 16, 1994 submittal to HRMB: **"LANL agrees to use either the maximum chemical concentration or the 95% UCL of the mean when calculating dose, potential health hazard, or cancer risk. The 95% UCL of the mean will be based on a minimum of 10 samples. A Shapiro-Wilks statistic will be used to indicate whether the data are distributed normal or log-normal. Formulas for the computation of the 95% UCL of the mean will be provided for normal or log-normal distribution, a non-parametric procedure will be used to derive the 95% UCL of the mean. If the 95% UCL of the man is greater than the highest measured concentration, then the highest measured value will be used as the concentration term."** RCRA TCP accepts the LANL response for this item.
- 4 Enclosure B, part 1), item #2, page 6: HRMB Comment on page 4 of LANL's December 16, 1994 submittal to HRMB: *"LANL must assure that determination of background concentrations for naturally occurring metals is conducted by using samples from the same strata*

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and soil types found at the site. LANL may compare their site specific values to the facility-wide background study to assure that the results are within facility-wide range. Also, LANL must provide a site-specific sampling and analysis plan to determine background concentrations for naturally occurring metals. This plan may incorporate relevant facility wide background study results."

LANL response: "See response to comment A-3 (Enclosure A)."
RCRA TCP response : Refer to comment for item 2.

- 5 Enclosure B, part 1), item #2, page 6-7: HRMB Comment on page 5 of LANL's December 16, 1994 submittal to HRMB: "*If LANL cannot adequately indicate 95% UCL of the mean then the highest concentrations should be used including those detected at greater than or equal to five times the limit of detection (see comment #2 (page 3) above).*" LANL response: "See response to comment #2 (page 3) above." RCRA TCP accepts the LANL response for this item.
- 6 Enclosure B, part 1), item #2, page 7: HRMB Comment on page 4-5 of LANL's December 16, 1994 submittal to HRMB: "*If LANL uses the Tolerance Interval for determining the background upper tolerance critical limit, and the Confidence Interval to average the verification sample results from a closure/remediation activity, the resulting comparison would involve comparing totally different single parameters.....*" LANL response: "LANL will compare the maximum sample concentrations to the background upper tolerance limits. This comparison will be conducted as prescribed in Statistical Comparisons to Background, Part I (Los Alamos National Laboratory Environmental Restoration Project, Assessments Council, March 1995, LA-UR-95-1217) (attached)." Refer to RCRA TCP comment for item 2.
- 7 Enclosure B, part 1), item #2, page 7: HRMB Comment on page 6 of LANL's December 16, 1994 submittal to HRMB: "*Calculating risk assessment based on toxic endpoint organ is not acceptable...*". LANL response: LANL submitted a December 1, 1995 document

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to the EPA as a follow-up on issues from the Joint Risk Assessment Workshop. In this document, LANL proposed a more conservative methodology as part of the screening process for identifying COPCs based on the results of the multiple chemical evaluation. If LANL adheres to this proposal in regards to its screening approach, RCRA TCP accepts this portion of the closure plan.

- 8 Enclosure B, part 1), item #4, page 8: HRMB Comment on page 7 of LANL's December 16, 1994 submittal to HRMB: "*PCBs are identified as hazardous constituents in 40 CFR 261, Appendix VIII.....For screening purposes, HRMB recommends calculating the screening action level as described in subpart S guidance using the most recent toxicological data for PCBs*" . LANL response: "**For screening purposes, LANL proposes to follow the current guidelines proposed by the LANL'S Decision Support Team for the Environmental Restoration Project. These guidelines represent the most current accepted practices for evaluating sites at LANL and have been and are being presented to EPA for their approval as they are developed and revised. Specifically, EPA Region 9 Preliminary Remedial Goals (PRGs) are considered to be more representative of potential site exposure than either Subpart S health-based action levels, which consider only one pathway of exposure (i.e., incidental ingestion of soil), and SALs which include only two pathways of exposure at most (i.e., inhalation of volatiles and ingestion). Region 6 EPA has been consulted and agrees with this approach. Thus, LANL proposes to use the Region 9 PRGs as screening levels for all chemicals, including PCBs. For PCBs, the numerical value of the Region 9 PRG is equal to the screening level calculated as described in the Subpart S guidance.**" RCRA TCP accepts the LANL response for this item.
- 9 Enclosure B, part 1), item #18, page 9: HRMB Comment on page 19 of LANL's December 16, 1994 submittal to HRMB: "*See comments for item number 2 (page 4) [item 4] above. There should be a sampling and analysis plan to determine background levels for*

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- naturally occurring metals.*" LANL response: "See response to comment A-3 (Enclosure A)." RCRA TCP comment: refer to comment for item A3.
- 10 Enclosure B, part 1), item #34, page 10: HRMB Comment on page 19 of LANL's December 16, 1994 submittal to HRMB: "*The guidance default value for Exposure Frequency (EF) is 365 days not 274 for residential land use. LANL must perform a baseline risk assessment using the conservative residential risk scenario for comparison purposes....Therefore, LANL should utilize a residential land use scenario, a hazard index of 1 or less, 10⁻⁶ or less increase in cancer risk over background....*". LANL response: "**It is LANL's current policy that the TA-53 surface impoundments will remain under continued industrial land use. The TA-53 surface impoundments are located within an industrial setting at the eastern edge of TA-53....It is LANL's current policy that the lands comprising OU 1100, including the TA-53 surface impoundments, will remain under continued laboratory administrative control into the foreseeable future....Therefore, LANL proposes to calculate risk based on a continued industrial land use scenario considering each surface impoundment as an industrial exposure unit...**" RCRA TCP comment: refer to comment for item 1.
- 11 Enclosure B, part 2), page 12, paragraphs 3 and 4: HRMB general comment: "*...The sampling and analysis strategy described for the inactive piping appears acceptable. However, a map should be provided showing the proposed sampling locations.*" LANL response: "**Proposed borehole locations are indicated in the new Figure 2-3, which was included with LANL's previous responses. A copy of this figure is also attached to the current response.**" RCRA TCP comments: LANL must submit a sampling map specific to the inactive piping associated with the surface impoundments. The map LANL submitted with this response only shows borehole locations.