



BRUCE KING
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2850

JUDITH M. ESPINOSA
SECRETARY

RON CURRY
DEPUTY SECRETARY

Certified Mail-Return Receipt Requested

May 5, 1994

Mr. Jerry L. Bellows, Area Manager
Los Alamos Area office
Department of Energy
528 35th Street
Los Alamos, New Mexico 87544-5000

RE: TA-35 TSL-85 Surface Impoundment: Notice of Deficiency (NOD)

Dear Mr. Bellows:

The New Mexico Environment Department (NMED) has reviewed for technical adequacy, the October 1993 Amendment to the Closure Plan for Technical Area 35, TSL-85, Surface Impoundment. The document was compiled in response to the NMED's letter of June 21, 1993 disapproving a closure plan and a clean closure equivalency demonstration proposed by the Department of Energy and Los Alamos National Laboratory (DOE/LANL).

After reviewing the closure plan amendment, NMED has found the plan to be technically deficient. The attachment to this letter explains what information is needed in order to complete the review process. This information will be used to make a final determination regarding acceptability of the closure plan.

All information requested by the attachment must be submitted to NMED within thirty (30) days of receipt of this NOD. Failure to submit the requested information in the time designated may result in the issuance of a compliance order with associated fines. A petition for deadline extension may be considered on an item by item basis, provided that written justifications and expected submittal dates are given.

Any questions about the NOD may be directed to Tom Tatkin at 827-4308.

Sincerely,

Barbara Hoditschek
Barbara Hoditschek, Manager
RCRA Permits Program
Hazardous & Radioactive Materials Bureau

Attachment

cc: David McInroy, LANL
File Red, '94



5171

72

NOTED DEFICIENCIES IN THE DOCUMENT: Amendment to the Closure Plan for the Technical Area 35, TSL-85 Surface Impoundment, October 1993

Items are referenced by item number, document section, page and paragraph if applicable. All language taken directly from the reviewed document is represented in bold lettering. Regulatory authority for requesting the following information is New Mexico Hazardous Waste Regulations (HWMR-7), Part V, §264.112(b)(4).

Item Section and Comment

1. Section 2.0, Response to *NMED's Reason for Closure Plan Disapproval*, page 2-2, paragraph 2. **"The action level calculated for selenium in the Closure Certification Report risk assessment (BEC, 1991) is summarized in Table 2-2 of this amendment."**
 - a. Table 2-2 - In deriving action levels for a systematic toxicant in soil:
 - i. The source of the reference dose (RfD) needs to be cited and dated for the time the reference was published;
 - ii. An intake of 0.2 grams per day for a 16 kilogram child per 5 years of exposure must be used.
 - b. Why was other criteria used in Table 2-2? Use of the provided RfD (assuming that the RfD was the most current at the time the presentation was made and assuming that the RfD was from an acceptable source) versus a screening action level of 250 mg/kg, the calculated screening action level for selenium would have been lower.

2. Section 2.0, Response to *NMED's Reason for 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."**

In order to verify that beryllium concentrations are below background levels, the Table 2-3 reference to background study reports must be provided to NMED for review and approval. Submittal of these documents must be separated from the Closure Plan or an amendment to the Plan. Unless the method and procedure used to make the background determination are acceptable, NMED will not

agree with the findings in the above comparison.

3. Section 2.0, Response to *NMED's Reason of Closure Plan Disapproval*, page 2-2 through 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 11993). 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."**

The documentation for Attachment 2-1 and Appendix B, referred to above, must be reviewed and approved by NMED, as a separate document submittal, prior to being acceptable for the support of establishing background values. If it is the desire of LANL to pursue the establishment of background values, provide all materials necessary for NMED to validate the documented hypothesis.

In addition to the report itself, the following information are examples of concerns which may be addressed in the background investigation:

- a. Describe the geographical location of the Sigma Mesa relative to the TA 35, TSL-85 surface impoundment.
- b. Report the detection limits for the metals that were analyzed, and indicate whether these limits were below the calculated screening action levels.
- c. Provided a demonstration to show that sample sites were not previously contaminated. Stratigraphic cross-sections need to be provided to show that samples for background represent the same stratigraphic layer and soil type as the unit being investigated.

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 that are not near a suspected source of contamination and from the same stratigraphic layer as the study area samples, if possible."

4. Section 2.0, Response to *NMED's Reason of Closure Plan Disapproval*, page 2- 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 elevated LOQs."**

Remediation of the dielectric oil is necessary for the following reasons:

- o Inability to accurately determine the presence of semivolatiles as a result of the masking affect from the dielectric waste oil;
- o The presence of waste oil in the soil indicates that a leak occurred under the surface impoundment; and
- o Hazardous waste constituents were part of the over all waste stream generated at the surface impoundment.

5. Section 2.0, Response to *NMED's Reason of 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."**

This statement seems to imply that not all Appendix VIII constituents can be analyzed through in-house capabilities, and that any constituents that cannot be analyzed through in-house capabilities may not be analyzed at all. Provide clarification for the above sentence that may include how outside laboratories may be called upon to conduct analysis that will not be conducted at LANL.

6. Section 2.0, Response to *NMED's Reason of 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)."**

The New Mexico Hazardous Waste Regulations dealing with closure activity (HWMR-7, Part V, §264.111) states that the owner or operator must close a facility in a manner that minimizes the need for further maintenance and controls, minimizes or eliminates to the extent necessary, to protect human health and the environment,

NOD

May 5, 1994

Page 4 of 7

post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

Therefore, acetone and 4-isopropyltoluene must be included in the Closure Certification Report risk assessment.

7. Section 2.0, Response to *NMED's Reason of Closure Plan Disapproval*, page 2-8, paragraph 1. "Pure 1,1,1-trichloroethane was the primary degreasing solvent used in Building 85 and 118 ... Current analytical methods are unable to measure concentrations of hazardous constituents down to a concentration of 0."

The phrase "primary degreasing solvents" implies that other solvents were used. Provide a complete list of those solvents used for degreasing operations in Building 85 and 118 prior to the closure of the TA 35, TSL-85 surface impoundment.

Measuring the concentrations of constituent is typically done to the estimated quantitation limit. J-flag or Tentatively Identified Compounds (TIC) reporting is also necessary and must be included in any acceptable baseline risk assessment.

8. Section 2.0, Response to *NMED's Reason of Closure Plan Disapproval*, page 2-9, paragraph 2. "PCBs were detected in Phase 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."

Due to the fact that there is an occurrence of multiple hazardous waste constituents present in the soil at the closure, PCB values must be included in the calculation during risk assessment for aggregate risk or for the hazard index.

9. Section 2.0, Response to *NMED's Reason of 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 Plan Certification Report as part of the risk evaluation."

In the case that toxicological data is not found in IRIS, LANL must look for HEAST data or other available, EPA approved sources. Sources must be referenced in the report along with a date for the reference.

10. Section 3.0, Proposed Sampling and Analysis Plan, page 3-1, paragraph 3. **"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."**

Quality assurance results must be supplied with all analytical results. The analytical report must include any J-flag data and TICs, which in turn must 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 dielectric waste oil resulting in elevated LOQs. Therefore, Phase IV soil samples will be collected in the area of the former surface impoundment at locations representative of the locations sampled during Phase I."**

The comment for item 4 provides reasons for the need to remediate the dielectric waste oil. One of the given reasons was the interference from the dielectric oil, effecting the LOQ.

No response is needed for this comment. Attention is being focused on this part of the reviewed document for the same concern that is brought out in item 4 of this paper.

12. Section 3.0, Proposed Sampling and Analysis Plan, page 3-2, paragraph 3. **"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."**

NOD

May 5, 1994

Page 6 of 7

- a. Indicate sampling locations for all phase III samples collected on a site map.
- b. A minimum of five samples must be collected below the fill soil of where the underground storage tank had been positioned.
- c. Provide the basis for deciding upon twelve soil samples to characterize the horizontal and vertical extent of contamination.

Be advised that composite sampling is not acceptable for characterizing VOCs in contaminated soils.

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."**

It is not acceptable to composite samples being analyzed for VOCs as noted in item 14 above. Make the appropriate changes in the text of the Sampling and Analysis Plan.

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."**

- a. Include the following hazardous waste constituents to the appropriate analytical methods list in Table 3-6: Cobalt, copper, acetone, isopropyltoluene, and PCBs.
- b. The Table must also include columns that indicate the method detection limits, the estimated quantitation limits, and the screening action levels for each constituent being analyzed.
- c. Since not all Appendix VIII constituents cannot be analyzed at LANL, provide a comparative list of analytical methods and associated constituents from a U.S. EPA Contract Laboratory Procedure (CLP) approved laboratory. The CLP laboratory selected must be capable of using unmodified methods for the Appendix VIII list of hazardous constituents.

15. Section 4.0, Proposed Risk Evaluation, page 4-1, paragraph 3.

The provided equation fails to include the absorption

NOD

May 5, 1994

Page 7 of 7

factor equal to one. Make the appropriate changes in the text of the Proposed Risk Evaluation.

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."**

Explain what is meant by the term "major constituents" as used in the above statement.

17. Section 4.0, Proposed Risk Evaluation, page 4-3, number 1. **"If a constituents is detected above the LOQ in all samples, the 95 percent upper confidence limit of the arithmetic average will be used (per RAGS)."**

Explain what is meant by the phrase "all samples" from the above statement. In order to be appropriate, a risk assessment must be performed when 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 1×10^{-6} , risk assessment using a site-specific, realistic exposure assessment will be performed."**

The above statement being the case, LANL must consider all exposure pathways.