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TO: Ron Kern, Program Manager, NMED/RCRA Technical Program
THROUGH: Bruce Swanton, Program Manager, DOE/EM Oversight
FROM: Steve Yanicak, HRMB DOE/EM Oversight
DATE: October 5, 1994
SUBJECT: Review Of LANL's Operable Unit (OU) 1082 Volume I RFI Work Plan submitted July 1993

The Hazardous and Radioactive Materials Bureau (HRMB) Agreement in Principle (AIP) staff have completed the review of the operable unit (OU) 1082 Volume I RCRA facility investigation work plan (RFIW). This memo details the comments stemming from the review. For clarity, the memo contains numbered items listing comments that are keyed to a specific numbered chapter/section, bullet, paragraph, table or figure in the RFIW as well as to the page number e.g., **ITEM 2. (4.4.4.4, b5, p2, Table 4-4-4, Fig. 4-4-4, pg. 4-17)**. The AIP program is submitting these comments and technical recommendations to the HRMB's Enforcement/Technical Programs because of eventual New Mexico HSWA authorization. Any non-HWSA comments listed e.g., comments pertaining to radiological possible contaminants of concern (PCOC), are those that are not specific to RCRA regulations but are included in this memo for the sake of completeness of the work plan review.

ITEM

- 1. SPECIFIC COMMENT (Table ES-1, pg. ES-7)** The baseline activities table presented for OU-1082 is not adequate. A detailed schedule that includes geophysical surveys and sampling for Phase I activities should be presented in the RFIW.
- 2. SPECIFIC COMMENT (Fig. 3-1, pg. 3-3)** It is unclear where the inset map is taken from in the figure.
- 3. SPECIFIC COMMENT (3.4.3.2, p3, pg. 3-10)** The soil-tuff interface on the Pajarito Plateau at OU-1082 hasn't been sufficiently characterized to generally state that an impermeable clay zone often forms there.



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4. **SPECIFIC COMMENT (3.5.2.2 p1, pg. 3-18)** The text states "The possible existence of perennial aquifers in these canyons has not been investigated. Such aquifers occur in other canyons on the Pajarito Plateau". Of major concern are the possible existence of intermediate perched and alluvial ground water systems in Canon de Valle and whether they have been impacted by the operations of OU-1082.
5. **SPECIFIC COMMENT (Table 4-1, pg. 4-8...4-12)** The Table should include references for background PCOC values.
6. **SPECIFIC COMMENT (Table 4-9, pg. 4-41)** The size of the area to be assessed is not included as a factor in determining the number of samples to be taken. Table 4-9 should be used as a guide, not as the absolute rule. This comment also applies to: 5.2.3, last paragraph, pg. 5-62; 5.7.3, DQO Step 6, last paragraph, pg. 5-143; 5.10.3, DQO Step 6, p3, pg. 5-193; 5.10.3, DQO Step 6, p5, pg. 5-194; 5.13.3, SWMUs 13-004, 16-035, and 16-036, p1, pg. 5-234; 5.16.3, DQO Step 6, pg. 5-278.
7. **SPECIFIC COMMENT (SWMU 16-001[c], pg. 5-4)** It is recommended that the dimensions of this tank be in the text. Is it the same size as tank 16-001(a)?
8. **SPECIFIC COMMENT (SWMU 16-001[d], pg. 5-5)** Any available information as to when this dry well was abandoned and when the floor grooves (drains) of building TA-16-208 were plugged should be in the text.
9. **SPECIFIC COMMENT (SWMU 16-001[d], pg. 5-5)** Was building TA-16-208 ever used to store containers of pesticides? If archival information indicates some uncertainty concerning pesticides, it is recommended that pesticides be added to the analytical suite (Table 5-3, pg. 5-12) for this SWMU investigation.
10. **SPECIFIC COMMENT (5.1.3, p1, pg. 5-9)** It is recommended that if PCOCs such as Cr⁺⁶ are detected within 2 feet of the blowdown tanks, sampling should continue until horizontal and vertical extent of contamination are defined at the tanks.

11. **SPECIFIC COMMENT (5.1.4.3, p3, pg. 5-15)** It is recommended that dry well 16-001(d) be sampled down to the soil-tuff interface within the well. Surface samples to be taken near the well should be bored down to two feet or the soil-tuff interface, whichever is encountered first, not 0 - 6 inches as stated in the text. This specific comment also applies to: 5.3.4.2, p1, pg. 5-96; 5.3.4.2, p2, pg. 5-96; 5.4.4.3, p4, pg.5-110; 5.7.4.2, p1, pg. 5-145; 5.8.4.2, p3, pg. 5-167; 5.8.4.2, SWMU 16-010(i), p3, pg. 5-170; 5.8.4.2, SWMU 16-010(l), p1, pg. 5-170; 5.8.4.2, SWMU 16-010(k), p1, pg. 5-170; 5.8.4.2, SWMU 16-010(n), p1, pg. 5-171; 5.9.4.2, p2, pg. 5-184; 5.10.4.2, p3, pg. 5-197; 5.11.4.3, SWMU 16-016(b), p2, pg. 5-213; 5.14.4.2, p3, pg. 5-258; 5.17.4.2, p1, pg. 5-289.
12. **GENERAL COMMENT** It is recommended that whenever possible, the dates be given in the text as to when MDAs, lagoons, pits, wells, tanks, sumps, outfalls etc., became abandoned or inactive.
13. **SPECIFIC COMMENT (Fig. 5-4, pg. 5-22)** SWMU 16-003(b) [6" VC pipe] is not shown on this figure. An approximate location should be indicated.
14. **SPECIFIC COMMENT (5.2.1.1, pg. 5-39)** It is recommended that when using archival information such as an interview from a former lab employee, the location of their work place and dates worked there be indicated as accurately as possible. In the text it states "Richard Daly, a longtime employee at S-Site and past group leader of WX-3 states that no plating operations were ever conducted in the building". The building in question (TA-16-450), was constructed in the early 1950's. Was Richard Daly employed at S-Site during the early 1950's and later?
15. **SPECIFIC COMMENT (5.2.2, p3, pg. 5-57)** It is recommended that the routine sampling of Water Canyon referred to in the text be referenced. It is unclear where the sampling locations in Water Canyon are relative to the outfall for TA-16-340 and when the routine sampling takes place.
16. **SPECIFIC COMMENT (5.2.3, pg. 5-61)** In order for LANL to conduct the VCAs planned for these drainages, it is recommended that screening be done for other PCOCs at locations where high explosives (HE) spot tests are performed. It is not recommended to use a one parameter 'indicator' field screening approach e.g., HE spot test, as the primary basis

for selection of laboratory samples during a Phase I investigation for two reasons: 1) The HE spot test has detection limits above SALs, and 2) in some areas, although HE is likely to be the main contaminant, it is unlikely to be the only contaminant. It is a reasonable possibility that other PCOCs will be overlooked if samples submitted for laboratory analysis are chosen only due to positive HE spot test screening results. Laboratory samples should be selected after a more thorough field screening approach using a combination of instruments such as: PID, FID, LIBS, etc., that are sensitive to all PCOCs which are reasonably likely to exist on site. All samples should be analyzed for Appendix VIII constituents (metals, VOCs, SVOCs, or a reasonable subset), before a reduced list of constituents can be used. When a reduced list or subset of Appendix VIII is proposed to be used for a Phase I investigation, a detailed technical explanation should be provided by LANL on a site by site basis. This comment also applies to: 5.2.4.1, p1, b2, pg. 5-79; 5.2.4.2, p2, pg. 5-80; 5.3.3, p1, b1, pg. 5-90.

17. **SPECIFIC COMMENT (Fig. 5-14, pg. 5-68)** Table 5-20, pg. 5-65 lists SWMU 16-003(b) as being investigated by 3 subsurface bore holes, these are not shown in Figure 5-14.
18. **GENERAL COMMENT - Chapter 5** It is not clear on several of the figures as to where the sumps and outfalls are actually located, notably figures: 5-14, pg. 5-68; 5-17, pg. 5-71; 5-20, pg. 5-74; 5-21, pg. 5-75; 5-22, pg. 5-76; 5-23, pg. 5-77; 5-24, pg. 5-78.
19. **SPECIFIC COMMENT (5.2.4.2, p2, pg. 5-79)** SWMU 16-029(g) samples are listed for rad screening in Table 5-20, pg. 5-66, but not listed in the text.
20. **SPECIFIC COMMENT (5.4, pg. 5-97)** It is recommended that figure(s) be added to the RFI showing the locations of this SWMU aggregate (SWMUs 11-005[a,b], 13-003[a,b], 16-006[a,c,d,e]).
21. **GENERAL COMMENT (5.5.2, DQO Step 2, pg. 5-114)** The cumulative toxic effects of multiple PCOCs should also be considered before proposing NFA. This general comment also applies to: 5.5.2, DQO Step 5, pg. 5-115.

22. **SPECIFIC COMMENT (5.6.1.2.2, p2, pg. 5-123)** It is recommended that adequate stakeholder involvement be obtained in the land use decision making process before proposing other than a residential land use scenario for a risk assessment at OU-1082. This comment also applies to: 5.7.1.2.2, p2, pg. 5-138; 5.9.1.2.2, p2, pg. 5-177; 5.14.1.2.2, p3, pg. 5-251; 5.14.2, DQO Step 2, p1, pg. 5-252.
23. **SPECIFIC COMMENT (5.6.4.3, p1, pg. 5-130)** It is recommended that SWMU 16-020 be investigated using a full suite laboratory analysis, not just Ag, CN and H₂O saturation as stated in the text. Laboratory samples should be selected after a more thorough field screening approach using a combination of instruments such as: PID, FID, LIBS, etc., that are sensitive to all PCOCs which are reasonably likely to exist on site. All samples should be analyzed for Appendix VIII constituents (metals, VOCs, SVOCs, or a reasonable subset), before a reduced list of target constituents can be used. When a reduced list or subset of Appendix VIII is proposed to be used for a Phase I investigation, a detailed technical explanation should be provided by LANL on a site by site basis. See Item 16.
24. **SPECIFIC COMMENT (5.7.2, DQO Step 4, pg. 5-141)** It is recommended to use a slant boring approach underneath most of these structures in order to determine if the soil has been impacted by past releases.
25. **SPECIFIC COMMENT (5.7.4.2, p3, pg. 5-147)** It is recommended that the core hole be drilled through the entire thickness of the Imhoff tank to the soil-tuff interface.
26. **SPECIFIC COMMENT (5.8.3, SWMU 16-010[1], pg. 5-164)** It is recommended that samples should also be taken from below the buried pipe at the end of the pipe's length.
27. **SPECIFIC COMMENT (5.8.3, South Drainage, p2, pg. 5-165)** It is recommended that an assumption of PCOC colocation not be used to design sampling or site characterization plans unless a technical explanation regarding the use of such an assumption is provided by LANL for review by NMED.
28. **SPECIFIC COMMENT (Fig. 5-36, pg. 5-168)** This figure is missing a topographic profile. This comment also applies to: Fig. 5-46, pg. 5-216.

29. **SPECIFIC COMMENT (5.10.3, SWMU 16-019, p1, pg. 5-190)** It is not recommended to use a three parameter (HE, U, Ba) field screening approach as a basis for selection of laboratory samples or site characterization of other PCOCs. Where archival knowledge of process indicates solvents or organics might have been used, the appropriate analyses should be conducted. Laboratory samples should be selected after a more thorough field screening approach using a combination of instruments such as: PID, FID, LIBS, etc., that are sensitive to all PCOCs which are reasonably likely to exist on site. All samples should be analyzed for Appendix VIII constituents (metals, VOCs, SVOCs, or a reasonable subset), before a reduced list of target constituents can be used. When a reduced list or subset of Appendix VIII is proposed to be used for a Phase I investigation, a detailed technical explanation should be provided by LANL on a site by site basis. This specific comment also applies to: Table 5-55, pg. 5-195.
30. **SPECIFIC COMMENT (5.10.4.2, p4, pg. 5-199)** It is recommended that a sample at the soil-tuff interface be analyzed along with the sample chosen by the hierarchical biasing scheme.
31. **SPECIFIC COMMENT (5.11.3, DQO Step 6, p1, pg. 5-207)** The number of samples proposed to be submitted for laboratory analysis is not appropriate for SWMU's of this size. See Item 6.
32. **SPECIFIC COMMENT (5.13.4.1, SWMU 13-001 & 13-002, pg. 5-239 & 5-240)** It is unclear how the 38 samples for laboratory analysis will be selected from this firing site. AIP is concerned as to the validity of using this type of sampling approach at firing sites (shallow-surface contamination [HE, natural and depleted U, Pb, other metals] by particulates that are dispersed by a detonation process). AIP Staff recommends that some biased shallow-surface sampling in prominent drainages and topographic lows supplement the 38 grid samples submitted for laboratory analysis. AIP and NMED regulatory staff will be meeting with DOE/LANL to discuss this issue in the near future.

33. **SPECIFIC COMMENT** (5.15.3, DQO Step 6, p2, pg. 5-265 & 5.15.4.2, pg. 5-268) It is recommended that 1 additional sample for laboratory analysis be collected from outfalls that empty out onto a moderate slope, this sample should be collected at 4' - 6' from the outfall discharge point or at the nearest sediment catchment within 10' from the outfall discharge point.
34. **SPECIFIC COMMENT** (5.17.1.1, p1, pg. 5-283) It is unclear when the storage courtyard was paved with asphalt. Was the courtyard paved after the storage yard was abandoned? In order to investigate the possible PCOCs at this SWMU, Phase I sampling should include core holes to soils below the asphalt or incorporate a slant drilling approach under the storage area.
35. **SPECIFIC COMMENT** (5.17.4.2, p1, pg. 5-2899 & 5-290) It is recommended that if no samples have a positive screening for PCOCs, two samples collected from obvious down-gradient portions along the edge of the asphalt pad should be analyzed.

NO FURTHER ACTION (NFA) COMMENTS

36. **GENERAL COMMENT** It is the standard procedure for AIP staff to evaluate NFA sites of greatest concern and then to provide technical comments to the EPA through the NMED RCRA Permits/Technical compliance staff. A list of NFA sites to be visited was submitted to the OU-1082 OUP and NMED RCRA Permits/Technical Compliance staff following a comprehensive review of Chapter 6. Based on an AIP Staff site visit on July 18, 1994, and all criteria mentioned in chapter 6 of the RFIW, all PRS NFA candidates of concern in Volume I OU-1082 are adequately addressed.
37. **GENERAL COMMENT** When proposing a potential release site for NFA to EPA based on archival data, the archival information and an assessment of its reliability should be provided for review. It is recommended that information such as an interview from a former lab employee, the location of their work place and dates worked there be indicated as accurately as possible. If sufficiently concise, archival data could be submitted as an addendum to the RFIW.