Ron K. ✓
Barbara ✓
Bruce ✓
Do we concur?

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

JUL 26 1994

> No concurrence. RCRA Technical never had chance to review. GW agreed. Note OU 1086 TA 15 has been proposed CAMU site

Mr. Joseph C. Vozella, Chief
Environment, Safety and Health Branch
Department of Energy
Los Alamos Field Office
Los Alamos, New Mexico 87544

Re: Notice of Deficiency, RFI Work Plan OU 1086
Los Alamos National Laboratory
NM0890010515

Dear Mr. Vozella:

The Environmental Protection Agency (EPA) has reviewed the RCRA Facility Investigation (RFI) Work Plan for Operable Unit 1086 (OU 1086) recieved July 7, 1993 and found it to be deficient. Enclosed is a list of deficiencies which need to be addressed within thirty (30) days of receipt of this letter.

Should you have any questions, please contact Barbara Driscoll at (214) 655-7441, and after August 1, 1994 at (214) 665-7441.

Sincerely,

for David Nelson
William K. Honker, P.E., Chief
RCRA Permits Branch

Enclosure (1)

cc: Mr. Benito Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department

Mr. Jorg Jansen, Program Manager
Environmental Restoration Program
Los Alamos National Laboratory, M992

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List of Deficiencies
Los Alamos National Laboratory
Operable Unit 1086

General Comments:

1. EPA agrees that the following units do not need to be added to the HSWA portion of the RCRA permit:

15-005(a), Container Storage Area
15-005(d), Lead Bricks
15-008(e), Pile of Dirt at TA-15-194
15-009(d), Building Drain
15-013(a), Underground Propane Tank
15-013(b), Underground Storage Tank
15-014(c), Sink Drain
AOC C-15-003, Pile of Black Granular Material
AOC C-15-002, Pile of Excavated Dirt
AOC C-15-009, Underground Fuel Tank

LANL may apply for a Class 3 permit modification to remove the following units from the HSWA portion of the RCRA permit:

15-004(e), Firing Point
15-004(i), The Gulch.

2. Descriptions of units and figures were lacking the detail necessary for anyone reading this work plan to properly evaluate if the sampling proposed in many instances was adequate. Even though there are numerous firing sites, septic tanks etc. at LANL they are all not alike in size, use etc. and a detailed description should be provided for each unit.

Specific Comments:

1. 1.4 Description of the TA-15 Operable Unit and Solid Waste Management Units, p. 1-10 - What portion of the test shots (detonations) were conducted below ground, and where are they located? A figure indicating the location of subsurface shots would be helpful.

2. 2.3 Environmental Monitoring at TA-15, p. 2-4 - What are the numbers for the two supply wells which were tested?

3. Conceptual Hydrogeologic Model, p. 3-21 -

a. The conceptual model as presented is confusing. The discussion of the discharge sink in the third paragraph indicates that contamination potentially from OU 1086 has been found in this sink which is located in OU 1130.

LANL needs to expand on this discussion and provide additional information concerning the interaction between the surface infiltration and the subsurface.

How does this sink interact with the alluvial or perched aquifers?

b. Figure 3.6-1 indicates three wells in or around the discharge sink; however, the figures in OU 1130 do not indicate these wells. Are these actual or proposed wells? If actual wells then sampling information related to the well logs, water level data and analytical data should be provided.

4. Potential Release Sties Recommended for No Further Action, p. 5-3 -

a. SWMU 15-014(g), Outfall from Cooling Water - There is insufficient information for EPA to make a determination on this SWMU. LANL shall provide information as to whether any hazardous constituents were ever released from this outfall.

b. SWMU 15-009(a); Septic Tank - What is period of time that this septic tank was used? What are the activities in Building TA-15-50? Why was the septic tank sampled for high explosives? All sampling data used for decisions should be provided in the work plan. LANL shall provide the sampling data discussed. Unless LANL can provide convincing evidence that no hazardous constituents were sent to this septic tank then it and the associated seepage pit need to be sampled. Is the outfall located in Canon de Valle or Water Canyon?

5. Potential Release Sites at R-40, SWMU 15-010(a), p. 5-6 - LANL shall clarify whether or not this unit received hazardous constituents?

6. Potential Release Sites at PHERMEX -

a. SWMU 15-014(l), p. 5-8 - Did the cooling towers receive heavy metals? Also, did cooling tower TA-15-202 receive any heavy metals?

b. SWMU 15-014(e), p. 5-8 - LANL shall confirm whether anything is added to the cooling water, and what parameters are analyzed at the permitted outfall.

c. AOC C-15-013, p. 5-9 - LANL shall clarify whether this tank is storing ethylene glycol or ethylene glycol monoethyl ether?

7. Potential Release Sites at R-45 -

a. SWMUs 15-007(c) and 15-007(d), Shafts, p. 5-9 - Were the shafts backfilled before the explosions or after? Are there any

hazardous constituents at the site besides high explosives (HE). Also, were there soil samples taken after the test to see if contaminants were absorbed during the explosive shot? Were any lithologic logs recorded during the drilling of these two shafts?

LANL shall respond to these questions.

b. Figure 5.3-4, p. 5-11 - LANL shall explain why lead shot is found at the surface of 15-007(c).
c. SWMU 15-014(f), p. 5-12 - Are there any additives to the cooling water?

8. Potential Release Site at Ector, SWMU 15-014(m), p. 5-13 - LANL shall confirm whether anything is added to the cooling water.

9. Unlocated, p. 5-13 -

a. SWMU 15-004(i) - What attempts were made by LANL to locate this unit? Does LANL know the size of the two tests which were performed?

b. SWMU 15-012(a) - What is the volume of oil LANL believes was used in this unit? LANL should provide the original archival information on this unit. Was this reported in the 1990 DOE report?

10. 6.1 Introduction, p. 6-1 -

a. 2nd paragraph - EPA questions how LANL can make the statement that beryllium is the only potential hazard to workers at TA-15, when LANL has not sampled for other heavy metals such as lead and mercury. Please clarify.

b. p. 6-2, 3rd paragraph - Is there any aerosolization of hazardous constituents occurring at these sites?

c. What type of surveillance measurements are made to determined the concentrations of beryllium, and what is the frequency of these measurements?

d. Comment on Active Firing Sites at TA-15: LANL should provide in the NOD Response all previous sampling results taken at each active firing site. This includes sampling done within the firing site and at the boundary of the firing site. EPA needs to review the sampling results to see whether deferring the RFI for the firing sites is acceptable.

Also, any proposed sampling to determine whether contaminants are moving past the boundary of each firing site should be approved by EPA, otherwise LANL is taking risk that EPA may determine at a later date that the sampling conducted was inadequate.

e. Page 6-2, Study #1 - LANL should analyze samples for total metals rather than TCLP as was done in the study. Also, the workplan states that the results from this study are to be completed in June of 1993.

Is this date correct? If it is, LANL shall submit the results of this study in the NOD Response.

11. Phermex Facility, p. 6-5 - What is the schedule for decommissioning of this SWMU?

12. 6.3.1 SWMUs 15-009(b), p. 6-5 - How was the septic tank connected to the building? Have hazardous wastes been introduced into the septic system since 1980?

13. 6.4.1 Site Description, p. 6-8 - What type of wastes were handled in the septic system at SWMU 15-009(c)?

14. 6.4.2 Potential Source Terms, p. 6-9 - What is the schedule for decommissioning firing site R-44?

15. 6.5.2 Potential Source Terms, p. 6-9 -

a. When sampling to determine concentration levels in the soil, LANL should sample and analyze for total metals, not TCLP, as was done at PF-MH-15A.

b. p. 6-10 - What type of wastes were handled in the septic system at SWMU 15-009(h)?

16. 7.2 Data Needs and Objectives and Investigation Rationale, p. 7-1 - LANL shall list the other contaminants known or suspected to exist at the E-F site. Also, please include a narrative describing the spot tests used for high explosives.

17. 7.3.5 Quantities and Locations of Potentially Hazardous Materials, p. 7-9 - LANL shall include the sampling results of the Cokal and Rodgers Study in the NOD response.

18. Chapter 7, pp. 7-17 through 7-20 -

a. EPA disagrees with the sampling strategy/locations devised for this SWMU. EPA believes a more judgmental sampling plan is appropriate for this particular circumstance. More samples should be taken in areas of high uranium concentrations, in areas nearest the firing points, and in the drainage paths close to the firing site boundary.

Fewer samples should be taken farther away from the firing points and at the lower uranium concentration areas.

Therefore, LANL shall submit all the subsurface samples indicated within the area of highest concentration of uranium for laboratory analysis of total metals. At least 30% of the samples located outside the contour map of uranium concentrations should be sent for laboratory analysis of total metals. All samples collected in the drainage shall also be analyzed for total metals. LANL shall revise the work plan accordingly.

b. LANL shall include the drainage points more clearly on this diagram (Figure 7.3-12). LANL may want to use a separate figure with topography indicated and surface drainage.

c. LANL shall include a more detailed map showing the sampling locations at points D, E, and F. From looking at Figure 7.3-12, no sampling points are shown.

19. 7.3.9.4 Sampling for Residual HE, p. 7-17 - EPA believes that most field tests for HE should be taken nearest the firing points, at high uranium concentration areas or in the drainage paths close to the firing site boundary. Therefore, if LANL is field testing 50% of the sampling points, the 50% should be concentrated within the area of highest residual uranium. LANL shall include on this map, or a separate map the areas to be field tested for HE.

20. 7.3.9.7 Vertical Extent of..., p. 7-19 - EPA does not agree that the quality of the soil in the mounds is fairly uniform (p. 7-18, 2nd paragraph). EPA believes that sampling of the mounds should be at the surface, mid point of the mound, and at the soil-tuff interface. All samples should be sent for laboratory analysis of total metals. The borings in between the mounds should be sampled in the same manner as indicated above, and should extend to at least 5 feet. LANL shall take 2 borings in each mound. LANL shall provide a figure which indicates the samples to be collected in the mounds.

21. 7.3.9.8 Sampling for Mercury, p. 7-20 - Is mercury a potential contaminant at this site? Was mercury used in any of the experiments? What is LANL's criteria for determining what fifty percent of the field samples are being screened? EPA recommends that most of the field screened samples should be taken in the highly concentrated uranium areas. LANL shall provide a figure indicating the location of sites to be field screened for mercury.

22. SWMU 15-008(a); Surface Disposal, p. 7-20 - LANL needs to provide a better description of these piles. Based on the information presented, LANL shall take three samples within each debris pile and at least one of these samples should be taken at

depth within the piles. All samples should be analyzed for total metals. LANL shall provide a figure of this site with sampling locations indicated.

23. 7.5 AOC 15-004; Transformer Station, p. 7-21 - LANL shall include a detailed map showing the sampling locations. LANL shall also include: the soil sampling method; the depth of the samples taken; and, what the samples will be field screened for?

24. 7.6 SWMU 15-009(e) Active Septic System, p. 7-21 - Do these systems have drain fields or release points? LANL needs to provide a better description of the unit. Also, LANL shall include a cross section of the unit showing depth of the unit, etc. and its relationship to the other TA-15 SWMUs. In addition, has this unit handled hazardous constituents in the past?

25. 8.3.1 Site Description, History and Potential Source Terms, p. 8-5 - Sampling results using TCLP methods are not very beneficial for corrective action determinations. When sampling to determine concentration levels in the soil, LANL should sample for total metals, not TCLP.

26. 8.3.2 Firing Sites A and B Sampling Plan, p. 8-9 -

a. first paragraph - How deep did the regrading process disturb the soil/rock vertically?

b. Was mercury used at these firing sites? If so, then field screening should be conducted for mercury independent of the results at the E-F site.

26. 8.4 Firing Site C, p. 8-12 - See comment # 25.

27. Firing Site C Sampling Plan, p. 8-12 - What is the basis for the 100 foot grid being used? Of a possible 50 sampling locations, 18 samples are being collected and 8 are being submitted for laboratory analysis. This is not adequate to characterize a site of this size. LANL shall take two more soil borings within the Firing Point C circle, and in these borings samples shall be taken at the surface and at two feet. All of these additional samples should be submitted for laboratory analysis. All grid points should be field screened. LANL shall revise their work plan accordingly.

28. 8.5.2 Sampling Plan for Firing Site G and Nearby Surface Disposal, p. 8-20 - LANL has not provided enough information about these units for EPA to adequately evaluate the sampling plans proposed. LANL should provide detailed descriptions of units, proposed sampling and figures with all sampling plans.

a. Field screening for beryllium should be included in the first paragraph.

b. If confidence is low that the contaminated area exceeds 30% then a 20% area should be used and a minimum of 14 samples should be collected, and 8 samples should be sent for laboratory analysis. Sampling locations should be judgementally picked closer to the firing point.

c. LANL shall provide a more detailed map showing the smaller SWMUs.

d. LANL shall provide a more descriptive narrative on the septic tank. The one provided is short. Does the septic tank have any associated piping, drain fields or other release points? Please clarify. Also, include a cross section of the unit showing depth of the unit. What sampling method is being used to obtain the sludge from the septic tank?

e. SWMU 15-008(c) - LANL shall a better description of the surfaced disposal area including size and the depth of disposal. What previous sampling has been conducted at this site.

29. 8.6.3 SWMU 15-010(c) Septic Tank, p. 8-26 - Why is LANL sampling at the end of the drain line if the drain only carries rainwater?

30. 8.7.2 Unnamed Burn Pit Sampling Plan, p. 8-28 - What are the actual dimensions of the pit?

31. 9.1.1 Landfill MDA N, SWMU 15-007(a) and Related Areas, p. 9-2 - Did photographic solutions during this time period contain volatile organics?

32. 9.1.3 Data Needs, p. 9-4 - The boundaries need to include the vertical depth of the unit.

33. 9.1.4 Sampling Plan, p. 9-4 - If the vertical depth of disposal is more than 2 feet, LANL will have to take deeper sampling intervals.

34. 9.2.2 Potential Pathways and Receptors, p. 9-7 - It may be more economic to survey the site for the mentioned contaminants, remove the material and then sample underneath the removed materials.

35. 9.3.1 Disposal Area SWMU 15-008(b) at R-44, p. 9-22 - Please include a map in the revised workplan showing the sampling locations and the corresponding concentrations found in the INEL 1987 Environmental Study.

36. 9.3.2 Sampling Plan, p. 9-15 - EPA believes that 5 borings should be taken from the debris pile since higher concentrations of contamination is likely here. Only 3 samples are needed over the canyon rim. In addition, all samples taken from the pile should be both surficial and at a determined depth, dependent on the depth of the pile. LANL shall revise the work plan accordingly.

37. 10.1.2 History and Potential Source Terms, p. 10-2 - LANL shall indicate the location of Water Canyon on Figure 10.1-1. LANL shall also describe the characteristics of the drain (SWMU -011(b)).

38. 10.1.5 Sampling Plans, p. 10-4 - It is not clear where the surface samples are being taken. However, a soil boring should be taken at the point where the outfall liquid hits the ground. One or two borings should also be taken next to the 50 foot deep seepage pit. Several intervals should be sampled in this boring. A soil boring should also be taken near the pipe that discharges into the main channel at 15-014(j). LANL shall revise the work plan as requested by EPA and provide a better description of the surface samples.

39. Figure 10.1-3, p. 10-6 - Why is LANL taking a boring from the east fork drainage system?

40. 10.1.5.2 PRSs East Side of the Hollow, p. 10-8 - LANL shall include a larger scale map of the SWMUs on the east side of "The Hollow". Also, LANL shall include the location of septic tank TA-15-51 on the map. In addition, include the sampling locations for 15-011(a), 15-014(k) and the trench drains.

41. 10.2.1.4 Sampling Plan, p. 10-14 -

a. 1st paragraph - List the constituents which are being sampled for in the EPA NPDES permit for 15-014(a). Do the outfalls exit next to the building or are they carried by underground pipe? Please clarify.

b. 2nd paragraph - Is LANL saying that rinse water runs east approximately 25 ft from the area of origination and ponds at that point?

c. Does the active Septic Tank system (SWMU 15-009(j)) contain any hazardous constituents and does it have a drain field, associated pipes, or outfall? Samples should be taken to a depth deeper than 2 feet. LANL shall provide the requested information and revise the sampling plan.

42. Figure 10.2-5, p. 10-17 - What is the significance of the broken pipe? Also, samples should be taken in between the 130 foot interval, preferably in ponding landscapes. LANL shall revise the work plan accordingly.

43. 10.2.2.4 Sampling Plan, p. 10-18 - EPA is requiring that subsurface samples be taken at all points and that each soil boring be located where the outfall hits the ground. Borings should go to at least 3 feet.

44. 10.2.3.1 Active Septic Systems, p. 10-18 - Is LANL saying that these two tanks have never received hazardous constituents in their lifetime? Please clarify.

45. 10.2.3.2 last paragraph, p. 10-21 - LANL shall include the sampling intervals for each boring.

46. 10.3.1.4 Sampling Plan, p. 10-22 - EPA is requiring a soil sample be taken at 3 feet for each boring.

47. 10.3.2 SWMU 15-010(b), p. 10-25, second paragraph - EPA is requiring that a soil sample be taken at three feet for each boring.