

JUN 23 1997

Mr. Benito Garcia, Chief
Hazardous and Radioactive
Materials Bureau
New Mexico Environment Department
2044A Galisteo Street
Santa Fe, NM 87505

Re: RFI Framework Report Comments, Los Alamos National Laboratory
(LANL), EPA I.D. NM0890010515

Dear Mr. Garcia:

The Environmental Protection Agency (EPA) has reviewed LANL's
RFI Framework Report, dated March 7, 1997, and offers the enclosed
comments.

Should you have any questions, please feel free to contact
Mr. Rich Mayer at (214) 665-7442.

Sincerely,

David W. Neleigh, Chief
New Mexico and Federal
Facilities Section

Enclosure

6pd-n:rmayer:6/13/97:a:RFIFRAME



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HSWA LANL 6/13/97

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COMMENTS ON LANL'S RFI FRAMEWORK DOCUMENT

Page ii, Contents: Please retain the Acronyms and abbreviations Section at the beginning of the report. It has been this way in the past and has proved very helpful to the reviewer.

Page 1; Field Activities: In each RFI Report, LANL should include soil boring/logging descriptions which contain PID/OVA readings of each boring. Also, each boring description should indicate all zones of visual or olfactory contamination.

Page 7; Hydrology: LANL should include a map in each RFI Report which includes within a 1 mile radius the nearest usable groundwater wells and the depth to groundwater.

Page 7; Section 2.3.1: LANL should include all drainages, wetlands, springs, and streams associated with each SWMU on a map.

Page 7; Section 2.3.2: Make sure that the well inventory in this section includes a map which indicates the depth of each well to groundwater, the groundwater flow direction and magnitude.

Page 7; Section 2.4: If LANL has taken any biological samples for analysis this information should be included in the RFI Report either here or in the appropriate section that pertains to previous investigations. It has come to EPA's attention that LANL has taken biological samples from small rodents within one of the canyons on site. Also, LANL may have biological samples from years past that may be useful.

Page 9; Data Validation (J+Qualifier Discussion): LANL should not assume that a positive detect exists only when a result is above the SAL. The decision to retain a chemical as a COPC should not be based on the SAL, but rather on established background data. Regardless, any result which is above the background data should be thoroughly investigated before assuming it is a false positive for the convenience of not carrying the constituent forward as COPC into the risk assessment.

Page 9; Section 3.1: Describe the samples taken, do not reference them in the workplan.

Page 9; Section 3.1.1: LANL needs to indicate for each sampling interval what analytical suites were performed. The EQLs and EDLs should be included in the table of analytical results for each SWMU.

Page 10; 6th paragraph: If a result is above background but less than SAL does not mean that EPA ignores the results or assumes that the site is acceptable for no further action. LANL should be aware that the vertical and horizontal extent of contamination must be defined in the RFI process. It appears that LANL is trying to get results below SALs therefore paving the way for a

no further action.

Page 13; Organic Chemicals: Has LANL tested for SVOCs from runoff areas near paved asphalt parking lots/streets? In previous reports/investigations of SWMUs that contained SVOC waste constituents, LANL tries to discount SVOC contamination as coming from parking lots, roads or rooftops. LANL should get soil sampling information from these areas to confirm their claim of contamination from the above mentioned areas.

Page 13; Risk Based Screening Assessment: Please note in the Report if Region 9 SALs are not being used, and clarify that Indian, State or other standards are being used. In addition, LANL needs to justify or explain in the report why a COPC which has no SAL was excluded from the screening assessment process.

Also, in the 3rd paragraph of the Section, LANL mentions that a site specific evaluation may lead to eliminating the COPCs without going into a formal risk assessment. Please explain this statement. This evaluation must meet EPA risk assessment procedures or protocol.

Furthermore, LANL needs to have an eco screening/risk assessment in each RFI Report. EPA cannot approve an NFA recommendation without one.

EPA has also noticed in some of the RFI Reports reviewed that LANL ignores certain chemicals from the risk assessment process even though the chemicals are above SALs, LANL commonly does this with SVOCs and in one report with PCBs. This not acceptable to EPA. Please revise your procedures.

Page 13; Human Health Assessment: LANL needs to include the background risk in the risk screens or in the "full blown" risk assessments.

Page 13, Section 3.2.4 Risk-Based Screening Assessment: First paragraph: It states, "Inorganic chemicals and radionuclides that exceed background and organic chemicals positively identified in one or more samples require further evaluation if they also exceed SALs.(emphasized) "

Inorganic chemicals that exceed background and organic chemicals positively identified in one or more samples require further evaluation, regardless of whether they exceed SALs. Therefore, the if-clause should be dropped out.

First paragraph, last Sentence: It states, "The decision to identify a chemical as a COPC...on a case-by-case basis, taking into account the availability of process knowledge and toxicological information." Unlike industrial production plants where the raw materials used in the process are quite consistent, LANL, due to the nature of a research environment, may use certain chemicals for a special project, and frequently leave no

records for special reasons. EPA believes, to identify a chemical as COPC, LANL should put more emphasis on the analytical results than on the availability of process knowledge and toxicological information. Process knowledge and toxicological information may be used to assist the investigation; it should not be used as the "sole source" to make the determination. EPA has seen this occur before at a site where LANL had no previous knowledge about a certain chemical but was later confirmed by sampling at the site. Second paragraph: It states, "These comparisons are the last quantitative steps in the screening assessment process for human health concerns. If COPCs remain after this step, then further evaluation is required."

LANL shall explain that the difference between the screening assessment process and further evaluation? Often, EPA notices that after completion of the screening assessment process, LANL continues to disqualify COPCs with justifications which are weak or contain less convincing evidence.

Page 13, Section 3.3 Human Health Assessment: Second paragraph, Section 3.3.1: It states, "Background risks are estimated for two statistics. One statistic is the median...The second statistic represents the upper range on background concentration values, and is either a calculated UTL or a maximum concentration value."

Please explain with an example how to apply the second statistical method to estimate background risk and how to get the maximum concentration value.

Page 15; Risk Assessment: If no human health risk assessment was performed, LANL needs to explain why it was not performed, such as a screening assessment was performed or that no concentrations were found above background or above acceptable detection limits.

Page 15; Eco Assessment: LANL needs to include one in each Report, otherwise, a NFA approval cannot be granted unless there is no contamination at the site.

Page 16; Results of Quality Assurance/Quality Control Activities: If holding times were missed for a sample, LANL needs to include how many days over the required holding time. This seems to occur quite frequently with mercury.

Quite often in the RFI Reports, LANL mentions that a particular request had constituent that was qualified by J, UJ, or R because of low recoveries, LANL needs to include the acceptable recovery ranges for the constituent being analyzed or discussed.

Page 17, Section 4.3 Organic Analyses: It states, "Unless one or more EQL values are elevated due to matrix problems, eliminate non-detected organic chemicals for which detection limits exceed

SAL values from further evaluation. (See Section 3.2.3, Organic Chemicals)."

Has LANL considered the possibility that the concentration of an organic in the sample could be higher than the SAL but lower than it's EQL? EPA needs to know what the value of the EQL used in the analysis for that specific organic to assist the decision-making process. If the EQL of a chemical is several orders of magnitude higher than its SAL, even though the result shows "undetected", the concentration of this chemical may well be above its SAL. LANL shall list the results of those organics along with their respective EQL.

Page 18; Section 5.1: LANL should include a physical description of each SWMU in the RFI Report. This way the reviewer can understand the logic in the way the SWMU was sampled. However, it may bring out the fact that there was no logic in the way the SWMU was sampled.

Page 18; Previous Investigations: Any previous sampling investigation should include all the results not just a summarization of the results or contaminants above background. All boring logs and field screening results should be included.

If a SWMU continues as an outfall, LANL needs to include all sampling data from that outfall required by a NPDES permit or by requirements of LANL or the State.

Page 18; Field Investigation: LANL needs to describe all deviations from the approved workplan and whether the deviations were approved by EPA.

Page 20; Top of page: LANL needs to include all soil boring logs/descriptions for each SWMU. Logs/descriptions should include the PID/OVA readings, the background PID/OVA readings, and should explicitly describe whether or not any visual or olfactory contamination exists.

Page 22; Table 5.1.5-1: LANL should include all inorganic results regardless of whether the result was not detected or was above background. LANL should also include the analytical method used to obtain the results.

Page 23, 3rd paragraph: It states, "If data has been rejected by focused validation using decision-specific criteria, then the data should not be used for decision-making purposes."

In any investigation, if data has been rejected by a focused validation using decision-specific criteria, LANL shall resample that location.

Page 27; Table 5.1.7-1: LANL should include all organic results regardless of whether the result (constituent) was not detected. LANL should also include the analytical method used to obtain the

results.

Page 29; Table 5.1.8-4: Under the carcinogenic effects of this table LANL calculated the effects of chemicals at a total of .9 What unit of measure is this? $.9 \times 10^{-6}$ or -5 or -4 ? This is not the proper way to determine the carcinogenic effect. Please see the Risk Assessment Guidance for Superfund in order to perform the carcinogenic calculations properly.

Page 30; Risk and Dose Characterization: LANL must include the background risk when performing the risk characterization.

Page 31; NFA paragraphs: LANL needs to make sure that the horizontal and vertical contamination is defined at a SWMU. EPA has noticed many times that LANL takes very shallow soil samples (.5 feet) from SWMUs that discharged liquid wastes for years. The sample results indicate a contaminant above background but below SAL. Say lead at 150 ppm. LANL then recommends a no further action on this SWMU. This is not acceptable to EPA. Now, if LANL had taken additional samples at 3 feet (40ppm) and at five feet (14 ppm), then EPA could agree with a NFA proposal, providing the eco numbers are acceptable.

Also, LANL needs to provide NFA justifications that are legitimate. For example, LANL samples a SWMU, that, by their own description discharged liquid SVOC waste. Then, LANL takes a shallow .5 foot soil sample and finds five SVOCs ranging from 15ppm to 5 ppm. Then, in the RFI report, LANL recommends NFA because the SVOCs came from the rooftops of nearby buildings or from nearby asphalt parking lots. Firstly, EPA does not accept this recommendation without further data, such as sampling the drainage area from the rooftops or the drainage area of the parking lots. Secondly, sampling to only .5 feet was flawed since the SWMU discharged liquid wastes, which may migrate deeper than .5 feet.

Page 32; Problem Definition: This Section is not necessary since EPA reviewer will know the problem.

Page 32; SAP design: EPA will not accept a sampling plan that has soil borings at a SWMU going to only .5 feet. At a minimum, LANL should have:

- 1) Locations of the soil borings on a map;
- 2) Indicate the vertical intervals to be sampled for each borehole;
- 3) Indicate the analytical method(s) to be used on each sampling interval;
- 4) Describe the sampling method used; and,
- 5) Describe the screening methods used on each borehole and include the results.

Just recently, EPA reviewed a report that contained a sampling and analysis plan (S & P) which included proposed sampling points and analytes, but then said that the proposed S & P was dependent

on a survey and that the sampling points may change dependent on the results of the survey. Do not send a S & P that is subject to change. All sampling and analysis plans must be "concrete".

Page 28, Section 5.1.8 Risk-Based Screening Assessment: EPA questions LANL's screening assessment approach used in the investigation. Multiple contaminants which are higher than their respective UTL but below SAL require further evaluation due to the potential for additive or synergistic toxic effects. That is what the Multiple Chemical Evaluation (MCE) approach is. MCE assumes simultaneous exposure to all constituents by a given receptor. The process shall include all the chemicals whose concentrations are greater than UTL and/or SAL. LANL has conveniently dropped some of the chemicals which have greater concentrations than their respective SAL and/or UTL prior to performing the MCE. In this way, the accumulative normal value is reduced; but this manipulation defeats the original purposes of MCE.

Page 33, Section 5.1.12.3 SAP Implementation: LANL shall specify what types of sampling (grab and/or composite samples) will be used in the analysis, provide the justification of the purposes, and detail how many samples will be used to form a composite sample. In the past, EPA translates "sampling" as grab sample. Unless LANL specifically prescribes that the sample will be composite sample in the work plan or sampling and analysis plan, the "sample" mean "grab sample". Please note that there will be very few instances where EPA will approve compositing of samples in a RFI.

Also, LANL shall specify how many samples will be sent to an off-site laboratory vs. how many samples will be examined at the on-site mobile laboratory.

Page 33; SAP Implementation, Field Methods: EPA does not want cites when it comes to the sampling methods.

Page 33; SAP Implementation, Measurement Methods: LANL may use field test kits to determine where to take samples; however, EPA will not accept test kits results as the only data for an RFI NFA decision.

Page C-1; Appendix C: Risk Assessment Calculations: Due to problems with risk assessment in past LANL RFIs, a short guidance on how to perform a proper MCE and exposure calculation should be included in the Appendix.