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TA-33

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

November 23, 1999

Dr. John Browne, Director
Los Alamos National Laboratory
P. O. Box 1663, Mail Stop A100
Los Alamos, New Mexico 87545

Mr. Theodore Taylor, Project Manager
Los Alamos Area Office
Department of Energy
528 35th Street, Mail Stop A316
Los Alamos, New Mexico 87544

**RE: Supplemental Information Request and AOC Acknowledgment
33-007(b), 33-010(c) and C-33-003 Voluntary Corrective Action Plan
Los Alamos National Laboratory
NM0890010515**

Dear Dr. Browne and Mr. Taylor:

The RCRA Permits Management Program (RPMP) of the New Mexico Environment Department's Hazardous and Radioactive Materials Bureau (HRMB) has reviewed the Voluntary Corrective Action Plan (LAUR-pending) for Potential Release Sites (PRSs) 33-007(b), 33-010(c) and C-33-003 dated April 27, 1999 and referenced by EM/ER:99-100. RPMP requests supplemental information as detailed in the attachment.

RPMP also acknowledges the receipt of LANL's letter dated April 21, 1999 regarding the identification of an Area of Contamination (AOC) at TA-33 associated with PRSs 33-007(b), 33-010(c) and C-33-003 (referenced by EM/ER:99-093). RPMP concurs with LANL's determination of the AOC boundary.

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Dr. Browne and Mr. Taylor
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LANL must respond to the request for supplemental information within sixty (60) days of the receipt of this letter. Should you have any questions regarding this letter, please contact me at (505) 827-1558 x1012 or Eliza Frank of my staff at (505) 827-1558 x1042.

Sincerely,



John E. Kieling
LANL Project Leader
RCRA Permits Management Program

JEK:eaf

attachment

cc w/ attachment:

J. Bearzi, NMED HRMB
E. Frank, NMED HRMB
P. Young, NMED HRMB
J. Davis, NMED SWQB
J. Parker, NMED DOE OB
S. Yanicak, NMED DOE OB, MS J993
D. Neleigh, EPA 6PD-N
J. Vozella, DOE LAAO, MS A316
J. Canepa, LANL EM/ER, MS M992
M. Kirsch, LANL EM/ER, MS M992
D. McInroy, LANL EM/ER, MS M992
File: Reading and HSWA LANL 3/1122/33

ATTACHMENT

The Potential Release Sites (PRSS) presented in this document include 33-007(b), 33-010(c) and C-33-003. PRSS 33-007(b) and 33-010(c) are listed in Table A of the Hazardous and Solid Waste Amendments Module.

General Comments:

1. The VCA plan asserts that the Segmented Gate System (SGS) is a proven innovative technology which was successfully used to sort uranium-contaminated soils at LANL. LANL should provide more detail to support this assertion, in particular, referencing previous reports and sites where SGS was demonstrated. HRMB has not reviewed previous information about the use of the SGS at LANL (the 1996 project report at TA-33 mentioned on page 4 was presumably submitted only to DOE). Regardless of the ability of the SGS to segregate uranium-contaminated materials at a specific concentration, HRMB has concerns regarding the implementation of the SGS. LANL needs to adequately address RCRA contaminants of concern prior to excavating the soil and effectively homogenizing and/or diluting the media through the SGS. Soil may be processed through the SGS numerous times as a means of reducing the volume of generated waste; however, this further homogenizes the soil. Prior to using the SGS, all potential contaminants of concern to human-health **and** the environment should be addressed. (See specific comment #1.)
2. *Section 1.1.2, Regulatory Driver and Record, page 4, paragraph 2.* "Upon completion of the VCA, LANL will submit a VCA Completion Report to the NMED requesting an NFA determination for PRSS 33-007(b) and 33-010(c)." LANL should collect all pertinent data to support an NFA determination. The VCA plan summarizes the results from previous investigations to determine the *potential* extent of contamination at the PRSS (e.g., page 13), but does not propose sampling adequate to address the extent of contamination. LANL needs to define extent in the drainages to the toe of the colluvium in the canyon systems to be investigated by the Canyons Focus Group. All sampling in the drainages and canyons should follow the canyons geomorphic/stratigraphic focused sediment sampling approach.
3. In the VCA plan, LANL proposes screening action levels (SALS) for an industrial receptor to further assess potential chemical risks to humans at these PRSS. The rationale is based on location, restricted public access and an expectation for future industrial land use at the site which is reflected in the LANL Future Land Use Map. However, the

assumptions upon which this rationale is based are not enforceable and do not reflect potential land use changes at LANL. Therefore, the VCA Completion Report should also present an evaluation of risk for a residential receptor to allow for comparison of current and potential future risk scenarios.

Specific Comments

1. *Section 1.0, Introduction, page 1.* "No chemical contamination has been found at these sites above risk-based levels." Specify whether the risk-based levels are protective of human health, the environment or both. The plan predominately addresses risk to an industrial receptor. HRMB believes it is premature to conclude that chemical contamination does not exceed risk-based levels since there is insufficient data regarding an ecological risk evaluation. At PRS 33-007(b), sample results for silver, chromium and zinc suggest levels of potential ecological concern (page 8). At PRS 33-010(c), sample results for copper, antimony and zinc are at levels of ecological concern. The VCA should delineate the extent to which these metals are present and specifically address taking action to address these potential contaminants of concern before the SGS activities are initiated.
2. *Table 2.1-1 and Table 2.2-2, pages 8 and 10.* The footnotes for these tables misidentify the references from which the background values and screening action levels were obtained and contradict the explanation provided within the text for how these values were derived. The background values within the table are described on page 8 as, "either the LANL upper tolerance limits (UTLs) of background sample results or detection limits (Ryti, et al., 1998, 59730.2)." The screening action levels are based on Region 9 **Preliminary Remediation Goals (PRGs)** [correct footnote], as stated on page 19. LANL should explain why particular table cells are shaded. Also within the footnotes for the tables, LANL should clarify that the PRGs used are for an industrial receptor. The screening action levels (SALs) seem to be derived in a manner inconsistent with the methodology prescribed in the 1998 Installation Work Plan. Due to the presence of multiple contaminants, the values for the SALs presented in these tables should be 1/10th of the PRG values. LANL should specify whether the values are protective of human health, the environment or both. Lastly, footnote "e" includes the statement that the conversion "from pCi/g to mg/kg was based on natural uranium." Explain the assumptions upon which this conversion was based. The calculation for the conversion should be provided in the plan.

3. *Section 3.0, Basis for Cleanup Levels, page 12, paragraph 1.* "The Residual Radioactive (RESRAD) computer code was used to determine concentrations of residual uranium acceptable to meet the proposed Environmental Protection Agency (EPA) dose limit of 15 mrem/yr. The calculations were determined for both recreational trail hiker and commercial or industrial worker scenarios. The potential radiation dose (PRD) limit for either scenario is achieved with soil concentrations of approximately 636 pCi/g for total uranium." Clarify why the dose limit of **15 mrem/yr** is referred to in the paragraph above, but the SAL for uranium in Tables 2.2-1 and 2.2-2 was derived using RESRAD and a target dose of a target dose of **10 mrem/yr**. The parameters, input values and assumptions used for RESRAD should be provided, as well as the rationale for the selection of these values and their applicability to LANL's site conditions.
4. *Section 3.0, Basis for Cleanup Levels, page 12, paragraph 2.* "A target cleanup level of 50 pCi/g would be lower than the LANL SAL for exposure of 90 pCi/g (67 pCi/g U-238, 10 pCi/g U-235, and 13 pCi/g U-234). Note that this exposure SAL may be converted to the LANL SAL for toxicity (29 mg/kg) by dividing the known activity by the specific activity for each of the isotopes and then summing the concentrations." Explain why uranium 234, 235 and 238 activities were added together. Explain why the determination was made to express SALs in terms of mass (mg/kg) rather than as activity concentrations, for example. Explain why isotopic natural equilibrium was assumed.
5. *Section 4.3.1, Removal, pages 14-15.* This paragraph describes briefly the removal activities that will occur, but a general description should also be provided of measures taken to prevent run-on and run-off from the piles as well as dust suppression efforts during operations.
6. *Section 4.3.1, Removal, page 15, paragraph 3.* "The holding areas and diversion piles will be lined with geotextile or straw. This will serve as a marker to differentiate between the diverted or stockpiled material and the original ground surface. To ensure that potential contamination does not remain following the VCA, some of the original surface material will be removed with the stockpiled material." Please clarify whether the former pile areas are included within the area that the radiation survey will cover during demobilization as described in Section 4.4 Site Restoration, page 16, paragraph 2.
7. *Section 4.3.2, Screening, page 15, paragraph 2.* "A front end loader will transfer this material to a designated area...and will spread the material so that it may be easily screened...." A more thorough description of the process (i.e. maximum depth of spread

soil) or reference to a previous report or Standard Operating Procedure (SOP) for this activity should be provided.

8. *Section 4.4, Site Restoration, page 16, paragraph 3.* "The material that is returned to the three PRSs will be piled and contoured to minimize future erosion." Clarify if additional backfill material will be deposited at the sites, the origin of that fill and how the area will be stabilized (e.g. seeded, best management practices implemented, etc.).
9. *Section 5.3, Use of Confirmation Sampling to Evaluate Risk, page 19, paragraph 2.* "For this evaluation the screening action levels (SALs) used for all PRSs are those derived by EPA Region 9 as reported in *Region 9 Preliminary Remediation Goals....*" The SAL values derived in the tables on pages 8 and 10 do not appear to be consistent with the methods prescribed in the Region 9 PRGs cited. SALs should be 1/10th of the PRGs due to the presence of multiple contaminants.
10. *Section 5.3, Use of Confirmation Sampling to Evaluate Risk, page 19, bullets 2 and 3.* "The industrial receptor is appropriate for this PRS because the potential for human exposure to contaminants is very low...this is a remote area of the Laboratory, and public access to the site is not allowed." LANL needs to provide additional rationale for selecting an industrial receptor scenario. It should reflect who might actually be present at the PRS, currently and in the future. The land use map designating the area as industrial is not adequate. Explain in more detail how public access is prevented. (See general comment #3.)
11. *Section 5.3, Use of Confirmation Sampling to Evaluate Risk, page 19, paragraph 3.* "Because these model-specific methods are different from the methodology used to evaluate other noncarcinogens, lead and uranium SALs should not be adjusted by 1/10th." Provide a toxicological-based rationale for not considering lead and uranium exposure as at least additive. This section describes an intent to perform an ecological screening assessment for the sample results obtained as part of the confirmation sampling. LANL should assess ecological risks based on sample data collected to date, prior to excavating soil for this VCA. The VCA only proposes to address uranium contamination. Confirmatory sampling and subsequent data assessment are proposed, but any residual contamination at the PRSs, particularly for contaminants other than uranium, should be addressed in terms of ecological concerns. The VCA plan addresses human health risks for the data collected previously, but not ecological risks. LANL should explain why environmental risks are not accounted for in the data presented in the VCA.

LANL should adequately characterize the PRSs prior to the soil homogenization/dilution that will result from using the SGS.

Miscellaneous Comments (No Response Required)

1. *Section 1.0, Introduction, page 1, paragraph 1.* "This document describes the voluntary corrective action (VCA) to be conducted...pursuant to a no further action (NFA) determination." The statement implies that the VCA is in response to an NFA determination, rather than being conducted with the intent to later request an NFA determination. LANL should clarify the intent of this statement, preferably selecting a more accurate term than "pursuant". In addition, if LANL intends to request an NFA determination in the near future for the PRSs addressed in this VCA plan it should be prepared to present sufficient data to support that determination, including characterizing the nature, rate and extent of contamination in the drainages to the location where the Canyons Focus Group investigation begins. (See general comment #2.)
2. *Page 7.* It appears that the page numbering inadvertently skipped page 7.
3. *Section 5.2, Sampling Design, page 16, paragraph 2.* "Sample handling procedures will conform to all applicable LANL ER SOPs, QPs, and LIRs." And *Section 6.3 Method of Management and Disposal, page 21, paragraph 1:* "The low-level radioactive wastes will be stored on site in an RCA until the results of the chemical analyses are known." An attached acronym list or more frequent definition of the acronyms used in the text is needed. Define "QPs," "LIRs" and "RCA".
4. *Section 8.0, References, page 22, reference 4.* "EPA. 1999. Region 9 Preliminary Remediation Goals (PRGs). (EPA, 1999, ER ID 54899.1)." This reference is different from the EPA PRG document (EPA 1998, 58751) cited within the VCA plan on page 19. The citation of references should be consistent.