

CANL TA 21



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Date: May 14, 2004  
Refer to: ER2004-0262



Mr. John Young, Corrective Action Project Leader  
Permits Management Program  
NMED – Hazardous Waste Bureau  
2905 Rodeo Park Drive East  
Building 1  
Santa Fe, NM 87505-6303

**SUBJECT: RESPONSE TO THE DISAPPROVAL OF THE VOLUNTARY CORRECTIVE ACTION COMPLETION REPORT OF SOLID WASTE MANAGEMENT UNIT 21-024(f) AND AREAS OF CONCERN C-21-015 AND 21-030**

Dear Mr. Young:

Enclosed please find the certification and two copies of the response of the Los Alamos National Laboratory Risk Reduction and Environmental Stewardship–Remediation Services (RRES–RS) to your disapproval of the Voluntary Corrective Action (VCA) Completion Report for Solid Waste Management Unit 21-024(f) and Areas of Concern C-21-015 and 21-030.

The RRES–RS project office received the disapproval of the VCA report on April 19, 2004.

If you have any questions, please contact Becky Coel-Roback at (505) 665-5011 or Woody Woodworth at (505) 665-5820.

Sincerely,

David McInroy, Deputy Project Director  
Remediation Services  
Los Alamos National Laboratory

Sincerely,

David Gregory, Federal Project Director  
Department of Energy  
Los Alamos Site Operations

DM/DG/RCR/th

Enclosure: (1) Response to disapproval (ER2004-0252)  
(2) Certification



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Cy: (w/enc)

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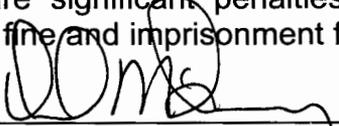
# CERTIFICATION

## CERTIFICATION BY THE RISK REDUCTION AND ENVIRONMENTAL STEWARDSHIP (RRES) PROJECT TECHNICAL REPRESENTATIVES

Document Title: Response to the Disapproval of the Voluntary Corrective Action  
Completion Report for Solid Waste Management Unit 21-024(f)  
and Areas of Concern C-21-015 and 21-030

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Name:

  
\_\_\_\_\_  
David McInroy, Acting Program Manager  
Remediation Program  
Los Alamos National Laboratory

Date:

5/13/04

or

\_\_\_\_\_  
Beverly A. Ramsey, Division Leader  
Risk Reduction and Environmental Stewardship Division  
Los Alamos National Laboratory

Date: \_\_\_\_\_

  
\_\_\_\_\_  
David Gregory, Project Manager  
Environmental Restoration Program  
Department Of Energy/Los Alamos Site Office

Date:

May 14/04

or

\_\_\_\_\_  
Herman LeDoux,  
Assistant Area Manager of  
Environmental Projects  
Department Of Energy/Los Alamos Site Operations

Date: \_\_\_\_\_

**Response to the Disapproval  
of the Voluntary Corrective Action Completion Report for  
Solid Waste Management Unit 21-024(f) and Areas of Concern C-21-015 and 21-030  
Dated September 2003**

**INTRODUCTION**

This submittal is the response by Los Alamos National Laboratory (LANL or the Laboratory) to the "Disapproval of the VCA Completion Report for Solid Waste Management Unit 21-024(f) and AOCs C-21-015 and 21-030," issued by the New Mexico Environment Department (NMED) Hazardous Waste Bureau on April 14, 2004. The "Voluntary Corrective Action Completion Report for Solid Waste Management Unit 21-024(f) and Areas of Concern C-21-015 and 21-030," LA-UR-03-5441 (LANL 2003, 83093), was submitted by LANL to NMED in September 2003.

To facilitate review of these responses, the NMED's comments are included verbatim. LANL's responses follow each NMED comment.

**SPECIFIC COMMENTS**

**NMED Comment**

1. **Section 2.3.1.2 SWMU 21-024(f) Septic Tank and Line Removal and Confirmation Sampling Activities, p. 10, paragraph 5**

*This paragraph describes the use of a photo ionization detector (PID) to field screen for VOCs. The Permittees must provide more information regarding the screening and calibration methods used, frequency of detection, lamp voltage(s) used, sample collection methodology, and specific name of the instrument.*

**LANL Response**

1. A PID (HNU model 101, serial number 367082) was used to screen samples for volatile organic compounds (VOCs). The PID was equipped with an 11.7 kilo-electron volt (KeV) lamp and was calibrated daily using 100 ppm isobutylene calibration gas and ambient air standards. In-place soil was screened immediately as pipe was removed to help identify potential sample locations. Sample material was screened directly in the stainless steel bowl during collection via spade and scoop or hand auger methods. No elevated levels of VOCs (i.e., no detections above ambient air readings) were encountered during pipe removal or confirmation sampling. The trace and estimated concentrations of VOCs in confirmation samples, as determined by fixed-laboratory analysis, verify the field screening results.

**NMED Comment**

2. **Section 2.3.1.3 SWMU 21-024(f) Outfall Slope Sampling, p. 12, bullet identification section**

*Fracture flow was not addressed in this investigation. The Permittees must provide information on possible contaminant migration through the tuff in the outfall area.*

## LANL Response

2. Several lines of evidence indicate there was neither adequate throughput from the outfall, nor leakage from the system, to create the saturated conditions necessary for fracture flow in the Bandelier tuff. As stated on page 3 of the Voluntary Corrective Action (VCA) completion report, "the volume of liquid discharged into the pit was unknown but presumed to be small, based on the facilities served by the septic tank (i.e., one sink and one toilet) and the lack of a distinct drainage channel leading from the pit."

Field screening results and visual observations indicated there was no pooling or accumulation of wastewater beneath the septic system structures to indicate significant leakage. Direct field screening for radionuclides and VOCs was performed along the entire length of pipe excavated from the solid waste management unit (SWMU) and areas of concern (AOCs). There were no elevated readings anywhere within the excavation, including fractured areas. Field screening conducted during drilling activities likewise indicated no elevated levels of radionuclides or VOCs in fractured or unfractured tuff.

Fixed-laboratory analytical data indicated levels of contamination within the outfall pit were below screening action levels (SALs). Fractures beneath the pit would not have received substantial quantities of contamination when the surface soils, known to have been directly impacted by intentional discharges from the system, did not. Analytical results for tuff samples collected beneath the outfall pit show decreasing trends of contaminants, with maximum concentrations well below SALs.

## NMED Comment

3. **Section 2.3.1.4 AOC 21-030 Outlet Line/Sump Removal and Confirmation Sampling Activities, p. 14, paragraph 1 and p. 17 paragraph 1**

*The Permittees describe the equipment for screening alpha and beta/gamma radiation on page 14 (paragraph 1), but do not address the instrument used to screen VOCs. The Permittees must provide information about the field screening instrument, and the sampling and calibration methods used to screen VOCs (see also specific comment #1).*

## LANL Response

3. Core samples were screened for VOCs immediately upon opening the core barrel sampler. No elevated levels of VOCs (i.e., no detections above ambient air readings) were detected during core sampling. See response to comment #1 for details on instrumentation and calibration.

## NMED Comment

4. **Section 2.3.1.4 AOC 21-030 Outlet Line/Sump Removal and Confirmation Sampling Activities, p. 17, paragraph 2**

*The Permittees must explain how the fill/tuff interface was identified.*

#### LANL Response

4. The fill/tuff interface was identified by hand-augering down through fill until solid bedrock was encountered. Once sampling personnel hit the Bandelier tuff (Qbt3), resistance to hand-augering noticeably increased. Material recovered from the hand-auger bucket was evaluated to confirm the material being sampled was tuff. Once tuff material was encountered, a distinct change in the appearance of hand-auger cuttings was noted.

#### NMED Comment

5. **Section 2.3.2.1 Inorganic Chemical Comparison with Background, p. 19, paragraph 4**

*The paragraph identifies oxalate as not being a historical contaminant at the LANL facility and, therefore, was not retained as a COPC. In the well completion report for R-9, the Permittees identified oxalate as a COPC at TA-21 [regional well R-9(i)]. The Permittees shall include oxalate as a COPC and revise the report accordingly.*

#### LANL Response

5. The statement that oxalate is not a historical contaminant at the Laboratory will be deleted. In addition, the statement in the data review (Section 2.3.2.1, page 19) will be changed to read "Oxalate, detected in one sample near the DL, does not have an established BV and is retained as a COPC."

Oxalate was detected in one sample at 0.931 mg/kg at the surface in fill within the footprint of Building 21-45 (AOC C-21-015). This detected concentration is at the lower range of the concentration/detection limits reported for the fill samples analyzed and approximately in the mid-range of concentrations/detection limits reported for all samples (fill and Qbt3). There is no toxicity information for oxalate. The EPA Region 6 risk assessor (Cheryl Overstreet) was contacted for any information available on oxalate; she was not aware of any toxicity information for oxalate. However, oxalate is naturally occurring in many foods and is excreted as oxalic acid in animal and human urine. Its infrequent and low-level detection in one sample does not indicate that it poses a potential unacceptable risk to human or ecological receptors. A statement to this effect will be inserted into the uncertainty analysis for the human health and ecological screening assessment sections of the report, upon acceptance of this response by NMED.

#### NMED Comment

6. **Section 2.3.3.1 Nature and Extent of Contamination, (Inorganic Chemicals) p. 62, paragraph 4**

*The Permittees cannot dismiss perchlorate as a potential contaminant from the septic system. A septic tank is periodically pumped out and processes change overtime. The material in the tank during sampling may not be what was in the tank during a release. Therefore, perchlorate could be a result of a release from the septic tank.*

#### LANL Response

6. As per the agreement in the record of communication (ROC) with NMED dated 15 August 2001 (LANL 2001, 70218), the confirmation analytical suite was based on waste characterization results. This agreement was made with the assumption that, because the tank had an outlet, it would not

have been pumped. Therefore, tank contents should reflect the types of materials disposed of in the septic system. Although the tank contents were not found to include perchlorate, it was included in the analytical suite for selected samples as a potential TA-21 contaminant, per the ROC.

The intent of the nature and extent discussion was not to eliminate perchlorate as a COPC but rather to explain that its presence may not be related to the septic tank since it was not detected in the contents. Therefore, perchlorate was retained as a COPC and assessed in the human health and ecological screening assessments as presented in Table 2.4-2 and discussed on page 88, respectively.

#### **NMED Comment**

7. **2.3.3.1 Nature and Extent of Contamination, (Summary of Nature and Extent) p. 69, paragraph 3**

*This statement contradicts the rest of the paragraph. Analytical data detected inorganic chemicals above background values and radionuclides above their respective background/fallout values. Contaminated soil was also removed from the outfall pit. Therefore evidence of a release of contaminants to the environment did occur.*

#### **LANL Response**

7. The report states there was no evidence of a release from the septic tank or sump and associated piping *based on field screening and visual observations*. That is, there were no field instrument detections and no staining or odors observed beneath the tank, sump, or lines. However, the results of field screening and visual observation are superceded by fixed-laboratory analytical data. Therefore, LANL will delete the statement.

#### **NMED Comment**

8. **2.4.1.1 Human Health (Screening Evaluations (b)), p. 73, paragraph 4**

*NMED is interested in evaluating the total risk posed by all of the COPCs at sites. NMED requests that the Permittees include a screening assessment calculated on risk rather than or in addition to dose.*

#### **LANL Response**

8. The Department of Energy (DOE) has an agreement in principle with NMED regarding reporting of risk due to radionuclides. Per the agreement between DOE and NMED, LANL will voluntarily provide the total dose for radionuclides of potential concern and the equivalent total radionuclide risk level for each site that is the subject of an environmental investigation.

The exposure concentrations for radionuclides at SWMU 21-024(f) and AOCs C-21-015 and 21-030 were compared to EPA's preliminary remediation goals (PRGs) for radionuclides presented at [epa-prgs.ornl.gov/radionuclides/prg\\_search.shtml](http://epa-prgs.ornl.gov/radionuclides/prg_search.shtml) using a residential exposure scenario. Based on this PRG comparison, the total radionuclide risk associated with the exposure concentrations of radionuclides in soil is approximately  $1 \times 10^{-6}$ . This text will be added to the conclusion section of the report upon acceptance of this response by NMED.

## **REFERENCE**

The following list includes all documents cited in this document. Parenthetical information following each reference provides the author, publication date, and ER ID number. This information is also included in text citations. ER ID numbers are assigned by the RRES-RS Records Processing Facility (RPF) and are used to locate the document at the RPF.

LANL (Los Alamos National Laboratory), August 2001. Environmental Restoration Project record of communication to Vickie Maranville (NMED-HWB) from Paula Bertino (ER Project), Los Alamos, New Mexico. (LANL 2001, 70218)

LANL (Los Alamos National Laboratory), September 2003. "Voluntary Corrective Action Completion Report for Solid Waste Management Unit 21-024(f) and Areas of Concern C-21-015 and 21-030," Los Alamos National Laboratory document LA-UR-03-5441, Los Alamos, New Mexico. (LANL 2003, 83093)