

Los Alamos

NATIONAL LABORATORY
Environmental Restoration Project
EM/ER, MS M992
Los Alamos, New Mexico 87545
(505) 665-4557, FAX 665-4747

Date: May 1, 1996
Refer to: EM/ER:96-241

Mr. Ted Taylor
Los Alamos Area Office
US Department of Energy, MS A316
Los Alamos, NM 87544

**SUBJECT: FINAL VOLUNTARY CORRECTIVE ACTION (VCA) PLAN FOR
ACTIVITIES AT TECHNICAL AREA (TA) 35, POTENTIAL
RELEASE SITE (PRS) 35-009(a)**

Dear Ted:

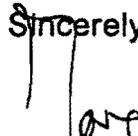
Enclosed for your records please find a copy of the final VCA plan for activities in TA-35, PRS 35-009(a). This activity is planned for completion in Fiscal Year 1996.

Your Field Project Coordinator participated in developing and reviewing this plan. The VCA Checklist and Field Authorization Form have been completed and signed and are included in the enclosed plan.

Informational copies of this VCA Plan are also being distributed to the regulators.

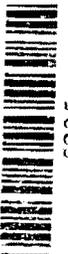
If you have any questions, please call Allyn Pratt at (505) 667-4308 or Bob Simeone at (505) 667-0587. Thank you for your cooperation in this matter.

Sincerely,


Jorg Jansen, Program Manager
Environmental Restoration

JJ/bp

Enclosures: Final VCA Plan for TA-35, PRS 35-009(a)
VCA Checklist and Field Work Authorization Form



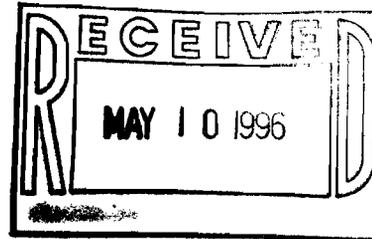
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Cy (w/enc.):

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**Voluntary Corrective
Action Plan for**

Potential Release Site

35-009(a)

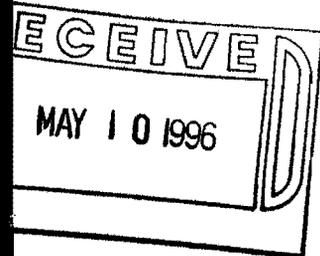
Abandoned Septic Tank

Field Unit 4

**Environmental
Restoration
Project**

April 1996

**A Department of Energy
Environmental Cleanup Program**



Los Alamos
NATIONAL LABORATORY

LA-UR-96-1471

1.0 INTRODUCTION

This document describes the voluntary corrective action (VCA) plan for Potential Release Site (PRS) No. 35-009(a), which is located within Los Alamos National Laboratory (the Laboratory) Technical Area (TA) -35 on Ten Site Mesa. This PRS has been selected for VCA because the remedy is obvious, is easily implemented, and will prevent potential future environmental and safety hazards associated with the buried septic tank.

PRS No. 35-009(a) is included in Table A of the Environmental Protection Agency original Resource Conservation and Recovery Act (RCRA), Module VIII, Hazardous and Solid Waste Amendments permit. A RCRA facility investigation (RFI) was performed for this PRS in 1994. The PRS is being recommended for no further action (NFA) in the RFI report for TA-35 (hereafter referred to as the RFI report), which is currently being prepared, because no RCRA constituents were released to the environment. However, the VCA is planned to remove and dispose of the liquid and sludge in the tank and to properly abandon the tank according to state of New Mexico regulations.

1.1 Site Type and Description

PRS No. 35-009(a) is an abandoned sanitary septic system that served building TA-35-2 and the associated buildings at the southeastern portion of TA-35. Structures associated with the PRS include a 1,500-gal. septic tank (TA-35-14), a dosing chamber (TA-35-15), a distribution box (TA-35-16), and the leach field (See Figure 1).

The septic tank and the dosing chamber (hereafter referred to as the tanks) are located in an asphalt driveway southwest of building TA-35-34. The tanks are buried about 4 ft beneath fill material. Access to the tanks is accomplished through a 2.5-ft-diameter manhole and a 4-ft vertical corrugated metal pipe. The tanks are made of steel or steel-lined concrete. They are about 10 ft long by 4 ft wide and may be about 5 ft deep.

The distribution box is located south of the southern TA-35 access road, about 90 ft south of the tanks. The distribution box leads to three leach field drain lines in a filter bed near the southern edge of Ten Site Mesa. The filter bed covered an area about 6,000 ft², but at the time of the RFI most of the filter bed material had been excavated and removed from the site.

The topography of the area slopes moderately southward toward the edge of Ten Site Mesa. The septic tank area is covered with asphalt, whereas vegetation in the leach field consists of scrub oak brush, grasses, and ponderosa pine. No natural water courses are defined within the PRS, although two natural storm-water surface drainage channels drain the leach field southward toward Ten Site Canyon.

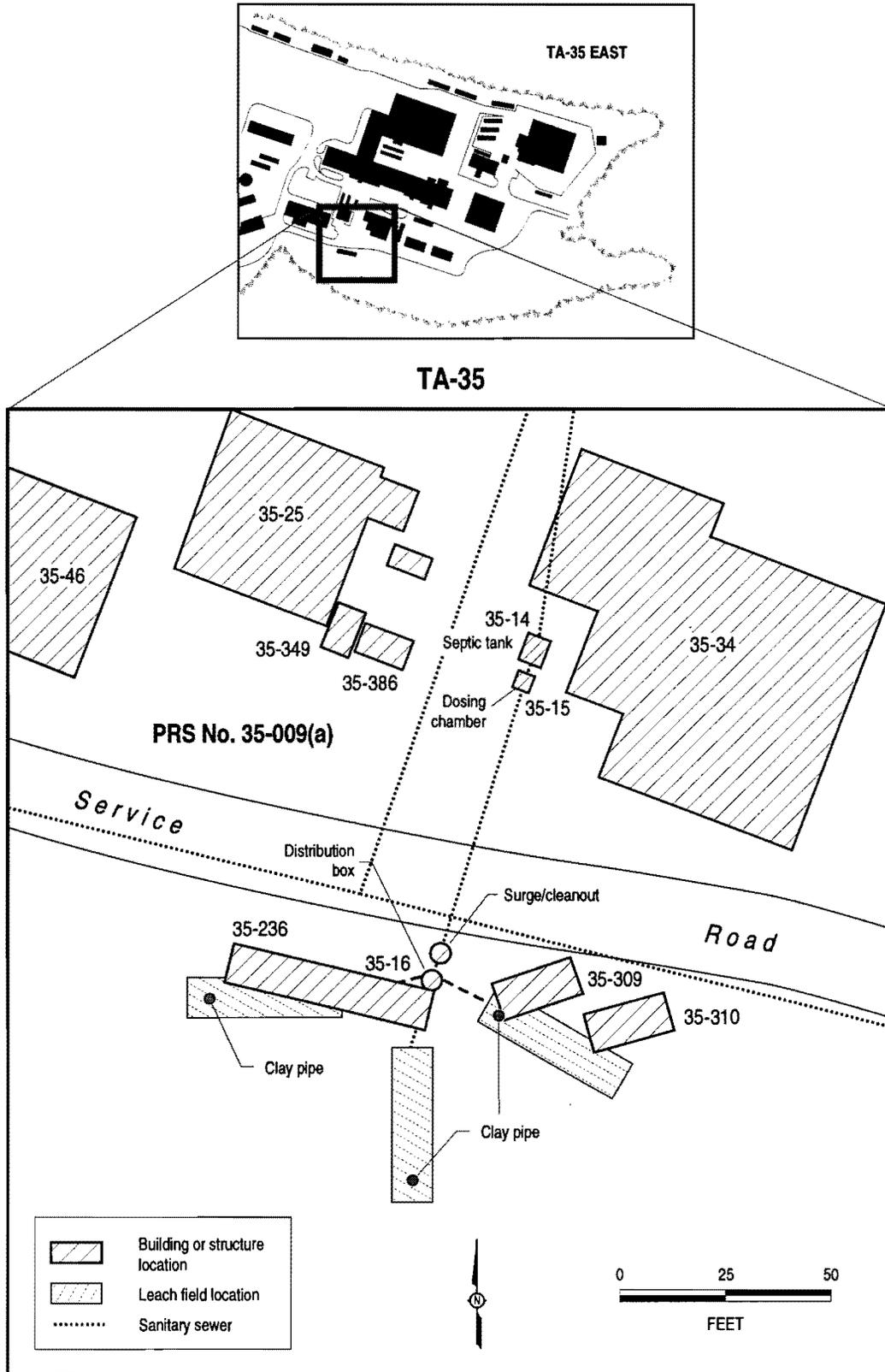
1.1.1 Operational History

PRS No. 35-009(a) is described in Section 3.3.2 of the *RFI work plan for Operable Unit 1129* (LANL 1992, 7666).

The septic system served TA-35 between 1951 and 1975 and was abandoned in place when new sanitary sewer lines were routed to the new sewage lagoons in the canyon east of TA-35. The septic system was a gravity flow system that handled sanitary wastes from TA-35-2 and may have received a variety of industrial wastes including radionuclides. Specific information concerning waste streams introduced to the septic system is not available.

1.1.2 Chemicals of Potential Concern and Rationale for Proposed Remedial Action

No chemicals of potential concern are present at levels above the screening action levels (SALs).



Source: LASL 1955 (ENG-R 1352, Sh. 2 of 2, Rev. 2); LANL 1986 (ENG-R 5117, Sh. 3 of 3, Rev. 23)

F 1 / VCA PLAN_35-009(a) / 040696

Figure 1. Location map for PRS No. 35-009(a).

2.0 SITE CHARACTERIZATION

2.1 RFI Information and Other Decision Data

The description and results of the RFI for PRS No. 35-009(a) are presented in the RFI report (in preparation). A summary of the RFI activities is presented here. Analytical results from the RFI are presented in the RFI report.

RFI field activities for the PRS included engineering surveys, a radiation grid survey, and a health and safety radiation survey. Field screening during site surveys and sample collection activities was performed using a Hazco 1256 organic vapor analyzer, a Ludlum Model 39 alpha meter, and an Eberline ESP-1 beta/gamma meter.

A total of 11 locations were sampled, and 41 samples were collected: 1 water sample (for waste characterization purposes), 2 surface soil samples, and 38 subsurface soil samples (not including quality assurance/quality control samples). No radiological anomalies or organic vapors were detected by the health and safety officer during field screening of samples and cuttings.

The RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain nonhazardous chemical waste found at levels below SALs (see the Waste Characterization Strategy Form in Section 7.7).

3.0 PROPOSED REMEDY

3.1 Description of the Proposed Remedial Action

The VCA activities to be performed at PRS No. 35-009(a) entail removing the contents of the tanks and excavating and removing the septic tank, dosing chamber, cleanout manhole, and distribution box, if possible. If the tanks and associated structures are not easily extractable, the tanks will be filled with concrete or pea gravel and abandoned in place. The liquid and sludge contents of the tanks will be removed using a vacuum suction truck, and the tanks will be pressure sprayed and rinsed with fresh water. The rinse water will also be removed using the vacuum suction truck.

If possible, the tanks will be removed by excavating the soil around them. The connecting pipelines will be cut and plugged or grouted in accordance with the New Mexico Uniform Plumbing Code 1-11. The cleanout manhole and the distribution box will also be excavated, and the manhole debris will be removed. The tanks and associated structures will be removed and demolished on-site and transported to the appropriate waste-handling facility.

The leach field will not be addressed by the VCA because the RFI did not find contaminants present above SALs and because no risk to the environment or to human health and safety are present in the leach field.

The excavated soil and supplemental clean backfill material will be used to fill and relevel the site to its pre-VCA condition.

3.2 Basis for Cleanup Levels

PRS No. 35-009(a) is located on a mesa top on Department of Energy-owned land. The area is removed from public access roads. In the foreseeable future, the land is anticipated to be used exclusively for Laboratory (industrial) operations (LANL 1994, 53451).

This VCA is driven by human health and safety considerations for leaving empty underground structures in place. Because the site is located in an area that is highly industrialized, the tanks will be removed if possible, and the site will be filled to withstand future industrial traffic or construction. The VCA for this site will not be conducted in response to a known release or potential for release; therefore, no cleanup levels are applicable.

3.3 Site Restoration

After the structures associated with the septic system are removed, the excavated area will be returned to the original grade and revegetated. Backfill material will consist of clean soil from the site excavation and clean backfill obtained from the Laboratory maintenance contractor. The backfill material will be compacted according to Laboratory standards, and the site will be repaved with asphalt after the VCA is completed.

Table 1 shows the standard seed mix that is recommended by Laboratory Group FSS-8.

4.0 WASTE MANAGEMENT

4.1 Estimated Types and Volumes of Waste

Table 2 lists the estimated types and volumes of waste that will be generated during VCA activities.

4.2 Method of Management and Disposal

Because of the possibility for generating hazardous waste, the personal protective equipment (PPE) waste generated from the VCA activities may be stored until final disposal in a satellite accumulation area. The process, as described on the Waste Characterization Strategy Form, will be conducted in accordance with the Environmental Restoration (ER) Project administrative procedure LANL-ER-AP-05.3, "Management of Environmental Restoration Program Wastes" (LANL 1992, 11686).

The sludge and liquid in each tank will be removed by a vacuum/pumper truck and transported directly to the approved waste disposal facility at a location to be determined with guidance from Laboratory group CST-5. PPE waste will be conservatively characterized by associating liquid and sludge sample analytical results to the waste. The solid waste generated by disposal of the concrete and steel tanks is expected to be classified as nonradioactive, nonhazardous waste. It will be disposed of at an appropriate waste-handling facility.

TABLE 1
STANDARD SEED MIX

Percentage	Type
3 – 7%	Sand dropped
8 – 12%	Galleta grass
6 – 10%	Alkali sacaton
10 – 14%	Sideoats grama
13 – 17%	Indian ricegrass
18 – 22%	Sheep fescue
8 – 12%	Blue grama
18 – 22%	Western wheatgrass

TABLE 2
ESTIMATED WASTE FOR PRS No. 35-009(a)

Item	Waste Type	Anticipated Volume
Personal protective equipment	Solid	1 5-gal. pail
Liquid and sludge	Liquid	1,500 gal.
Structure debris	Solid	600 ft ³

5.0 DESCRIPTION OF CONFIRMATORY/VERIFICATION SAMPLING

Because PRS No. 35-009(a) has been recommended for NFA, no confirmatory or verification sampling is required for this VCA. The analytical data for this PRS are presented in the RFI report.

6.0 ESTIMATED TIME TO COMPLETE THE ACTION AND UNCERTAINTIES

The time required to perform the VCA is estimated to be approximately three to five days. Uncertainties are related primarily to the extent of the excavation that will be required to remove the tanks and the structural soundness of the tanks.

7.0 ANNEXES

7.1 Risk-Based Cleanup Level Assumptions and Calculations

PRS No. 35-009(a) has been recommended for NFA in the RFI report (in preparation). The RFI report contains the RFI data and all the assumptions and calculations pertinent to this PRS.

7.2 RFI Analytical Results

The analytical results are contained in the RFI report.

7.3 Site Map

Figure 1 is a site map of PRS No. 35-009(a).

7.4 Implementation Standard Operating Procedures

See Volumes I and II of the ER Project standard operating procedures, as updated to 1995 (LANL 1991, 21556).

7.5 Quality Assurance Plan

The ER Project *Quality Assurance Project Plan Requirements for Sampling and Analysis* (LANL 1996, 53450) will be followed throughout the VCA activities.

7.6 Site-Specific Health and Safety Plan

The VCA will be performed in accordance with the approved site-specific health and safety plan, which is attached.

Los Alamos National Laboratory

ER PROJECT SHORT FORM SSHASP

SSHASP Number 117

Location TA-35 PRS 35-009 (a) Field Unit 4

Task Name Voluntary Corrective Action Date _____

SSO Approval [Signature] Date 4/4/96

Field Project Leader Approval [Signature] Date 4/4/96

Field Unit HS Rep. Approval William J. High Date 4/4/96

ESH-1 ER/D&D Team Leader [Signature] Date 4/4/96

Subcontractor HS Approval [Signature] Date 4/5/96

Field Team Manager Approval Deba Daymon Date 4/4/96

Key Personnel

Facility Representative Pete Bussolini Phone/Pager 667-0370

Field Team Manager Deba Daymon Phone/Page 662-1327/470-1092

Field Team Leader Leslie Sontag Phone/Pager 672-3666/699-1702

Site Safety Officer Darril Stafford Phone/Pager 672-3666/699-2762

RCT/HPT/RSP) Darril Stafford/John Hayes Phone/Pager 672-3666/699-2762

Field Unit HS Representative Bill Brazile Phone/Pager 665-5128/104-6845

ESH-1 Oversight Marty Peifer Phone/Pager 667-0083/104-6649

Task Description

PRS No. 35-009(a) is a sanitary septic system that served TA-35 between 1951 and 1975. The septic system handled sanitary wastes from laboratory building TA-35-2 and may have received a variety of industrial wastes including radionuclides. Structures associated with PRS 35-009(a) include a 1,500-gal. septic tank, a dosing chamber, a distribution box manhole, and the leach field. The septic tank and dosing chamber are located in a driveway area near the southwest side of TA-35-34. The septic tank is buried about 4 ft deep beneath fill materials and the site is covered with asphalt. The distribution box is located south of the southern TA-35 access road, about 90 ft south of the septic tanks. The VCA activities to be performed at PRS No. 35-009(a) include removing the contents of the septic tank

(task completed - performed under SSHASP No. 107), and removing the septic tank, dosing chamber, and distribution box. The tanks will be removed by excavating the soil from the top of the tanks and from around the perimeter of the tanks. The connecting pipelines will be cut and plugged or grouted in accordance with the New Mexico Uniform Plumbing Code. The distribution box manhole will also be excavated, and the manhole debris will be removed. The tanks and associated structures will be removed from the ground and demolished on site for transport to the appropriate waste handling facility. The excavated soil and clean backfill materials will be used to fill and relevel the site to its pre-VCA condition. The fill material will be compacted according to laboratory standards and the site will be re-paved with asphalt after completion of the VCA.

Hazard Analysis

List all chemical, biological, physical, and radiological hazards associated with this task including hazard assessment ratings (ER Project HASP, Appendix C).

Chemical/Radiological: _____ The contents of the tank were classified by CST-5 as non-hazardous and non-radioactive. The contents have been removed and transported to an off-site disposal facility. No media containing chemical or radiological constituents remain within the PRS boundary. HAR of Negligible.

Biological: _____ Recent work and health and safety walkover identified no biological hazards at this site and are not expected to be encountered, however potential biological hazards (ticks, spiders, and ants) will be addressed in the tailgate health and safety briefing. HAR of Minor

Physical: _____ Lifting heavy objects (muscle and back strain). Injuries from these physical hazards possibly could occur resulting in injuries not likely to threaten mobility or vision.

List all other associated Special Work Permits/Procedures and Number Spark/Flame

(include RWP, SWP, CSP, LO/TO, Spark/Flame, etc.)

Will task affect other LANL operations, other employees, or other tasks? No _____ Yes X

If yes, explain precautions taken and contacts notified EZ work and SZ work will require blocking of roadway, cones and signs will be used and traffic control will be implemented if necessary. TA-35 facility management will be notified and, in turn, will issue TA-35 internal notifications.

Hazard Controls

Engineering/Administrative Controls, Special Equipment, etc. Fall protection will be used around open excavations if needed and traffic control vests will be worn at SSO's discretion. Utilities will be located and identified by JCI and US West. Excavation will be sloped to prevent cave in in accordance with 29 CFR 1926.650 and inspected by ESH-5. Heavy equipment and fall protection will be inspected prior to use by the on-site SSO or destgnee.

Additional Comments Attached: Yes No

PPE (Personal Protective Equipment)

Head Hard hats
Face & Eye Safety glasses with side shields
Gloves Leather gloves and nitrile gloves if necessary (at SSO's discretion).
Hearing Hearing protection will be used if noise levels exceed 85 dB(A).
Body Coveralls (Cotton or Kleenguard)
Foot Steel toe Boots
Respiratory: Type of Respirator N/A Type of Cartridge _____

Additional Protection/Comments None

Monitoring

List all personnel and area monitoring to be performed for this task, including action levels and equipment to be used, and any dosimetry requirements.

Chemical: All contaminants have been removed from the PRS, however a FID will be used to monitor for VOC constituents in the excavation.

Biological: None

Physical: If noise levels exceed 85 dB(A), workers will wear hearing protection. An initial survey will be performed to establish zones and determine if and when hearing protection will be required.

Radiological: β/γ ESP-1 with HP-260 or equivalent. α Ludlum 139 with air proportional probe or equivalent. In addition TLD badges will be required per Appendix B. No radioactive contamination has been detected at this PRS, however process knowledge indicates that initial operations at TA-35 involved a variety of radionuclides, therefore the potential of encountering radioactive contamination exists. In addition a μ R/hr instrument or equivalent will be kept on site to ensure that external radiation exposures do not exceed LANL's administrative limit of 100 M/Rem year.

Site Control

Describe how site access and control will be maintained. Attach a site map.

The site shall be marked off with cones and tape to prevent unauthorized entry. EZ and SZ will be established around PRS.

Decontamination

Describe how decon will be performed and which option will be used (ER Project HASP, Section 8).

Past sampling activities indicate no chemical or radiological constituents are present at this site the need for decontamination is not anticipated. Excess soil will be removed from equipment with scrub brushes, spray bottles, and liquinox on plastic sheeting, if necessary.

Spill Containment

Unless site personnel are trained to the first responder operations level, all site spills will be handled by LANL Emergency Management and Response (EM&R).

Emergency Response

Attach an emergency call-out list and a route to ESH-2/LAMC.

First-Aid/CPR Provider: Darril Stafford/ Leslie Sontag

Communications: Cellular phones will be on site (699-1702/699-2762)

Incident Response Equipment: An approved first-aid kit, BBP kit, and eye wash will be kept in the SZ.

Fire Extinguishing Equipment: A 20 lb. fire extinguisher will be kept in the SZ.

Medical Surveillance

List all medical surveillance required for this task (ER Project HASP, Section 11).

All personnel will be medically approved for HAZWOPER work, hearing conservation if noise levels exceed 85dB(A). In addition, health physics dosimetry will be required per Appendix B.

Training Requirements

Attach a copy of an appropriate training matrix (ER Project HASP, Section 10).

Participant Acknowledgment: (Per ER Project HASP, Sections 1.2 and 10.1.3)

Pre-job Conference: Date/Initials _____

**APPENDIX A
SCOPE OF WORK**

TASK ID	TASK DESCRIPTION	POTENTIAL CONTAMINANTS & HAZARDS	ANTICIPATED DATES/DURATION
Task 1 Site Preparation	<p>This task involves all activities performed at the site before operations begin.</p> <p>1-A Equipment preparation / mobilization: This task will include installation of zone barriers, equipment mobilization, and preparation.</p>	None	4/20/96-5/20/96
Task 2 Site cleanup operations	<p>This task includes all activities directly involved with or taking place during site cleanup to DOE and EPA acceptance criteria.</p> <p>2-A Asphalt and soil removal / tank removal: This task will include removal of asphalt and soil from the top and around the tank for removal.</p> <p>2-B Backfilling excavation and asphalt patching: Clean soil will be returned to excavation and backfill will be added as necessary. Soil will be compacted as it is backfilled and then patched with asphalt.</p>	Working with and around heavy equipment and falling into excavation.	4/20/96-5/20/96

**APPENDIX B
PERSONAL DOSIMETRY REQUIREMENTS**

HEALTH PHYSICS (RADIATION) [Refer to Section 6 of the HASP.]

HAZARDOUS SUBSTANCE/ CONDITION	TASK(s)	ACTION LEVEL(s)	DOSIMETRY REQUIREMENT	ACTION LEVEL(s) RATIONALE
External sources of radiation exposure.	All	Potential to exceed 100mREM/year dose limit.	Monthly TLD Badge	10 CFR 835
Internal sources of radiation exposure	All	Potential to exceed 100 m/REM/year dose limit.	Urinalysis- Invitro may be required if conditions warrant and shall be specified by ESH-1/ESH-12	10 CFR 835

**APPENDIX C
PERSONNEL AND EQUIPMENT DECONTAMINATION**

PERSONNEL AND ENVIRONMENTAL MONITORING EQUIPMENT (EME)

DECON REQUIREMENTS	TASK(s)	
	1	2
Option 1 Standard Approach Level D		
Wash Soap	N/A	X
Wash Solvent	N/A	X (Water)
Aqueous Rinse	N/A	X (Water)
PPE to be Disposed	N/A	X

APPENDIX E

TRAINING REQUIREMENTS

R=Read Training; C=Class Training; F=Field Training; AN=As needed per the HAS; ER=Employee Required

Training Requirements	Personnel Role				
	FTM	FTL/Sampler	SSO/RCT	Waste Mgmt	Heavy Equipment Operator
HASP	R	R	R	R	R
SSHASP	R	R	R	R	R
Pre-Job Brief	F or C	F or C	F or C	F or C	F or C
Daily Tailgate	F	F	F	F	F
TA Specific	C	C	C	C	C
GET	C	C	C	C	C
HazCom	R	R	R	R	R
Conduct Oper	R	R	R	R	R
Occurrence Reporting	R	R	R	R	R
OSHA Rights	R	R	R	R	R
Health Physics Checklist	C	C	C	C	C
Rad Worker II	C	C	C	C	C
40 Hr Worker	C	C	C	C	C
*24 Hr Field Training	F	F	F	F	F
8 Hr Supervisor	C	C	C		
8 Hr Refresher	C	C	C	C	C
First Aid		C	C		
CPR		C	C		
Sanitation [29 CFR			R		
Signs, Signals, Barricades [29 CFR 1926.200]			R		
Excavation/Trenching Competent Person [29 CFR 1926.65(k)(1) and 32 (f)]		R	R		
First Responder Awareness			C		
PPE (level D)	F	F	F	F	F
Bloodborne Pathogens			C		

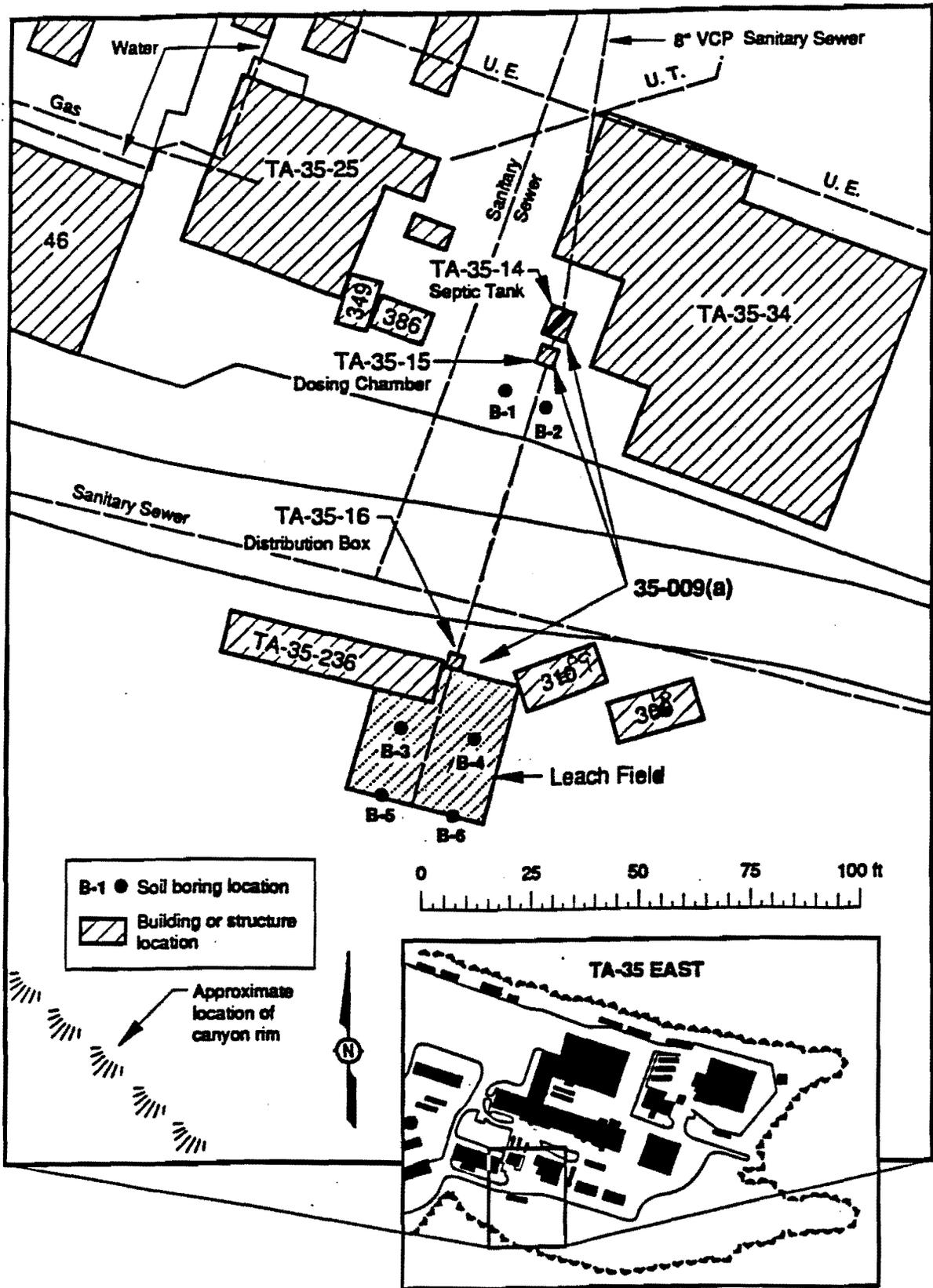


Figure 7-19. Schematic sample location map for SWMU 35-009(a).

7.7 Waste Characterization Strategy Form

The waste to be generated by the VCA activities will be the liquid and sludge contents of the tanks, tank debris, and associated structure debris that will be removed and properly disposed of. The contents of the septic tank was sampled and analyzed as part of the RFI for the PRS, and a waste profile form has been generated from the RFI data.

Two Waste Characterization Strategy Forms have been approved; one form pertains to the tank contents, and the other form pertains to the structure debris. The approved Waste Characterization Strategy Forms and the approved Waste Profile Forms are attached.

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**WASTE CHARACTERIZATION STRATEGY FORM
for VCA at PRS No. 35-009(a)**

OU NUMBER	PRS/SWMU NUMBER	TITLE
1129	35-009(a)	Abandoned Septic System

Name: Leslie Sontag, FTL	Date: 4-1-96
FPL: Allyn Pratt, EES-13	WMC: Deba Daymon/John Jones
Type of Activity: Voluntary Corrective Action	

Site Description:

PRS No. 35-009(a) is located at the southeastern portion of TA-35 near building TA-35-34. This PRS consists of an abandoned septic system that was formerly connected to Building TA-35-2 and associated buildings. Structures associated with PRS No. 35-009(a) include a 1,500-gal. septic tank (TA-35-14), a "dosing chamber" septic tank (TA-35-15), a "distribution box" manhole to the leach field (TA-35-16), and the leach field.

RFI sampling indicated that no release to the environment has occurred from these septic systems. The VCA is driven by human health and safety reasons, and involves the removal of the near empty tank and associated structures in order to remove the risk of structure failure of the empty tank and associated structures in a highly industrialized area of the Laboratory. Analytical results of the tank contents confirm that no hazardous or radioactive constituents are present. A Waste Characterization Strategy Form, and Waste Profile Forms have been completed for the tank contents, and PPE waste. This Waste Characterization Form covers the waste associated with removal of the structures associated with the septic system.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: Waste generated from the VCA will be nonhazardous and nonradioactive debris in solid form. Other waste expected to be generated by this VCA, including waste PPE and the tank contents, is covered by a previous approved WCSF.

Waste Types/Volumes: Waste covered by this document include the solid structures associated with the septic system, including the septic tank, the dosing chamber, and the distribution box and manhole with the estimated volume of 600 ft³.

Waste Packaging: Where applicable, waste will be placed in transportation rolloffs.

Characterization Strategy:

Analytical data from the tank contents and from the earlier RFI sampling event will be used for characterizing the structure debris and PPE.

Preliminary RCRA Determination:

No 90-day Storage Requirement (non-RCRA)

Describe how waste will be stored/handled:

Waste generated from this VCA will not be hazardous or radioactive. Also, it is not expected that waste will be stored or handled on site. Arrangements are being made to transport the waste, when it is generated, to an off-site disposal facility as part of VCA activities.

90-Day Storage Requirement (RCRA)

Analyte Suite:

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information Present	Absent	Data from Site Characterization
Total Metals	ICPES/XRF	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Volatile Compounds	8260	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Semi-Volatile Compounds	8270	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Organochlorine Pesticides and PCBs	EO-430	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
High Explosive Compounds	n/a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	Gross α	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gross Beta	Gross β	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gross Gamma	Gross δ	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tritium	Liq. Scint.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Asbestos	n/a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCLP *					
Metals		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organics		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides, herbicides, fungicides		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* TCLP analysis is not applicable.

Signatures:

J. L. D...
ER Waste Management Representative

4/3/96
Date

Mary Jane Smith
CST Representative

4/4/96
Date

Janet M. Jacobson
Form Author

4/3/96
Date

**WASTE CHARACTERIZATION STRATEGY FORM
for VCAs at PRS Nos. 35-009(a, b, c, and d)**

OU NUMBER	PRS/SWMU NUMBER	TITLE
1129	35-009(a, b, c, and d)	Abandoned Septic Systems

Name: Leslie Sontag, FTL	Date: 2-26-1996
FPL: Allyn Pratt, EM/ER	WMC: Deba Daymon
Type of Activity: Voluntary Corrective Actions	

Site Description:

PRS Nos. 35-009(a, b, c and d) are abandoned septic systems that served TA-35 between 1951 and 1990. The septic systems handled sanitary wastes from various laboratories at TA-35, and may have received a wide variety of industrial wastes, including radionuclides.

PRS No. 35-009(a) is located at the southeastern portion of TA-35 near building TA-35-34. This PRS consists of the site of an abandoned septic system that was formerly connected to Building TA-35-2 and associated buildings. Structures associated with PRS No. 35-009(a) include a 1,500-gal. septic tank (TA-35-14), a "dosing chamber" septic tank (TA-35-15), a "distribution box" manhole to the leach field (TA-35-16), and the leach field.

PRS No. 35-009(b) is the site of an abandoned septic system that is located near the southern edge of Ten Site Mesa, south of building TA-35-67. The PRS includes a septic tank (structure TA-35-76), a dosing chamber (TA-35-77), a distribution box manhole, and an associated leach field. PRS No. 35-009(c) is an abandoned septic system located near northeast end of Ten Site Mesa, north of building TA-35-2. Structures associated with 35-009(c) include TA-35-44, a 1,290-gal. septic tank and TA-35-45, a distribution box. The leach fields of PRS No. 35-009(c) are located adjacent to the northern edge of Ten Site Mesa. PRS No. 35-009(d) is located at TA-35, at the northeastern end of Ten Site Mesa. PRS No. 35-009(d) is a former septic system and includes structures TA-35-64, a manhole, TA-35-65, a 1,600-gal. tank, and a leach field.

Phase I RFI soil samples and unfiltered water samples (collected from each of the septic tanks) were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, alpha-, beta-, and gamma-radiation. No hazardous or radioactive constituents were detected in any of the soil samples. VOCs were detected in the unfiltered water samples collected from the tanks though only one, 1,1,1-trichloroethane, is a possible RCRA hazardous waste and it was only found in the sample collected from the PRS No. 35-009(b) septic tank. Metals were detected in each water sample, though only arsenic, barium, cadmium, chromium, lead, mercury, and selenium were detected above SALs in the sample collected at PRS 35-009(c). All metals which were detected are present at concentrations below TC regulatory thresholds.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: The possible chemicals of concern (COCs) in the liquid/sludge that will be removed from the septic tanks during these Voluntary Corrective Actions are VOCs, and radioactivity. Metals are not considered to be COCs as all detected metals are present at concentrations below TC regulatory thresholds.

Waste Types/Volumes: Waste generated from remediation activities is expected to include: PPE (solid waste - four 5-gallon drums); plastic and miscellaneous disposable sampling equipment, and decontamination solids (four 5-gallon drums); and septic tank residual liquid/sludge and pressure-wash decontamination fluids (worst case estimates 1100 gallons per septic tank).

Waste Packaging: 5 gallon DOT polyethylene drums for the PPE. Tank contents will be removed from the tanks and transported to the disposal site by vacuum/pumper truck. Tank contents will not be removed until appropriate disposal arrangements have been made. If the septic tank waste volumes are as expected, all liquid/sludge waste from the four septic tanks systems will be removed and disposed simultaneously using the same vacuum/pumper truck.

Characterization Strategy:

During the RFI activities, liquid/sludge samples were collected from each septic tank and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Based on the nature of these PRSs (sanitary septic systems) and knowledge of process of the contributing waste streams, PCBs are not expected to be present and therefore, analyses were not performed. (See Section 7.10 in the Work Plan for OU1129.) For waste characterization purposes, supplemental liquid/sludge samples were collected from each tank for analyses for gross α , β , γ , and tritium. Analytical data from the RFI sampling event and the waste characterization sampling event will be used for waste characterization.

PPE will be characterized by association with the RFI and the supplemental waste characterization analytical results of the liquid samples collected from the septic tanks, and by knowledge of field decon procedures.

Preliminary RCRA Determination:

No 90-day Storage Requirement (non-RCRA)

Describe how waste will be stored/handled:

It is not expected that waste from the septic tanks contents will be stored or handled on site. Arrangements are being made to use a vacuum/pumper truck to remove the contents of the tanks, and then transport the waste to a pre-arranged off-site disposal facility. PPE waste from 35-009(b) may be stored in a satellite hazardous waste storage area if it is determined, by best professional judgment of the FTL, that the PPE came into contact with any hazardous constituents.

90-Day Storage Requirement (RCRA)

Analyte Suite:**

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge		
			Existing Information Present	Existing Information Absent	Data from Site Characterization
Total Metals	ICPES/XRF	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volatile Compounds	8260	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Semi-Volatile Compounds	8270	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organochlorine Pesticides and PCBs	n/a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
High Explosive Compounds	n/a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	Gross α	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Beta	Gross β	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Gamma	Gross γ	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tritium	Liq. Scint.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asbestos	n/a	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TCLP*	n/a				
Metals		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organics		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides, herbicides, fungicides		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- * TCLP analyses not performed on water samples
- ** Waste Profile forms have been completed.

Signatures:

Telephonic approval of
Deba Dayman by J Jacobson
ER Waste Management Representative

Date

3/20/96

Mary Jane Dind
CST Representative

Date

2/29/96

Eric J. Jacobson
Form Author

Date

2/29/96

**LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23237**

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Generator :	PRATT, ALLYN	MS :	J521	PH :	79768	Z# :	099718
WMC :	DAYMON, DEBA	MS :	M327	PH :	6621398	Z# :	117207
CSR :	WINCH, MARY JANE	MS :	J593	PH :	75905	Z# :	114734
Status :	ACTIVE	Activated Date :	01-MAR-96	Expired Date :	02-MAR-97		
Account Info-CC :	5613	PC :	MA4X	CA :	5502	WP :	6000
Group :	EMER	TA :	35	BLDG :	000034	ROOM :	0

RMMA : N/A
Waste Accumu : N/A
Method of Char : ANALYSIS ATTACHED

Waste Type : PROCESS WASTE/SPENT CHEMICAL
Waste Classes : NON-RADIOACTIVE
ONE TIME GENERATION
WASTE WATER
Assoc Docum : N/A

Waste Category : SOLVENT

Waste Sources : REMEDIATION
SANITARY SLUDGE

Waste Matrix : AQUEOUS LIQUID

Matrix Type : HETEROGENEOUS

Waste/Proc Desc : LIQUID WASTE CONTENTS OF SANITARY SEPTIC SYSTEM PRS 35-009 (A) SYSTEM WAS IN OPERATION BETWEEN MID 1950'S AND 1991. WASTE STREAM CONSISTS OF SYSTEM CONTENTS (LIQUID / SEDIMENT) DIRECT SAMPLING RESULTS ATTACHED. SYSTEM IS LOCATED AT SE CORNER OF TA-35-34. SEPTIC TANK STRUCTURE NUMBER IS TA-35-14. WASTESTREAM VOLUME ESTIMATED AT ^ 1000 GALLONS.

Ignitability : NOT IGNITABLE

Corrosivity : 6.1 - 9.0

Reactivity : NON REACTIVE

Boiling Point : GREATER THAN 95 DEGREES F.

Toxicity Characteristic Metals :

Contaminant	LTR	Min	Max	Unit	Method
BARIUM	Y				TOTA
LEAD	Y				TOTA

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

Constituent	CAS NO	MIN	MAX	UOM
1,2,3-TRICHLORO PROPANE		.0067	.0067	PPM
LIQUID (WATER)		75	85	%
SOLIDS		15	25	%

Radiological Characteristics: N/A

Waste Water Contaminants :

Contaminant	LTR	Min	Max	Unit	Method
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LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23237

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ALUMINUM	Y	TOTA
COPPER	Y	TOTA
ZINC	Y	TOTA

Maximum daily flow when discharge occurs: 1000 GAL

Average daily flow when discharge occurs: 1000 GAL

Estimated number of days discharge will occur: 1

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **NON-RADIOACTIVE**

Waste Classification : **NON-HAZARDOUS CHEMICAL WASTE**

EPA Hazardous Waste Code : N/A

**LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM**

WPF #: 23448

04-Apr-1996 01:41 PM

(Version: 1.1)

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Generator : PRATT, ALLYN MS : J521 PH : 74308 Z# : 099718
 WMC : DAYMON, DEBA MS : M327 PH : 6621398 Z# : 117207
 CSR : WINCH, MARY JANE MS : J593 PH : 75905 Z# : 114734
 Status : ACTIVE Activation Date : 02-APR-96 Expiration Date: 02-APR-97

Group : EMER TA : 35 Bldg : 000000 Room: 0

RMMA : N/A
 Waste Accumu : N/A
 Method of Char : ANALYSIS ATTACHED
 KNOWLEDGE OF PROCESS (KOP)

Waste Type : PROCESS WASTE/SPENT CHEMICAL
 Waste Classes: NON-RADIOACTIVE
 ONE TIME GENERATION
 Assoc Docum: N/A

Waste Category: NOT APPLICABLE

Waste Sources : REMEDIATION

Waste Matrix : SOLID

Matrix Type : HETEROGENEOUS

Waste/Proc Desc : WASTESTREAM IS COMPONENT MATERIALS OF A SANITARY SEPTIC SYSTEM WHICH CONSISTS OF STEEL-REINFORCED) CONCRETE TANKS AND CORRUGATED METAL PIPE TO BE REMOVED AS PART OF VCA ACTIVITIES FOR PRS 35-009 (A). DIRECT SAMPLING OF TANK CONTENTS INDICATES NO HAZARDOUS OR RADIOLOGICAL CONSTITUENTS CAME IN CONTACT W/THE SEPTIC TANK (CONTENTS CLASSIFIED AS NHAZ CHEM WASTE PER WPF 23237) ANALYTICAL RESULTS OF CONTENTS ATTACHED. CONTENTS REMOVED 3/20/96.

Ignitability : NOT IGNITABLE

Corrosivity : NOT AQUEOUS

Reactivity : NON REACTIVE

Boiling Point : NOT APPLICABLE

Toxicity Characteristic Metals : N/A

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

Constituent	CAS NO	MIN	MAX	UOM
CONCRETE		75	80	%
STEEL (CONCRETE REINFORCEMENT)		10	15	%
CORRUGATED METAL PIPE		5	10	%

Radiological Characteristics : N/A

Waste Water Contaminants : N/A

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23448

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Additional Information: THE ANALYTICAL DATA ATTACHED ARE THE RESULTS OF DIRECT SAMPLING OF THE FORMER LIQUID CONTENTS OF SEPTIC TANK SYSTEM 35-009 (A), AND DO NOT REPRESENT ANY DIRECT SAMPLING OF THE TANK CONSTRUCTION MATERIALS. THE DATA SUBMITTED HEREIN WERE CLASSIFIED AS NHAZ CHEM WASTE PER WPF #23237. THE TANK WAS RECENTLY PUMPED, PRESSURE-WASHED AND RINSED, AND REPUMPED. THE TANK CONSTRUCTION MATERIALS (THE WASTESTREAM FOR THIS WPF) ARE SCHEDULED FOR EXCAVATION/REMOVAL. BASED ON THE ASSOCIATION WITH THE ATTACHED ANALYTICAL RESULTS, THE RECOMMENDED DISPOSITION OF THE TANK MATERIALS IS THE COUNTY LANDFILL.

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **Non-rad Waste**

RCRA Category : **Non-hazardous Waste**

Misc. Category : **MUNICIPAL REFUSE**

Waste Classification : **MUNICIPAL REFUSE**

EPA Hazardous Waste Code : **N/A**

7.8 VCA Checklist and Field Work Authorization Form

The approved Voluntary Corrective Action (VCA) Checklist and Field Work Authorization Form is attached.

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**Voluntary Corrective Action (VCA)
Checklist and Field Work Authorization Form**

PRS No. 35-009(a)

HSWA or AOC

- COPC(s) defined.
- Nature and extent Defined or field screening method available to guide where not defined.
- Remedy is obvious.
- Time for removal is less than 6 months.
- Remedy is final.
- Land use assumptions straightforward.
- Treatment, Storage, Disposal Facilities are available for waste type and volume.
- Cleanup cost is reasonable for the planned action, and meets accelerated decision logic criterion for decision to proceed with VCA.

Explain criteria not checked above. _____

Through reviewing the above criteria associated with this site, I believe that a VCA is the appropriate Accelerated Cleanup approach

Allyn Pratt
Allyn Pratt, FU 4, FPL

3/18/96
Date

Bob Simeone
Bob Simeone, FPC

2/27/96
Date

The undersigned have reviewed the final plan and believe that it fully satisfies the appropriate Accelerated Cleanup approach.

Allyn Pratt
Allyn Pratt, FU 4, FPL

3/18/96
Date

Bob Simeone
Bob Simeone, FPC

~~2/27/96~~ 4/8/96
Date

Through reviewing the VCA Plan, for site PRS No. 35-009(a), and believing that the above criteria have been met, I authorize the fieldwork to proceed.

[Signature]
DOE ER Program Manager

4/9/96
Date

7.9 Cost Estimate

Table 3 shows the estimated cost for completing the VCA activities.

TABLE 3
ESTIMATED COST WORKSHEET

Category	Rate	Units	Cost
Field Preparation Activities			
VCA plan preparation	\$1,000/day	5 days	\$5,000
VCA plan technical edit and review	\$1,000/day	1 day	\$1,000
Preparation of waste characterization form	\$700/day	2 days	\$1,400
Preparation of Stormwater Pollution Prevention Plan	\$700/day	1.5 days	\$1,050
Preparation of Spill Prevention, Control, and Countermeasures Plan	\$700/day	1.5 days	\$1,050
Preparation of site-specific health and safety plan	\$700/day	4 days	\$2,800
Subtotal			\$12,300
Personnel Costs			
Field Team (field team leader and site safety officer)	\$1,000/day	5 days	\$5,000
Subtotal			\$5,000
Field Activities			
Subcontractor (vacuum truck)	\$500/day to load	1 day	\$500
Subcontractor (excavation and asphalt)	\$14,229	5 days	\$14,229
Subcontractor (transportation and disposal of liquid waste)	\$2.00/gal.	1,500 gal.	\$3,000
Subcontractor (disposal of solid waste)	\$600/tank	2 tanks	\$1,200
Subtotal			\$18,929
Analytical Costs for Waste Disposal			
Radiological van (waste characterization) (split cost)	\$1,000/day	1 day	\$1,000
Subtotal			\$1,000
Final Activities			
Acceptance inspection	\$500/day	1 day	\$500
Final report preparation	\$1,000/day	8 days	\$8,000
Final report technical edit and review	\$1,000/day	1.5 days	\$1,500
Subtotal			\$10,000
Total Estimated Cost			\$47,229

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REFERENCES

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LANL (Los Alamos National Laboratory), March 1992. "Administrative and Quality Procedures for Environmental Restoration," Los Alamos, New Mexico. **(LANL 1992, ER ID Number 11686)**

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1129," Los Alamos National Laboratory Report LA-UR-92-800, Los Alamos, New Mexico. **(LANL 1992, ER ID Number 7666)**

LANL (Los Alamos National Laboratory), 1994. "Site Development Plan: Annual Update 1994," Los Alamos National Laboratory Publication LALP-94-21, Los Alamos, New Mexico. **(LANL 1994, ER ID Number 53451)**

LANL (Los Alamos National Laboratory), March 1996. "Quality Assurance Project Plan Requirements for Sampling and Analysis," Los Alamos National Laboratory Report LA-UR-96-441, Los Alamos, New Mexico. **(LANL 1996, ER ID Number 53450)**