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Environmental Restoration

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Date: May 1, 1997
Refer to: EM/ER:97-140

1997 RECEIVED HAZARDOUS WASTE PROGRAM

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

SUBJECT: FINAL VCA PLAN FOR TAs 12, 15, and 39, PRSs 12-001(b), 15-009(e), AND 39-002(a) ACTIVITIES

Dear Ted:

Enclosed for your records please find two copies each of the final Voluntary Corrective Action (VCA) Plans for Technical Area (TA) 12, Potential Release Site (PRS) 12-001(b); TA-15, PRS 15-009(e); and TA-39, PRS 39-002(a) activities. These activities are planned for completion in Fiscal Year 1997. Informational copies of these VCA Plans are being distributed to the regulators.

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

If you have any questions, please call Gene Gould at (505) 667-0402 or Mike Gilgosh at (505) 667-5794.

Sincerely,

Jorg Jansen, Program Manager
Environmental Restoration Project

JJ/rfr

Enclosures: (1) Final VCA Plans for TAs 12, 15, and 39, PRSs 12-001(b), 15-009(e), and 39-002(a)

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TA-15

Voluntary Corrective Action Plan for

Potential Release Site 15-009(e) Septic Tank

Field Unit 2

Environmental Restoration Project

May 1997

A Department of Energy
Environmental Cleanup Program

Los Alamos
NATIONAL LABORATORY

LA-UR-97-1479

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VOLUNTARY CORRECTIVE ACTION PLAN FOR POTENTIAL RELEASE SITE 15-009(e) - SEPTIC TANK

1.0 INTRODUCTION

The potential release site (PRS) 15-009(e) addressed in this voluntary corrective action (VCA) plan is a septic tank located within the secured boundaries of Technical Area (TA) -15.

1.1 Site Type and Description

PRS 15-009(e) is a septic tank located approximately 175 ft south-southwest of Building TA-15-27 (the underground control room at E-F Site, also known as R-27). The septic tank was constructed in 1947, has a capacity of 1,200 gallons, and is expected to have received sanitary waste. A site map of the area is presented in Annex 7.3 (Figure 7.3-1).

1.1.1 Operational History

The septic tank was put into service in 1947 and received waste from the control room (TA-15-27) until operations at E-F Site were discontinued in 1981. No discharges to the septic tank have occurred since operations ceased at this firing site. The PRS is discussed in Section 7.6 of the OU 1086 work plan (LANL 1993, 1087).

1.1.2 COPCs and Rationale for Proposed Remedial Action

Two water samples were collected from the septic tank in accordance with the approved work plan (LANL 1993, 1087). A comparison of the septic tank contents to water quality standards is not entirely appropriate, but the comparison provides some indication of whether potential health concerns may exist. Based on this comparison, analytical results on the septic tank contents indicated that lead and uranium were present at concentrations that may pose a concern for human health if not properly managed. Mercury was also detected slightly above the maximum contaminant level (MCL), but had holding time problems that made accurate quantification impossible. Although visual inspection of the tank did not find any signs that the structural integrity has been compromised, removal of the tank contents will ensure that the COPCs present will not be released to the environment. Following the removal of the contents, the tank will be filled with expanding concrete to prevent the inadvertent introduction of other liquids.

2.0 SITE CHARACTERIZATION

2.1 RFI Information/Other Decision Data

No previous sampling has been reported for the septic tank. The objective of the Phase I sampling was to characterize the contents of the tank. Two water samples were collected from the tank using the approved Coliwasa sampler for liquid and slurries (LANL-ER-SOP 6.15).

The samples collected were submitted to an offsite analytical laboratory for analysis in accordance with the RFI work plan (LANL 1993, 1087). Analyses included volatile and semivolatile organics (VOCs and SVOCs), high explosives (HE), metals (Pb, Hg, and Be), uranium, and tritium. According to chain-of-custody records, samples were submitted and analyzed within the prescribed holding times with the exception of the metals analyses, which exceeded the holding times for mercury, beryllium, and lead. All QA/QC issues are discussed in Section 2.1.1 (Data Quality Evaluation) of this plan.

2.1.1 Data Quality Evaluation

The QA/QC data associated with the analyses at PRS 15-009(e) (inorganics, HE, VOCs, SVOCs, tritium, and uranium) indicated that 99.3% of the data were acceptable and defensible (Table 7.2-1). The QA/QC mechanisms were effective in ensuring the reliability of measured data within expected limits of sampling and analytical error. Of the approximately 300 pieces of analytical data, approximately 7% were qualified as either undetected (UJ) or estimated (J) and <1% were qualified as unusable (R).

Inorganics. The 180-day analytical holding time for metals in water was exceeded by 21 days. As a result, the data for beryllium and lead were qualified as UJ or J. The data are usable because the inorganic material is extremely stable under proper storage conditions and will not degrade over very long periods of time. In addition, the 28-day analytical holding time for mercury in water was exceeded by 181 days. The mercury data were qualified as R because the holding time was grossly exceeded (i.e., more than twice the holding time). However, mercury was detected in both water samples indicating that mercury was present despite the gross exceedance of the holding time. Because the data indicate that mercury is present in the septic tank, these data may be used with caution despite the low bias because of the holding time problem.

Organics. The area count of one of the internal standards was below the acceptance limit for the seven SVOCs in sample AAB3499 in both the initial and subsequent analysis. The target compounds [benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, di-n-octyl phthalate, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene] associated with this internal standard were qualified as UJ and are usable because the recovery was sufficient to detect and quantify the analytes, and the sensitivity and responsiveness of the instrument were not compromised.

The percent recoveries for five SVOCs were below the established limit of 50% in the blind QC sample. These analytes—1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, naphthalene, and 1,2,4-trichlorobenzene—are qualified as UJ in both samples and the data are usable because the recoveries were sufficient to detect and quantify the analytes if present.

All other SVOC data and all HE and VOC data are considered to be usable as reported.

Radionuclides. There were no QA/QC problems associated with the tritium and uranium collected data from this PRS. All the data are considered to be usable as reported.

2.1.2 Sampling Results

FIMAD contains all of the analytical data collected at PRS 15-009(e). The reported values for detected chemicals are compared with the appropriate water quality standards, i.e., the MCLs for drinking water. The MCLs were used because the only exposure pathway would be from accidental ingestion of the tank liquid by a worker. Data comparison tables of detected concentrations are provided in Annex 7.2. Based on a review of the sampling data, the results are summarized as follows:

- Four inorganics—beryllium, lead, mercury, and uranium—were detected in the liquid from the septic tank (Table 7.2-2). Mercury was detected, but cannot be accurately quantified because of holding time problems and should be used with caution (see Section 2.1.1). All other inorganics were undetected and were eliminated from further evaluation.

- Lead and uranium were detected at concentrations greater than their respective MCLs of 15 µg/L and 20 µg/L (Table 7.2-2). Mercury was detected slightly above its MCL of 2 µg/L in one sample and below the MCL in the other sample. Because the data are biased low because of the holding time problems, mercury is not eliminated as a contaminant of potential concern (COPC). Beryllium was

below its MCL of 4 µg/L, but was not submitted to a multiple chemical evaluation (MCE) because beryllium is the only carcinogen detected. As a result, beryllium is eliminated from further evaluation.

- Lead and mercury concentrations are not greater than the D-listed RCRA Waste Toxicity Characteristics and beryllium is not a RCRA-listed waste (Table 7-2.2). Therefore, the liquid contents of the septic tank are considered to be nonhazardous, low-level radioactive waste because of the presence of uranium.
- Because isotopic uranium was not analyzed, the isotopic ratios could not be determined. However, based on the activities associated with E-F Site, it is assumed that the uranium detected in the septic tank is depleted uranium (DU). The MCL for DU is the same as presented above for inorganic uranium (20 µg/L). Based on the sampling results, uranium was detected in the septic tank at concentrations greater than its MCL.
- No organics were detected in any of the samples submitted for laboratory analysis.

The results of the RFI screening assessment indicate that lead, mercury, and uranium have been retained as COPCs.

2.2 Nature and Extent of Contamination

The Phase I sampling indicated that the liquid in the septic tank contains lead, mercury, and uranium at concentrations of potential concern. The Phase I sampling did not determine if there is sludge present on the bottom of the septic tank. In addition, the area corresponding to the outfall from the septic tank was not sampled during the initial characterization. Subsequent sampling and analysis of sludge (if found) and the outfall area will be conducted as part of the VCA.

3.0 PROPOSED REMEDY

3.1 Description of the Proposed Remedial Actions

In accordance with the approved RFI work plan (LANL 1993, 1087), the soils in the outfall area were not sampled during the Phase I investigation. However, because COPCs were detected in the septic tank, the soil in the outfall area will be sampled first as part of the VCA. If the soil is determined to contain COPCs, the soil area will be remediated and an addendum to the VCA plan will be prepared for this work. If the soil is not found to be a concern, the remedial action at PRS 15-009(e) will consist of removing the liquid contents, as well as the sludge (if present), from the septic tank.

Four samples [two surface (0 to 6 in.) and two subsurface (18 to 24 in.)] at two sample locations are proposed for collection from the outfall area at this PRS. This sampling will be conducted to determine whether there has been any release of contamination from the septic tank. One sample location will be at the point where the outlet from the septic tank drains; the other sample location will be approximately 10 to 30 ft from the outfall. The exact location of the second sampling point will be determined before mobilization and will depend on the slope of the land and evidence of deposition of materials from the septic tank. A land survey will be conducted for the sample locations using established survey monuments and coordinates published in LANL's Survey Monument Network Manual (LANL 1994, 1395). All samples will be analyzed for beryllium and lead by inductively coupled plasma (ICP) atomic absorption and for mercury by cold vapor atomic absorption (CVAA) as well as for uranium by kinetic phosphorescence analysis (KPA). Before sampling, all sample locations will be field screened for radioactivity and HE in accordance with the Site-Specific Health and Safety Plan (SSHASP). Surface soil samples will be collected according to the approved spade and scoop technique (LANL-EP-SOP 6.09) and subsurface soil samples will be collected using the approved hand auger technique (LANL-ER-SOP 6.10). All samples will be submitted to a fixed laboratory for appropriate analyses.

Before remediation of the septic tank begins, the appropriate health and safety screening will be conducted (Annex 7.6). In addition, initial field activities will include establishing a <90-day storage area and setting up spill control measures as stipulated in the Spill Prevention Control and Countermeasures Implementation Plan (SPCCP).

Remediation will begin with the removal of the liquid contents of the tank through the manhole using a portable pump or vacuum tank system. A flocculant will be added to the tank liquid to settle out any particulates present before removal from the tank. The field team will be careful to minimize disturbing the sludge layer (if present) and will pump the liquid into Department of Transportation (DOT)-certified 55-gallon drums. Subsequently, if a sludge layer is present, it will be similarly removed and placed in separate 55-gallon drums. A homogenized sample of the segregated sludge will be collected and submitted to an analytical laboratory. The sludge will be analyzed using EPA Method 1311 for RCRA toxicity characteristic leaching procedure (TCLP) metals to determine if the waste constitutes RCRA characteristic hazardous waste. It will also be analyzed for uranium. Following the removal of the sludge, the tank will be decontaminated by washing the interior with pressurized water. The field team will be careful to minimize the volume of water for decontamination. If the initial rinse water contains significant quantities of sludge, the rinse water will be combined with the tank sludge, creating a sludge slurry, and a second rinse may be necessary. If, however, there is little sludge present in the tank before the first rinse, the rinse water will be managed separate from the tank sludge, and only one rinse will be performed. After decontamination is completed, the septic tank will be filled with expanding cement to fill voids in corners, around the baffle, and in the inlet and outlet ports. The concrete will be monitored for voids and cracks during drying.

The sludge or sludge slurry will be retained onsite in a <90-day storage area pending the laboratory analyses to characterize the waste. If the analytical results indicate that the waste is RCRA hazardous, the sludge will be treated by stabilization, if possible, so that the final waste classification will be nonhazardous, low-level radioactive waste. The septic tank liquid and rinse water that are relatively free of sludge will be designated as nonhazardous, low-level radioactive waste. Treatment/disposal of the nonhazardous, low-level radioactive wastes will involve solidification of the liquid and transport to TA-54, Area G for disposal.

3.2 Basis for Cleanup

PRS 15-009(e) is a septic tank that lies within DOE-owned land and is removed from public access roads. The anticipated future land use is expected to be exclusively for Laboratory operations (i.e., industrial land use only).

The tank contains COPCs (lead, mercury, and uranium) that could pose a potential concern for human health (Table 7.2-2). Although the tank appears to be intact, remediation is necessary to ensure that releases of these COPCs to the environment will not occur.

3.3 Site Restoration

Removal of the septic tank contents will not require any excavation activities. However, if the outfall area needs to be remediated, excavation of the soil will be necessary and an addendum to the VCA plan will be prepared. The site will be returned to its approximate original condition upon completion of the field activities.

4.0 WASTE MANAGEMENT

4.1 Estimated Types and Volumes of Waste

Wastes expected to be generated during the VCA are included in Table 4.1-1.

TABLE 4.1-1

ESTIMATED TYPES AND VOLUMES OF WASTE

Item	Waste Type	Anticipated Volume
Sampling waste/PPE	Solid - potential hazards	<1 55-gallon drum
Sludge	Solid - radioactive	<1 55-gallon drum
Contaminated liquids	Liquid - radioactive	Approximately 40 55-gallon drums
Decontamination wastes	Liquid - potential hazards	<30 gallons

A Characterization Strategy Form (CSF) has been submitted to EM-SWO and ESH-19. The CSF describes the waste characterization/strategy requirements and all uncertainties in determination of waste types and volumes, which are summarized below.

Soil from the outfall area will be field screened and submitted to a fixed analytical laboratory as part of the VCA in order to determine if it is contaminated with metals, organics (SVOCs, VOCs, and HE), and/or DU. If remediation is necessary based on the analytical results, an addendum to the VCA plan will be prepared and will address any waste management issues related to this work.

Liquid from the septic tank (estimated to be approximately 1,000 gallons) and the rinse water used to decontaminate the septic tank will be placed in separate 55-gallon drums. Each drum of the septic tank liquid will be numbered sequentially (i.e., No. 1 through No. 40). Because the analytical results of the Phase I sampling indicated that the liquid in the septic tank is fairly homogeneous, only every fifth drum will be sampled for TCLP metals, VOCs, SVOCs, HE, and isotopic uranium. The drum containing the last of the liquid removed from the tank will also be sampled and analyzed as above because it is more likely to contain resuspended sludge. The liquid used to rinse the septic tank will be placed in a separate drum and sampled for TCLP metals, SVOCs, HE, and isotopic uranium.

Visibly contaminated personal protective equipment (PPE) and sampling equipment will be considered low-level radioactive waste if the radiological field screening detects anything above background levels. Visibly uncontaminated items will be considered industrial or radioactive waste depending on the field screening results. The volume generated will be less than one 55-gallon drum. PPE/sampling equipment will be segregated into visibly contaminated and uncontaminated groups and placed in separate, sealed plastic bags inside the 55-gallon drum. These items will not be directly sampled.

The decontamination liquid—Liquinox®, detergent, tap water, and distilled water—used to clean the PPE/sampling equipment may be low-level radioactive waste. A total volume of less than 30 gallons will be generated and will be placed in a separate 55-gallon drum. One grab sample will be collected from the drum and analyzed for TCLP metals, SVOCs, HE, and isotopic uranium. This liquid will be classified as either RCRA hazardous, mixed, radioactive, or nonhazardous waste based on the analytical results for this grab sample.

4.2 Method of Management and Disposal

Waste soil and sludge will be stored/handled as non-RCRA wastes. The waste will be stored at the PRS in 55-gallon drums until all laboratory analyses are completed. The soil and sludge will then be disposed of as either RCRA hazardous, mixed, radioactive, or nonhazardous waste based on the analytical results. Each drum will be labeled with a completed and attached Radioactive Materials Tag and the storage area will be roped off and labeled as a radioactive materials storage area. The DX user group will

dispose of any pieces of HE in a RCRA-permitted treatment, storage, and disposal (TSD) facility. Visible pieces of DU will be sent to TA-54 for disposal as low-level radioactive waste.

Liquid wastes from the septic tank will be stored onsite in approximately 40 55-gallon drums. The water used to decontaminate the inside of the septic tank will be stored in a separate 55-gallon drum. The drums will be analyzed as described in Section 4.1 and will be disposed of according to their waste classification. If the septic tank liquid in any of the drums contains RCRA hazardous, mixed, or radioactive wastes, additional analyses from the other drums may be required to meet waste acceptance requirements of the TA-46 Sanitary Wastewater System Consolidation (SWSC) Plant, the TA-50 TSD, or another TSD facility.

Visibly contaminated PPE/sampling equipment will be segregated and managed as low-level radioactive waste. The total volume of this waste is expected to be less than one 55-gallon drum and will be stored onsite until the analyses of the soil and liquid wastes are completed. The visibly contaminated wastes will be disposed of in the same manner as the 55-gallon drum with the highest level of hazardous, mixed, or radioactive waste. The disposal of visibly uncontaminated PPE/sampling equipment will be based on the analytical results of its decontamination liquids. If the liquids are nonhazardous, the PPE/sampling equipment may be disposed of in a sanitary landfill. If, however, the decontamination liquids are hazardous, mixed, or radioactive, the PPE/sampling equipment will be disposed of according to the requirements of their corresponding waste classification.

Decontamination liquids (30 gallons or less total volume) used to clean the PPE/sampling equipment will be managed as low-level radioactive waste. A grab sample of the waste liquid generated during the VCA will be collected and analyzed to determine its final waste classification.

Each waste type may require further analyses in order to meet the waste acceptance criteria of the TSD that will receive it. EM-SWO personnel will assist in the determination of the final disposal location for all of the wastes generated during the VCA. If required, they will also assist in finding the necessary TSD space for each waste type.

5.0 DESCRIPTION OF CONFIRMATORY/VERIFICATION SAMPLING

The remediation will be considered complete based on visual inspection of the tank interior as well as on whether any significant material is present in the rinse water. If there is significant sludge in the rinse water, additional rinses will be performed. Because there will be no loose media remaining, confirmatory sampling of the tank interior is not possible. In addition, the septic tank will be filled with expanding concrete, which will immobilize any material remaining after the pressure washes.

If the soil in the outfall area is found to be contaminated, an addendum to the VCA plan will be written. The confirmatory sampling scheme for this additional work will be included in the addendum.

6.0 ESTIMATED TIME TO COMPLETE THE ACTION AND UNCERTAINTIES

The estimated completion time for the VCA is one week (five working days). This estimate is based on one day for mobilization, three days to complete the removal of the septic tank contents, wash the inside of the tank, collect soil samples, and ship samples to the fixed laboratory, and one day to complete demobilization. The analytical results from the waste characterization and confirmatory sampling are expected to be received within 30 days, and waste removal from the onsite storage area is expected within another 60 days. Therefore, the total time for the VCA from mobilization to removal of the waste is estimated to be approximately 90 days.

There are uncertainties with this cleanup. It is not certain whether sludge is present in the septic tank and whether the soil in the outfall area requires excavation and disposal. Therefore, the extent and nature of

the potential contamination is not entirely known. The only heavy equipment will be a vacuum truck for removal of the septic tank contents and a drum loader. The 55-gallon drums estimated for this cleanup should provide adequate TSD space. If, during the course of the removal, the waste volume exceeds 200% of the waste container estimate, the effort will be stopped and re-evaluated.

ANNEX 7.1

RISK-BASED CLEANUP LEVEL ASSUMPTIONS AND CALCULATIONS

Because of the continuing potential for release of materials from the septic tank at PRS 15-009(e) to the environment, all contents of the tank will be removed and disposed of properly. Therefore, risk-based cleanup levels are not applicable for the septic tank contents.

The soil around the outfall area has not been sampled. Therefore, it is unknown whether COPCs are present in the soil. The presence of COPCs will be determined by a health-based screening assessment, which involves the comparison of the soil data to screening action levels (SALs). Subsequently, any chemicals retained from this assessment will be compared to the appropriate preliminary remediation goals (PRGs) in order to determine if contamination exists and whether a cleanup is warranted. The PRGs will be calculated using the EPA equations and parameters presented in the annual update of the EPA Region 9 PRG calculations (EPA 1996, 1351). Because no COPCs have been identified to date, no PRGs are presented in this VCA plan. All PRGs and calculations will be presented in the VCA completion report for PRS 15-009(e).

ANNEX 7.2

RFI ANALYTICAL RESULTS

All analytical data are available on FIMAD. If FIMAD is not accessible, data will be provided upon request. The data are summarized in the RFI report for TA-15 (Environmental Restoration Project 1995, 1325). A summary of the analytical data is provided in the following tables.

TABLE 7.2-1

DATA QUALITY EVALUATION FOR PRS 15-009(e) SAMPLES

Request Number	Sample Number	Suite	Comments
20349	AAB3499 AAB3500	Inorganics	The 180-day analytical holding time for beryllium and lead in water was exceeded by 21 days. The data are qualified as UJ or J and are usable because the inorganic materials are extremely stable under proper storage conditions and will not degrade over very long periods of time.
			The 28-day analytical holding time for mercury in water was exceeded by 181 days. The data are qualified as R because the holding time was grossly exceeded (more than twice the holding time). However, because mercury was detected the data can be used with caution despite the low bias due to the holding time problem.
18194	AAB3499	SVOCs	The area count for the last internal standard was below the acceptance limit. The target compounds—benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, di-n-octyl phthalate, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene—associated with this internal standard are qualified as UJ. The data are usable because the recovery was sufficient to detect and quantify the analytes, and the sensitivity and responsiveness of the instrument were not compromised.
18194	AAB3499 AAB3500	SVOCs	The percent recoveries for 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, naphthalene, and 1,2,4-trichlorobenzene in the blind QC sample were below the established limit of 50%. The data are qualified as UJ and are usable because the recoveries were sufficient to detect and quantify the analytes if present.

TABLE 7.2-2

INORGANIC CHEMICALS AND RADIONUCLIDES DETECTED IN THE SEPTIC TANK AT PRS 15-009(e)

Sample ID	Location ID	Depth (in.)	Beryllium (µg/L)	Lead (µg/L)	Mercury (µg/L)	Uranium (µg/L)
MCLs	N/A*	N/A*	4	15	2	20
RCRA Waste Toxicity Characteristic	N/A*	N/A*	N/A*	5,000	200	N/A*
AAB3499	15-2237	N/A*	0.3(J)	23(J)	1.4(R)	251
AAB3500	15-2237	N/A*	<1.0(UJ)	462(J)	2.2(R)	65.3

*N/A = not applicable.
Shaded boxes are concentrations greater than the water MCLs.

ANNEX 7.3

SITE MAP

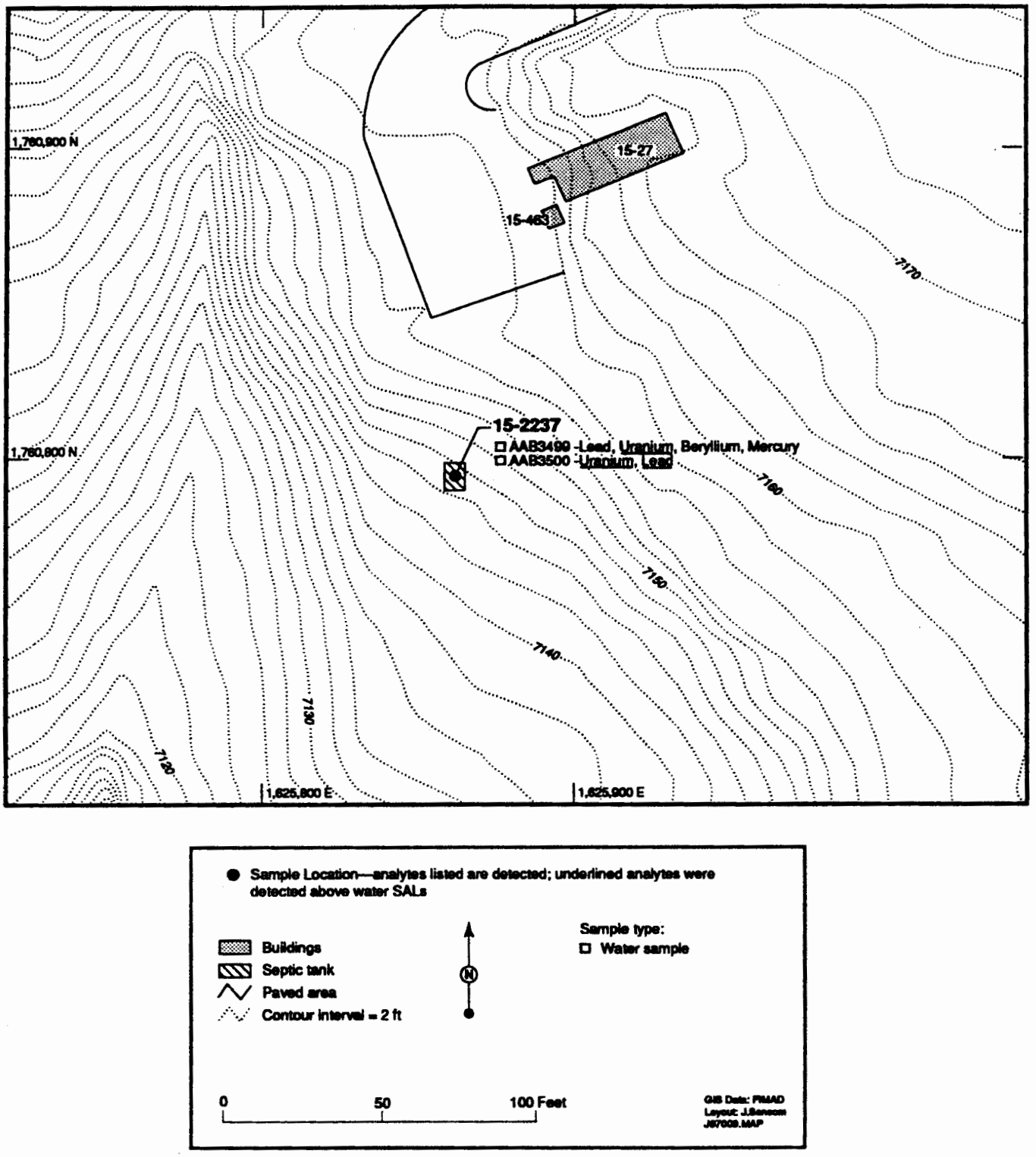

Figure 7.3-1. Site map for PRS 15-009(e)

ANNEX 7.4

IMPLEMENTATION SOPS

See Environmental Restoration Standard Operating Procedures, Volumes I and II, November 17, 1993, Los Alamos National Laboratory.

ANNEX 7.5

QUALITY ASSURANCE PLAN

See Quality Program Plan and Quality Assurance Project Plan for Environmental Restoration, February 1995 revision, Los Alamos National Laboratory.

ANNEX 7.6

SITE-SPECIFIC HEALTH AND SAFETY PLAN

Prior to initiation of any work, a completed Site Specific Health and Safety Plan (SSHASP) will be approved by LANL representatives, including the Explosives Review Committee.

This Site-Specific Health and Safety Plan (SSHASP) will be developed for the Environmental Restoration (ER) Project at the Los Alamos National Laboratory (LANL) to comply with applicable federal and state occupational health and safety (HS) requirements, including those of the Department of Energy (DOE). DOE requires LANL to comply with the federal Occupational Safety and Health Administration (OSHA) requirements, although operations at LANL are not subject to the jurisdiction of OSHA. The environmental restoration (ER) Project has developed a generic Health and Safety Plan, the ER Project HASP, which establishes HS information and requirements applicable to ER field operations project wide. In addition to the HASP, this SSHASP establishes site-specific HS information and requirements applicable to the scope of work described in Section 2.

ER participants are responsible for conducting work in accordance with applicable regulations. The term "ER participants" refers to anyone performing ER work, including LANL, subcontractors to LANL and their lower-tier contractors, consultants, and agents. In some cases in this document, LANL has chosen to invoke OSHA and LANL requirements that may not ordinarily apply to ER field operations (e.g., OSHA's general industry standards in Part 1910 of Title 29 of the Code of Federal Regulations [29 CFR 1910]). These choices were made on a case-by-case basis to maintain consistency with LANL's as low as reasonably achievable (ALARA) policy and to clarify LANL's expectations with regard to interpretable requirements of the multiple agencies governing ER work. Where there is concern that implementation of work orders or HS requirements would conflict with contract terms, or that it could unreasonably compromise the safety or health of an individual or the environment, such concerns should immediately be brought to the attention of the Contract Administrator and the field unit HS representative. Failure to comply with terms of HS plans may constitute cause to stop activity or the issuance of a stop work order, as specified in Section 3.4.2 of the HASP, without cost or penalty to LANL.

This SSHASP shall be reviewed and approved in accordance with Section 1.2 of the HASP. Once this SSHASP has been approved, revisions will be tracked using a SSHASP modification form (Appendix B of the HASP) per Section 1.3 of the HASP. Modifications to this SSHASP may result in a change to the terms or scope of a subcontract. Completion of a SSHASP modification form is <u>not</u> the means for modifying the scope or terms of the project contract. To modify a contract, the subcontractor shall notify the Contract Administrator and field unit HS Representative under the changes clause and shall not proceed with the change until a change order has been mutually agreed upon between the parties, or unless unilateral direction is given by the Contract Administrator.

The SSHASP will be presented in a format similar to this example:

1.0 Introduction
2.0 Background Information

Table 2-1 Site Description(s)
Table 2-2 Scope of Work

3.0 Organization, Responsibilities and Authority
4.0 Hazard Analysis
4.1 Personnel by Task
4.2 Hazard Substances of Occupational Health Concern
4.3 Hazard Assessment and Administrative/Engineering Controls
5.0 Site Controls

6.0 Exposure Monitoring and Corresponding Actions
6.1 Direct-Reading Monitoring
6.2 Personal Dosimetry
6.3 Area Sampling
7.0 Personal Protective Equipment

8.0 Decontamination

9.0 Emergency/Incident Action Plan
10.0 Training

11.0 Medical Surveillance

12.0 Quality Control and Quality Assurance (QC/QA)
13.0 Recordkeeping

Appendixes

A Map(s) of Site Locations and Site Control Zones/Facilities
B Hazardous Substance - Hazard Assessment
C Chemical, Physical, and Toxicological Properties of Hazardous Chemical Substances
D Emergency Contacts and Route(s) to Medical Services

ANNEX 7.7

WASTE MANAGEMENT CHECKLIST

Los Alamos
NATIONAL LABORATORY
memorandum

To/MS: Memo To The File
From/MS: T.E. Gene Gould, EES-15, MS G787
Phone/FAX: 5-4348/5-1976
Date: February 6, 1997

Earth and Environmental Science Division
EES-15, Environmental Science Group
Los Alamos, New Mexico 87545

SUBJECT: CHARACTERIZATION STRATEGY FORM

Based on my review of available information and my professional judgment, it is not necessary to sample for tritium because it is not a potential contaminant at PRS 15-009(e).

TEG/nar

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Soils, liquid wastes and sludge, sampling waste/PPE, and decontamination wastes (liquids) from PPE/sampling equipment		

Completed By: J. W. Heyser	Date: March 6, 1997
FPL: T. E. Gould	WMC: Jeff Bingham, EES-15
Type of Activity (site investigation, EC, etc.): VCA	

Description of the Activity (e.g., drilling, surface sampling, excavation and recontouring, soil washing, etc.)

The soils in the outfall area of PRS 15-009(e) were not sampled during the Phase I sampling, so this area will be sampled as part of the VCA before any soil is removed. If the outfall soil contains contaminants of potential concern (COPCs), this area will be remediated. If the soil does not contain COPCs, the remediation will consist only of removing the liquid and sludge (if present) from the septic tank. Following the removal of the liquid and sludge from the tank, it will be washed using a minimum volume of pressurized water. After its decontamination, the tank will be filled with expanding cement and left in place. It the outfall area needs to be remediated, a minimum volume of soil will be excavated and removed as waste. The remediated outfall area will then be returned to its approximate original condition after field activities are completed.

Acceptable Knowledge

Site Description, Site History, and Historical Waste Generating Processes or Activities: (Include dates for site history). PRS 15-009(e) is an inactive septic tank located approximately 175 ft. south of building TA-15-27 (the underground control room for the E-F Firing Site). No discharges to this septic tank have occurred since 1981 when operations ceased at the E-F Firing Site. The E-F Firing Site was the most extensively used site at LANL between 1947 to 1973. Up to 2,500 lbs. of explosives were used in individual tests. Both natural uranium and depleted uranium were used, and other potential contaminants include beryllium, lead, and mercury, and HEs and their residues. However, there is no reason to believe that these contaminants would have been deliberately or accidentally introduced into PRS 15-009(e). This septic tank is located southwest of the control building TA-15-27, which is over 1,000 ft. from Firing Site E and approximately 400 ft. from the smaller Firing Site F. Its location was outside the major blast zone for both firing sites (RFI Work Plan for OU 1086, July 1993).

Previous Investigation Analytical Results: (Report the analytical methods and results above background levels)

Phase I sampling was conducted in 1994 when two liquid samples were collected at different locations within the septic tank. These were analyzed for VOCs, SVOCs, HE, metals (lead, mercury and beryllium), total uranium and tritium. The concentrations of inorganics for each of the samples were similar and are as follows: beryllium (0.3 & <1.0 μg/l), lead (23 & 462 μg/l), mercury (1.4 & 2.2 μg/l, but both samples exceeded the holding time for mercury), and uranium (65.3 & 251 μg/l). Both lead and mercury were below their respective RCRA Waste Toxicity Characteristic concentrations of 5,000 and 200 μg/l. No organics or tritium were detected in either of the samples submitted for laboratory analysis.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Soils		

Waste Description

Description of Waste Type, Potential Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Soil
Potential Regulatory Status: Low-level radioactive waste
Volume Estimate: Five 55-gal. drums for soil from the outfall area, if remediated.
Waste Packaging: Sealed 55-gallon drums

Characterization Strategy

Description of Strategy:

One composite sample will be taken as each 55-gal. drum is filled. This sample will be analyzed for TCLP metals, SVOCs, HE and isotopic uranium. The soil in the drainage area will be analyzed for VOCs only if they are detected in the Phase I subsurface samples taken from this area. Field screening by hand-held instruments will be used to monitor for alpha, beta and gamma radiation. HE will be detected by a field spot test, but later verified by laboratory analysis. Soil from the outfall area of PRS 15-009(e) will be removed only if the analytical results from the in situ samples show sufficient levels of metals (beryllium, lead, mercury, and uranium) to warrant remediation. If the outfall soil is not contaminated, it will be left in place.
Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)
One composite sample will be taken from each 55-gal. drum. One composite sample is considered to be representative because both the soil and sludge wastes are expected to be fairly homogenous. The composite sample will consist of a minimum of five subsamples and will be analyzed for constituents listed above. VOCs will be analyzed from a separate grab sample taken from the soil (if Phase I sampling shows that this soil contains VOCs).

* Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
* Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris.

Analytical Strategy

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents	SW 846 8240	Yes (If present in Phase I samples)	X		
Semivolatile Constituents	SW 846 8270	Yes	X		
Organic Pesticides		No		X	
Organic Herbicides		No		X	

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Soils		

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Pesticides & PCBs		No		X	
PCBs		No		X	
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constit. (specify)		No		X	
High Explosive Constituents	SW 846 8330	Yes	X		
Asbestos		No		X	
TPH		No		X	
TCLP Metals	SW 846 1311, 6010, 7470	Yes	X		
TCLP Organics		No		X	
TCLP Pest. & Herb.		No		X	
Gross Alpha	Field Screen	Yes	X		
Gross Beta	"	Yes	X		
Gross Gamma	"	Yes	X		
Tritium[1]		No		X	
Gamma Spectro.		Yes		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium	HASL 300	Yes	X		
Total Uranium		Yes		X	
Strontium-90		No		X	
Americium-241		No		X	

[1] If tritium is not expected, attach a statement signed by the FPL stating that, based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Soils		

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR 261. List the F-, D-, K-, P-, or U- category and number.

In Phase I sampling, no organics or tritium were detected and all metals were below their RCRA Toxicity Characteristic levels. The soil wastes will be sampled for TCLP metals, SVOCs, HE, and isotopic uranium; and sampled for VOCs if present in the Phase I samples. A final RCRA determination will be made after the soil and sludge sample results are evaluated.

Preliminary RCRA Status

_X_ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled: Wastes will be stored on site in sealed 55-gallon drums until the soil results are evaluated and a final RCRA determination is made.

____ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

Total uranium was detected at an elevated level in the liquid samples taken from the septic tank. Isotopic uranium analyses will be performed and based on these results a final radioactive determination will be made for the soil. Initially these wastes will be managed as low-level radioactive wastes. .

Preliminary Radioactivity Status

Material is not radioactive

Describe how waste will be stored/handled

_X_ Material is radioactive

Describe the controlled area, labeling, and protection against inadvertent contamination. Wastes will be stored inside sealed 55-gallon drums. Each drum will be labeled with a completed and attached radioactive materials tag. The storage are will be roped off and labeled as a radioactive materials storage area.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Liquid wastes and sludge from septic tank		

Waste Description Description of Waste Type, Potential Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Liquid wastes from septic tank including original liquid and rinse water used to decontaminate the inside of the septic tank, and sludge if present. Different waste types will be segregated.
Potential Regulatory Status: Low-level radioactive waste.
Volume Estimate: Forty 55-gallon drums for liquids and one drum for sludge.
Waste Packaging: Drums will be sequentially labeled (1 to 40) while the liquid is pumped into each drum.

Characterization Strategy

Description of Strategy:

A grab sample for the liquid wastes will be taken from every fifth drum as the liquid is pumped from the septic tank. The last drum that is filled will also be sampled as it is the drum most likely to contain some resuspended sludge. A grab sample is considered to be representative for each fifth drum sampled because the liquid waste, decontamination liquid, and sludge from the septic tank are each expected to be fairly homogenous. See Phase I results on page one. Both types of waste liquids and sludge will be sampled for TCLP metals, SVOCs, HE, and isotopic uranium. However, only the original liquid in the tank and sludge will be sampled for VOCs. The results for the drum analyses will also be compared with the two Phase I samples taken from the septic tank. One sample for the sludge is considered adequate, because when the septic tank liquid above the sludge was sampled in Phase I in 1994, no VOCs were detected. The sludge waste will be put in a different drum. Further analyses may be required to meet the waste acceptance criteria of a TSD after the hazard and radioactive determination are made for each waste type.
Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)
One grab sample is considered representative for the liquid in every fifth drum. A separate grab sample for VOCs will be taken from the original liquid and sludge in the septic tank. The analyses to be performed are listed above. * Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
* Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris.

Analytical Strategy

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents	SW 846 8260	Yes (septic tank liquid and sludge)	X		
Semivolatile Constituents	SW 846 8270	Yes	X		
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides and PCBs		No		X	
PCBs		No		X	

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic system
Specific Waste Type: Liquid wastes and sludge from septic tank		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constit. (specify)		No		X	
High Explosive Constituents	SW 846 8330	Yes	X		
Asbestos		No		X	
TPH		No		X	
TCLP Metals	SW 846 1311, 6010, 7470	Yes	X		
TCLP Organics		No		X	
TCLP Pest. & Herb.		No		X	
Gross Alpha		Yes			X
Gross Beta		Yes			X
Gross Gamma		Yes			X
Tritium[2]		No		X	
Gamma Spectro.		Yes		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium	HASL 300	Yes	X		
Total Uranium		Yes		X	
Strontium-90		No		X	
Americium-241		No		X	

[2] If tritium is not expected, attach a statement signed by the FPL stating that, based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System

Specific Waste Type: Liquid wastes and sludge from septic tank

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR 261. List the F-, D-, K-, P-, or U- category and number.

In Phase I sampling, no organics or tritium were detected and all metals in each of the samples were below their RCRA TC screening levels. The original septic tank liquid, the decontamination liquid, and sludge will be analyzed for TCLP metals, SVOCs, HE and isotopic uranium. VOCs will be analyzed in the septic tank liquid and sludge, but not the decontamination liquids. If the liquid in any of the drums is RCRA hazardous waste based on the their sampling results, then the drum filled before and the drum filled after that drum will also be sampled before their disposal. A final RCRA determination will be based on the results for all waste types.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)

Describe how waste will be stored/handled: Wastes will be stored onsite in sealed 55-gal. drums. The septic tank liquid, decontamination liquid, and sludge will in segregated in separate containers. A final RCRA determination for each waste type will be based on an evaluation of all sample results. Additional sampling of drums not originally sampled may be required, if one or more the drums are determined to be RCRA hazardous.

_____ RCRA: (90-Day Storage Requirement)

Waste will be stored/handled in accordance with 20 NMAC Generator Requirements

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

Uranium (total) was present in both liquid samples analyzed during Phase I. All wastes will be initially managed as low-level radioactive waste.

Preliminary Radioactivity Status

_____Material is not radioactive

Describe how waste will be stored/handled

__X__ Material is radioactive

Describe the controlled area, labeling, and protection against inadvertent contamination. Liquid wastes will be stored in sealed 55-gal. drums. Each container will be labeled with a completed and attached radioactive materials tag. The storage area will be roped off and labeled as a radioactive materials storage area.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: PPE and sampling equipment		

Waste Description Description of Waste Type, Potential Contaminants, Volume Estimate, and Waste Packaging: Waste Type Description: PPE & sampling equipment
Potential Regulatory Status: Visibly contaminated items will be considered low-level radioactive waste (based on the radiological field screening results of the soil removed). Visibly uncontaminated items will be considered non-hazardous or radioactive waste based on similar field screening results.
Volume Estimate: The volume generated will be one 55-gal. drum or less.
Waste Packaging: The PPE will be placed in sealed and labeled plastic bags that are segregated into visibly contaminated and uncontaminated categories. The sealed bags will be stored in a 55-gal. drum at the PRS

Characterization Strategy

Description of Strategy: If possible, the PPE/sampling equipment will be decontaminated prior to disposal. After decontamination, the PPE/sampling equipment will be field screened for gross alpha, gross beta and gross gamma radiation in accordance with LANL-ER-SOP-10.07, "Field Monitoring for Surface and Volume Radioactivity Levels." Gross alpha radiation will be screened using an alpha probe, gross beta radiation will be screened using a beta/gamma probe, and gross gamma radiation will be screened using a Ludlum Model 2221 Scaler/Ratemeter with a Ludlum Model 44-10 2" x 2" Gamma Scintillator (SPA-3), which is equivalent to micro-R. The waste will be inspected to determine if there is any visible contamination. If it is not visibly contaminated and does not have readings above background radioactivity, it will be placed in plastic bags, segregated by PRS. The final disposal site will be determined based on the results for the soil and septic tank liquids.
If the PPE/sampling equipment is not decontaminated or if decontamination is not effective, the contaminated piece(s) will be placed in separate plastic bags, segregated by PRS. Each plastic bag will be labeled with the PRS number. The RCRA and radioactivity status of the contaminated items will be based on the analytical results of soil samples associated with this PRS (See Analyte Suite section of this form). The PPE/sampling equipment will be assumed to have a similar level of contamination as the highest level reported in a single soil or liquid sample at this PRS.
Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)
The PPE/sampling equipment will not be directly sampled, but will be characterized based on the soil and liquid results as described above.

* Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
* Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris.

Analytical Strategy

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents		No		X(Phase I results)	
Semivolatile Constit.		Yes			X
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides and PCBs		No		X	
PCBs		No		X	

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: PPE and sampling equipment		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes			X
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constituents		Yes			X
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Yes			X
TCLP Organics		No		X	
TCLP Pesticides and Herbicides		No		X	
Gross Alpha	Field Screen	Yes	X		
Gross Beta	"	Yes	X		
Gross Gamma	"	Yes	X		
Tritium[3]		No		X	
Gamma Spectro.		Yes(from U)		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium		Yes			X
Total Uranium		Yes			X
Strontium-90		No		X	
Americium-241		No		X	

[3] If tritium is not expected, attach a statement signed by the FPL stating that, based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: PPE and sampling equipment		

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR 261. List the F-, D-, K-, P-, or U- category and number.

During Phase I sampling of the septic tank liquid, no organics or tritium were detected and metals were below their RCRA TC levels. The soil and liquid (including sludge) wastes will be sampled for TCLP metals, SVOCs, HE and isotopic uranium. Septic tank liquid and sludge will also be sampled for VOCs. PEE/sampling equipment will be segregated according to the location where they were used (septic tank or drainage areas). A final RCRA determination for the PPE/sampling equipment will be based on an evaluation of all sample results.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:
Visibly contaminated and uncontaminated items will be segregated and managed as non-RCRA wastes. A final RCRA determination will be made after the soil and liquid waste samples are evaluated.

_____RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.
Visibly contaminated PPE and sampling equipment will be initially classified as radioactive waste. Visibly uncontaminated PPE and sampling equipment is expected to be non-radioactive. A final radioactive determination will be based on the isotopic uranium analyses for the soil and liquid wastes.

Preliminary Radioactivity Status

__X__ Material is not radioactive
Describe how waste will be stored/handled. Visibly uncontaminated items will be placed in separately labeled and sealed plastic bags and stored along with the visibly contaminated items in a 55-gal drum.

_____ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination. Visibly contaminated items will be placed in separate sealed and labeled plastic bags and stored inside a 55-gal. drum. The drum will be stored along with the containers of soil and liquid waste in a roped-off area that is labeled as a radioactive materials storage area.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Decontamination wastes (liquids) for PPE/sampling equipment		

Waste Description

Description of Waste Type, Potential Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Decontamination liquids consist of Liquinox® detergent, tap water and distilled water.
Potential Regulatory Status: Low-level radioactive liquid waste.
Volume Estimate: A total volume of less than 30 gallons.
Waste Packaging: The liquid will be placed inside a 55-gallon drum.

Characterization Strategy

Description of Strategy:

The decontamination liquids will be characterized for RCRA based on the results of an analysis of a grab liquid sample. Phase I sample results indicated a lack of VOCs in the septic tank liquid. The actual removal of the soil in the drainage area, if needed, will be a part of a separate VCA. One grab sample of the decontamination liquids will be analyzed for TCLP metals, HE, SVOCs, and isotopic uranium. The decontamination liquids from this PRS will be segregated, placed in a separate drum and labeled with the PRS number. Further analyses may be required to meet the waste acceptance criteria of the TSD after the hazard and radioactive determination is made for the decon. liquids.
Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)
A grab sample was selected because the waste is expected to be homogeneous. One sample per waste stream was considered sufficient because of the small volume of the waste stream (less than 30 gallons).

* Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
* Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris.

Analytical Strategy

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents		No		X(Phase I septic tank results)	
Semivolatile Constituents	SW 846 8270	Yes	X		
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides and PCBs		No		X	
PCBs		No		X	

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Decontamination wastes (liquids) from PPE and sampling equipment		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constit. (specify)		No		X	
High Explosive Constituents	SW 846 8330	Yes	X		
Asbestos		No		X	
TPH		No		X	
TCLP Metals	SW 846 1311, 6010, 7470	Yes	X		
TCLP Organics		No		X	
TCLP Pest. & Herb.		No		X	
Gross Alpha		Yes		X	
Gross Beta		Yes		X	
Gross Gamma		Yes		X	
Tritium[4]		No		X	
Gamma Spectro.		Yes (from U)		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium		Yes		X	
Total Uranium	HASL 300	Yes	X		
Strontium-90		No		X	
Americium-241		No		X	

[4] If tritium is not expected, attach a statement signed by the FPL stating that, based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Decontamination wastes (liquids) from PPE and sampling equipment		

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR 261. List the F-, D-, K-, P-, or U- category and number.

During Phase I sampling, no organics or tritium were detected and metals were all below their RCRA TC screening levels in the septic tank liquid samples. Decontamination liquids will be sampled for TCLP metals, SVOCs, HE and isotopic uranium. VOCs will not be analyzed in the these decontamination liquids because they were not detected in the Phase I septic tank samples. A final RCRA determination will be made after the liquid sample results are evaluated.

Preliminary RCRA Status

_X_ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled: Decontamination liquid wastes will be initially managed as non-RCRA waste. A final RCRA determination will be made after the liquid sample results are evaluated.

____ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

Total uranium was detected in the septic tank liquid samples during Phase I sampling, but isotopic uranium analyses were not performed. The decontamination liquids will be initially classified as low-level radioactive waste, and a final radioactive determination will be based on the isotopic uranium results.

Preliminary Radioactivity Status

____ Material is not radioactive
Describe how waste will be stored/handled

_X_ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination

The decontamination liquids will be stored in a sealed 55-gal. drum that is labeled radioactive. This drum will be stored along with the containers of soil and liquid wastes inside a roped-off area labeled as a radioactive materials storage area.

WASTE CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-009(e)	Septic System
All Waste Types or Wastestreams: Soils (including sludge), liquid wastes, sampling waste/PPE, and decontamination wastes (liquids) from PPE and sampling equipment		

Signatures:

Field Team Leader Tracy Wm Fa 3/17/97

Field Team Waste Management Coordinator Jeff Bingham 3-14-97

Waste Management Representative Mary Jane Wind 3/12/97

ANNEX 7.8

VCA CHECKLIST AND FIELD WORK AUTHORIZATION FORM

Voluntary Corrective Action (VCA)
Checklist and Fieldwork Authorization Form

PRS 15-009(e) HSWA or AOC

X_____ COPC(s) defined.

X_____ Nature and extent defined or field screening method available to guide where not defined.

X_____ Remedy is obvious.

X_____ Time for removal is less than 6 months.

X_____ Remedy is final.

X_____ Land use assumptions straightforward.

X_____ Treatment, Storage, Disposal Facilities are available for waste type and volume.

X_____ 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.

FPL _____ Date 4/24/97

FPC _____ Date 4/24/97

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

FPL _____ Date 4/24/97

FPC _____ Date 4/24/97

Through reviewing the VCA Plan, for site(s) 15-009(e) and believing that the above criteria have been met, I authorize the fieldwork to proceed.

DOE ER Program Manager_____ Date 4/25/97

ANNEX 7.9

COST ESTIMATE FOR PRS 15-009(e)

Table 7.9-1 is a cost estimate for the VCA at PRS 15-009(e).

TABLE 7.9-1*

COST ESTIMATE

Plan Development	$ 1,500
Mobilization	$ 2,500
Cleanup	$ 10,000
Verification Sampling	$ 15,000
Waste Disposal**	$100,000
Field Screening	$ 3,000
Demobilization/Site Restoration	$ 1,000
Reporting	$ 1,000
Total Cost	$134,000

*Cost estimate is for the cleanup of the septic tank only.
**Note: Worst case estimate assuming all liquid is mixed waste.

8.0 REFERENCES

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LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086," Los Alamos National Laboratory Report LA-UR-92-3968, Los Alamos, New Mexico. (LANL 1993, 1087)

LANL (Los Alamos National Laboratory), July 15, 1994. "LANL Survey Monument Network Manual," Revision 2, ER ID No. 55599, Facilities, Securities, and Safeguards Division, Los Alamos, New Mexico. (LANL 1994, 1395)