

**PRS 21-024(i)**



10562

**Inactive Septic System and Outfall  
TA-21  
SRS Score = 53  
HWSA Module**



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ER2000-0456 VG-00-000(1)

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*AS with LNUK 1/11/06/21-024(i)*

*TU*

# PRS Description

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- Inactive septic system and outfall at TA-21
- Serviced buildings TA-21-152, -166, and -167 - sanitary and non-contact wastewater only
- Outfall discharged to slope leading to Los Alamos Canyon (Areas 2 & 3)
- System abandoned in place in 1965



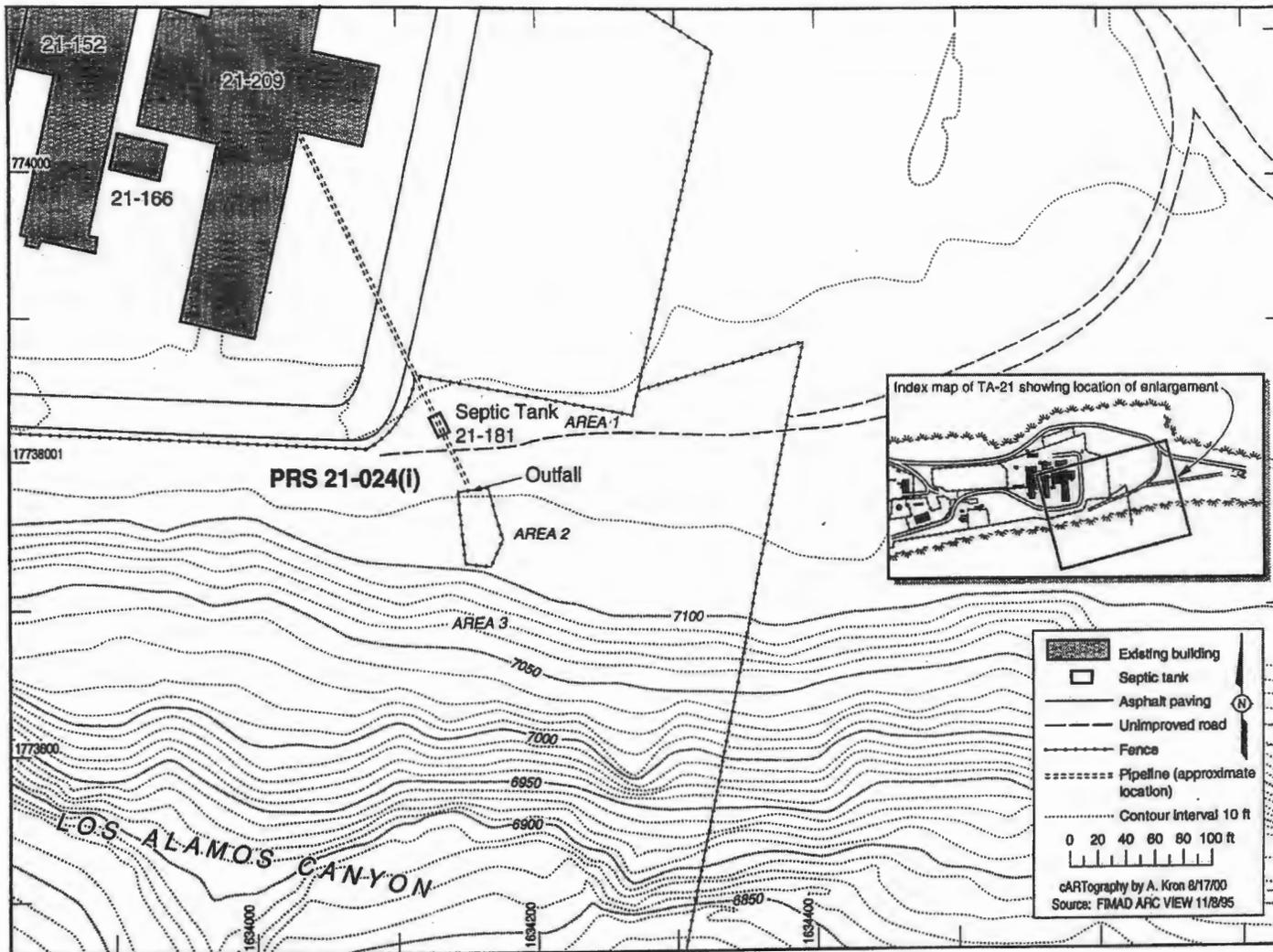


Figure 1-1 PRS 21-024(I) site map

# PRS Description (continued)

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- **Mesa top slope 10% away from LA Canyon, drops to bench approximately 40 ft below rim (Area 3)**
- **On list of 684 PRSs in or near water courses**
- **Operated from 1945 - 1965**
  - ◆ **constructed of reinforced concrete**
  - ◆ **discharged through 6-in. VCP to broad slope (Area 2) 60 ft from canyon rim**

# PRS Description (concluded)

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- RFI report dated January 1995 contains results
- Land-use scenario - industrial/LANL control
- Partial Interim Action implemented in 1998
  - ◆ removed portion of source term from mesa top, plugged septic tank outlet line, and installed BMPs

# Phase I PRS Characterization

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- **FY92 - radiation survey and 6 soil samples collected from 3 locations within Area 2**
  - ◆ radionuclides and arsenic above SALs, no VOCs
- **FY93 - more detailed radiation survey and 11 soil samples collected from 8 locations within Area 2, plus one 20-ft-deep borehole SW of tank**
  - ◆ radionuclides and metals above SALs in soils
  - ◆ tritium above SAL in borehole intervals down to 15 ft
  - ◆ organics not detected

# Phase II PRS Characterization

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- **FY97 - top of tank excavated and opened, 4 boreholes drilled around tank, radiological survey of entire outfall area, and collection of soil samples from outfall areas (Areas 2 and 3)**
  - ◆ **tank contained 10 yd<sup>3</sup> sludge with several inches of free-standing water on top, both layers sampled for waste characterization**
  - ◆ **tritium, VOCs, and metals detected in boreholes around tank**

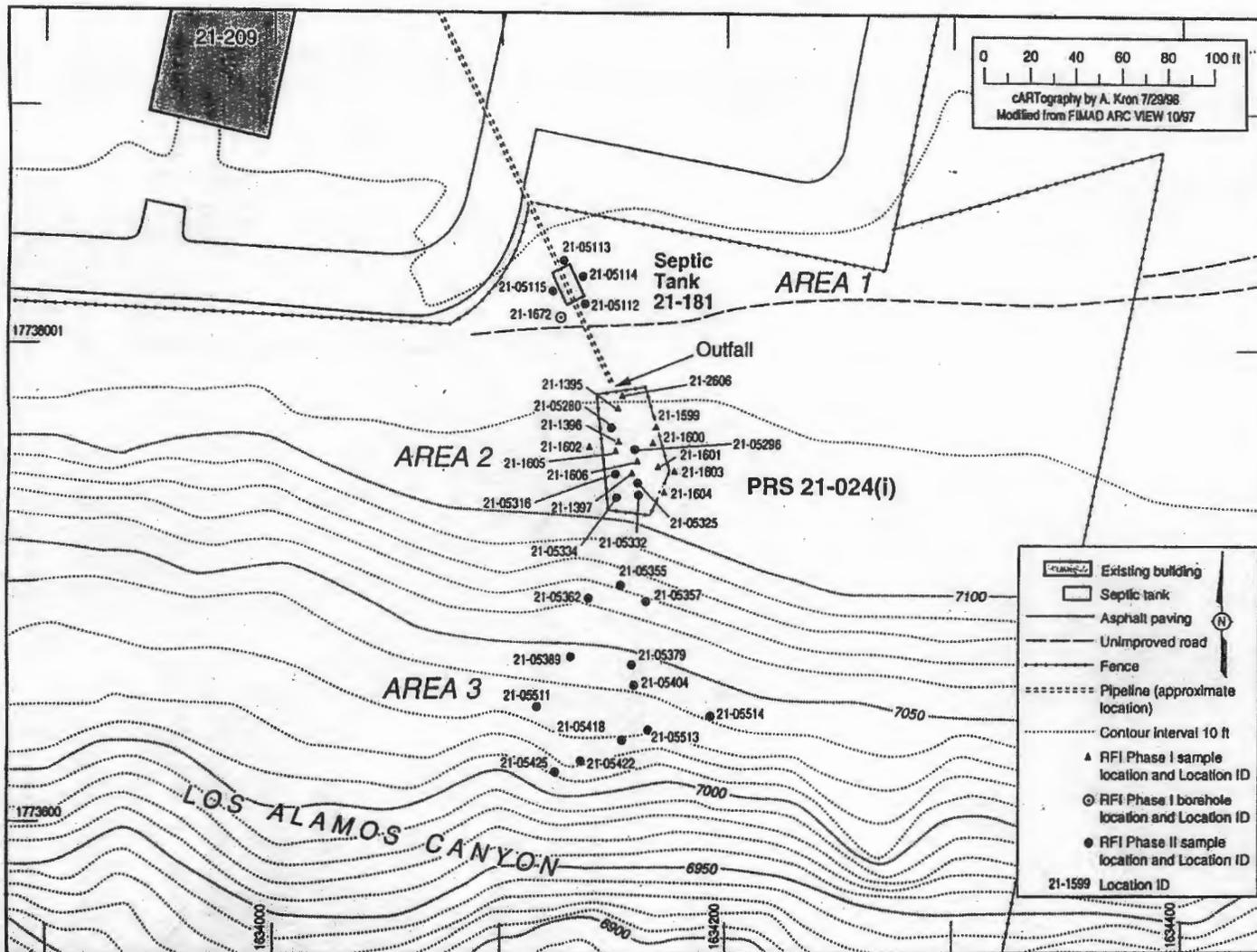


Figure 9.1-1. PRS 21-024(i) Site Map.

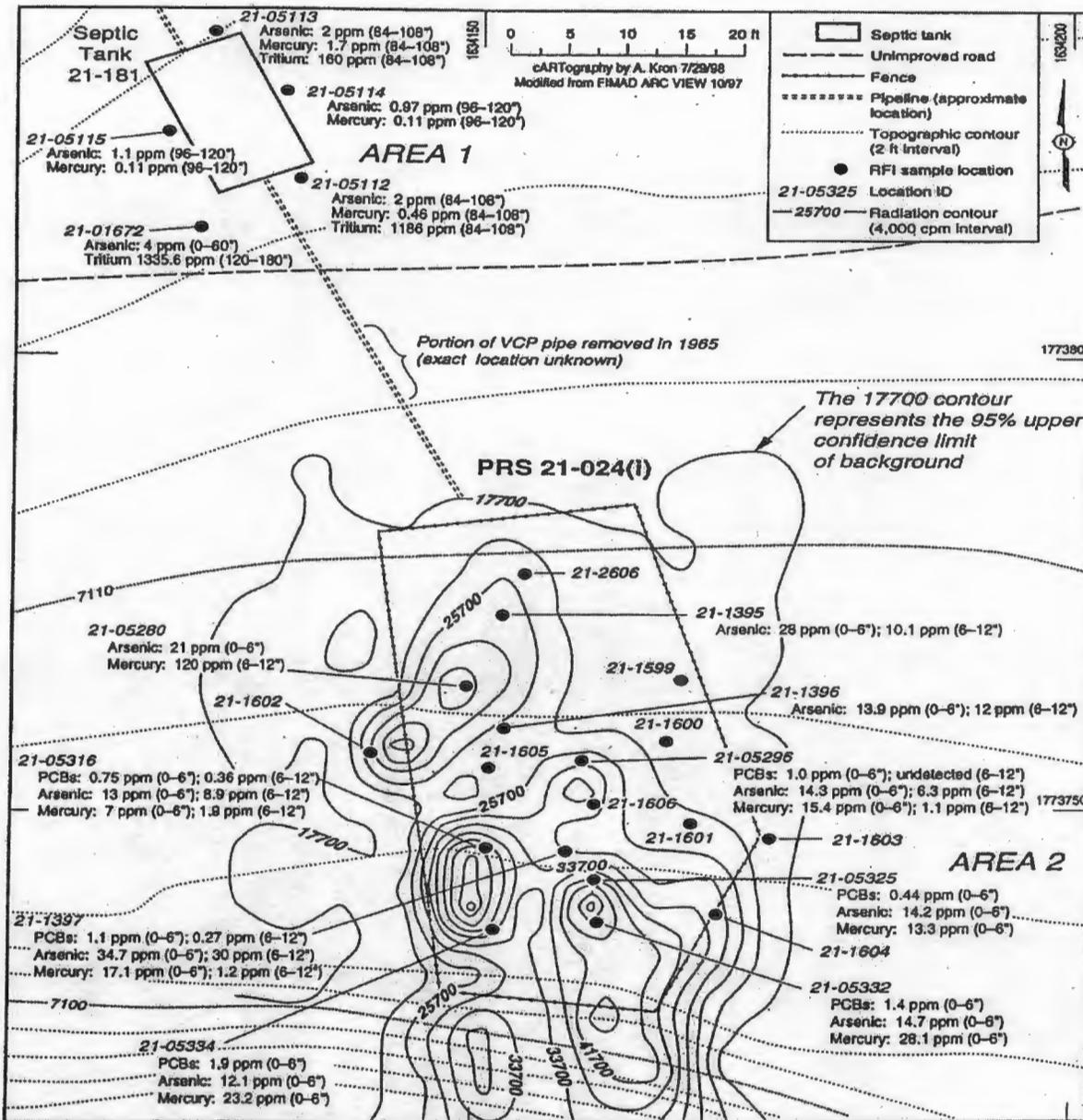


Figure 9.1-2. PRS 21-024(l) Sampling Map at Areas 1 and 2.

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# **Phase II PRS Characterization (concluded)**

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- ◆ **waste remaining in tank contains radionuclides, metals, VOCs, and <50 ppm PCBs (no known source)**
- ◆ **samples from outfall (Area 2) showed low levels of metals, PCBs, and radionuclides**
- ◆ **data for Area 3 not yet assessed**

**Analytical results and details from all previous investigations at PRS 21-024(i) will be provided in the VCA Plan**



# Interim Action

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- **Called for the removal of the septic tank and its contents, inlet and outlet lines, and contaminated soil from the outfall (Area 2)**
  - ◆ **5 soil samples collected from outfall area for waste characterization for VOCs - none detected**
  - ◆ **soil excavated in a 8 to 10-in. lifts from a 2000-ft<sup>2</sup> area**
  - ◆ **radiological confirmation survey confirmed post-excavation levels ranging from 2810 to 3390 cpm**

# Interim Action (continued)

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- ◆ Isolated rad hot spots were also removed
- ◆ 17 confirm samples collected from 16 random locations on a 10-ft grid, analyzed at fixed lab for metals, pesticides, PCBs, SVOCs gamma spec, alpha spec, and tritium
- ◆ Confirm samples showed only low concentrations of metals and radionuclides in Area 2
- ◆ Outlet line was plugged

Looking west at excavated area,  
end of outlet pipe in right, center



Looking south, pin flags placed at sample locations  
in preparation for sampling (pink flags -16 pts)

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Looking north, diversion ditch installed around septic tank cover



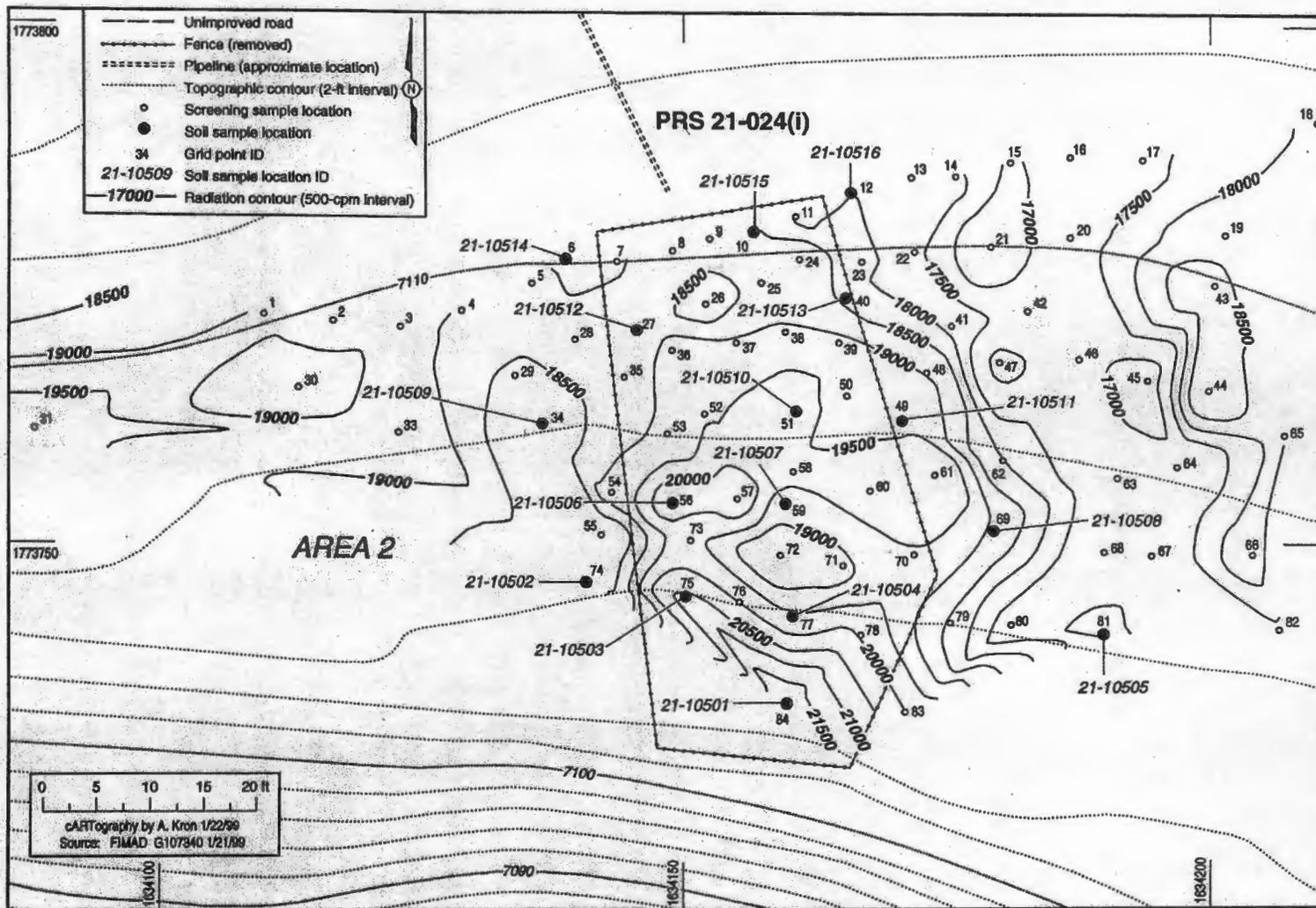


Figure 2. PRS 21-024(i) post excavation radiological survey.



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# Interim Action (concluded)

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- Stormwater run-on and runoff controls installed, routinely inspected and maintained
- Removal of the septic tank, its contents, and the inlet and outlet lines was not completed during the IA because a waste disposal alternative was not available at the time

Looking south, excavated area after restoration,  
straw mulch with binder was placed over area

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# Looking southwest, restoration of Area 2 following IA

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Looking north from center of excavated area, (after restoration),  
outlet pipe upper center

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# Proposed Cleanup

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- **Removal of septic tank contents (followed by steam cleaning) and removal of tank, the inlet and outlet lines, and any contaminated soils within Area 1 - followed by confirmation sampling**
  - ◆ **an off-site disposal alternative has been identified for the septic contents**
- **Supplemental characterization of outfall Areas 2 and 3, possible excavation of soils, confirm sampling with fixed lab analyses**
  - ◆ **field screening to guide any excavation and sampling**

# Site-Specific Rad Cleanup Levels

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- **Basis for cleanup**
  - ◆ **industrial land use, will remain under Laboratory control (restricted access) for foreseeable future**
  - ◆ **PRS located in drainage area**
  - ◆ **remediation will eliminate potential for contaminant migration**
- **Derivation of cleanup levels will be discussed during preparation of VCA Plan**

# Waste Types and Volumes

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- Septic tank contents/steam cleaning liquids (mixed-LLW): 1,500 gal.
- Concrete rubble (septic tanks & lines) (LLW): 5 yd<sup>3</sup>
- Contaminated soil (LLW): 25 yd<sup>3</sup>
- Sampling waste/PPE (LLW): 2 yd<sup>3</sup>
- Decontamination wastes (LLW): 25 gal.



# Schedule/Cost Estimate

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- Time frame - Begin plan preparation in fall 2000
- Duration - 2 months for field work, FY01 for entire project
- Cost estimate - \$1.2 million (assumes only the septic tank contents and steam cleaning waste will be managed as mixed LLW)

# Implementation

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- **Storm Water Pollution Prevention Plan**
- **Supplement current run-on and runoff control measures, as necessary**
- **Remove tank contents and steam clean tank/lines**
  - ◆ **sample and analyze rinse water to ensure no RCRA constituents remaining in tank/lines**
- **Remove tank, inlet and outlet lines, and collect confirm samples from excavation to verify cleanup, characterize rubble**

# Implementation (continued)

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- **Remove additional soil (as necessary) based on screening and analytical results**
- **Collect supplemental characterization samples from outfall Areas 2 and 3 for fixed lab analyses**
- **Remove contaminated soils as necessary and collect confirm samples for offsite analyses to verify cleanup**
- **Site Restoration**
  - ◆ **recontour, reseed, and monitor runoff control measures until 75% regrowth of vegetation is achieved and/or control concurrence received by ESH-18**



# Implementation (concluded)

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- **Dispose of waste**
- **Decontaminate equipment**
- **Write completion report**
- **Submit NFA permit modification request**



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