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Headquarters 377th Air Base Wing (AFMC)

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MEMORANDUM FOR MR. BENITO GARCIA, CHIEF
HAZARDOUS & RADIOACTIVE MATERIALS BUREAU
NEW MEXICO ENVIRONMENT DEPARTMENT
PO BOX 26110
SANTA FE NM 87502

FROM: 377 ABW/EM
2000 Wyoming Blvd SE, Ste D-4
Kirtland AFB NM 87117-5659

SUBJECT: Sampling and Analysis Plan

1. We are forwarding three copies of the Sampling and Analysis Plan (SAP) for Solid Waste Management Units RW-68 and SS-69. We ask that you forward one copy to Mr. Steve Pullen of your office.
2. The SAP will be used to conduct a RCRA Facility Investigation (RFI) at these two sites. The RFI report is due to your office by 31 December 1997.
3. Please contact Mr. Christopher DeWitt, (505) 846-0053, or me, (505) 846-2751, if you have any questions.


JAMES R. FRASER, Lt Col, USAF
Director
Environmental Management Division

Attachment:
SAP

cc:
EPA Region 6 (Ms. Morlock)
CH₂Mhill (Ms. Halloran)
AFCEE/ERDM (Mr. Arnold)

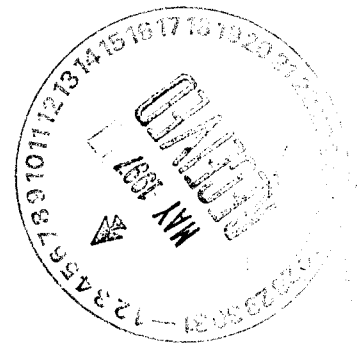
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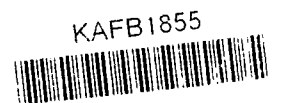
**Kirtland Air Force Base
Albuquerque, New Mexico**

**RCRA Facility Investigation
Sampling and Analysis Plan
Solid Waste Management Units RW-68 and SS-69**

Final Draft - April 30, 1997



**377 ABW/EMR
2000 Wyoming Blvd. SE
Kirtland AFB, New Mexico 87117-5659**



**INSTALLATION RESTORATION PROGRAM
KIRTLAND AIR FORCE BASE
ALBUQUERQUE, NEW MEXICO**

**FINAL DRAFT
RCRA FACILITY INVESTIGATION (RFI) SAMPLING AND ANALYSIS PLAN
SOLID WASTE MANAGEMENT UNITS RW-68 and SS-69**

APRIL 30, 1997

Prepared For
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ENVIRONMENTAL RESTORATION DIVISION
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DSN: 240-5288 COMM: (210) 536-5288
USAF CONTRACT NO. F41624-94-D-8053 DELIVERY ORDER NO. 0092**

Prepared By
**CH2M HILL
ALBUQUERQUE, NEW MEXICO**

NOTICE

This sampling and analysis plan has been prepared for the United States Air Force by CH2M HILL for the purpose of aiding in the implementation of a final remedial action plan under the Air Force Installation Restoration Program (IRP). As the plan relates to actual or possible releases of potentially hazardous substances, its release prior to an Air Force final decision on remedial action may be in the public's interest. The limited objectives of this plan and the ongoing nature of the IRP, along with the evolving knowledge of site conditions and chemical effects in the environment and health, must be considered when evaluating this plan, since subsequent facts may become known which may make this plan premature or inaccurate.

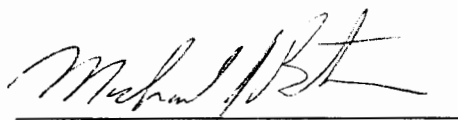
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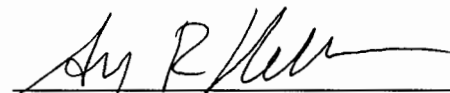
PREFACE

This RCRA Facility Investigation (RFI) Sampling and Analysis Plan (SAP) specifies the field sampling activities that will be performed during 1997 at two solid waste management units in Appendix IV to the Module IV of the RCRA Part B Permit for Kirtland Air Force Base (AFB). The plan addresses the requirements of the U.S. Air Force (USAF) statement of work, dated February 13, 1997.

This report was prepared by CH2M HILL in April 1997. Mr. Bassim D. Shebaro of the Air Force Center for Environmental Excellence was the Restoration Team Chief and Mr. Rodney Arnold served as the Contracting Officer's Representative.



Michael J. Bitner
CH2M HILL Vice President



Amy R. Halloran, P.E.
CH2M HILL Project Manager

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ACRONYMS

AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AOC	area of concern
bls	below land surface
CRP	Community Relations Plan
DCQAP	Data Collection Quality Assurance Plan
DMP	data management plan
DNWS	Defense Nuclear Weapons School
DQO	data quality objective
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
ft	feet
GRO	gasoline range organics
ICM	Interim Corrective Measures
IDWMP	Investigation Derived Waste Management Plan
IRP	Installation Restoration Program
MSD	matrix spike duplicate
NMED	New Mexico Environment Department
PID	photoionization detector
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SAP	Sampling and Analysis Plan
SSHP	Site Safety and Health Plan
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
TS	Training Site
US	United States
VOC	volatile organic compound

1. INTRODUCTION

CH2M HILL and their subcontractor, Brown and Root Environmental, prepared this Sampling and Analysis Plan (SAP) to describe the field activities to be conducted to characterize the nature and extent of contaminants present at solid waste management units (SWMUs) RW-68 and SS-69 at Kirtland Air Force Base (AFB). This SAP will serve as a guide in the field while the investigations are being conducted. The SAP describes site backgrounds and environmental settings, results of previous investigations, data gaps, and site-specific work plans and rationale. The New Mexico Environment Department (NMED) and U.S. Environmental Protection Agency (EPA) Region 6 did not require a separate Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan for these two sites. Rather, the investigations will be conducted in accordance with the Kirtland AFB Base-Wide Plans for the Installation Restoration Program (IRP) (USAF, 1995a).

1.1 Description of Kirtland AFB SWMU Investigations

CH2M HILL will investigate SWMUs RW-68 and SS-69 to characterize the nature and extent of hazardous material releases from each SWMU. The RW-68 site consists of a radium dump/slag piles and cratering area located in the southeast portion of Kirtland AFB. The slag piles are in the floodplain of a major, unnamed arroyo; the cratering area is adjacent to an abandoned dirt runway but is not in the arroyo's floodplain. The SS-69 site consists of a drum storage area within the Defense Nuclear Weapons School (DNWS) Training Site (TS) 6. These sites are listed in Appendix IV to Module IV of Kirtland's RCRA Part B Permit. Their locations are depicted in Figure 1-1.

The objective of the sampling plan at SWMUs RW-68 and SS-69 is to fully delineate the horizontal and vertical extent of contaminants present at each site. Both SWMUs have been designated as high relative risk sites. The results of the RFI will provide information to be used in determining the need for any additional corrective action at each site.

A summary of previous investigations and the proposed scope of work for RW-68 and SS-69 is presented in Sections 2.0 and 3.0 of this SAP, respectively.

1.2 Scoping Documents

This SAP serves as the scoping document for the RW-68 and SS-69 RFI. The following documents will serve as additional project scoping documents during the SWMU investigations:

- IRP Base-Wide Final Project Management Plan
- IRP Base-Wide Final Data Collection Quality Assurance Plan (DCQAP) consisting of Part I: Field Sampling Plan (FSP), and Part II: Quality Assurance Project Plan (QAPP)
- IRP Base-Wide Final Data Management Plan (DMP)
- IRP Base-Wide Final Site Safety and Health Plan (SSHP)

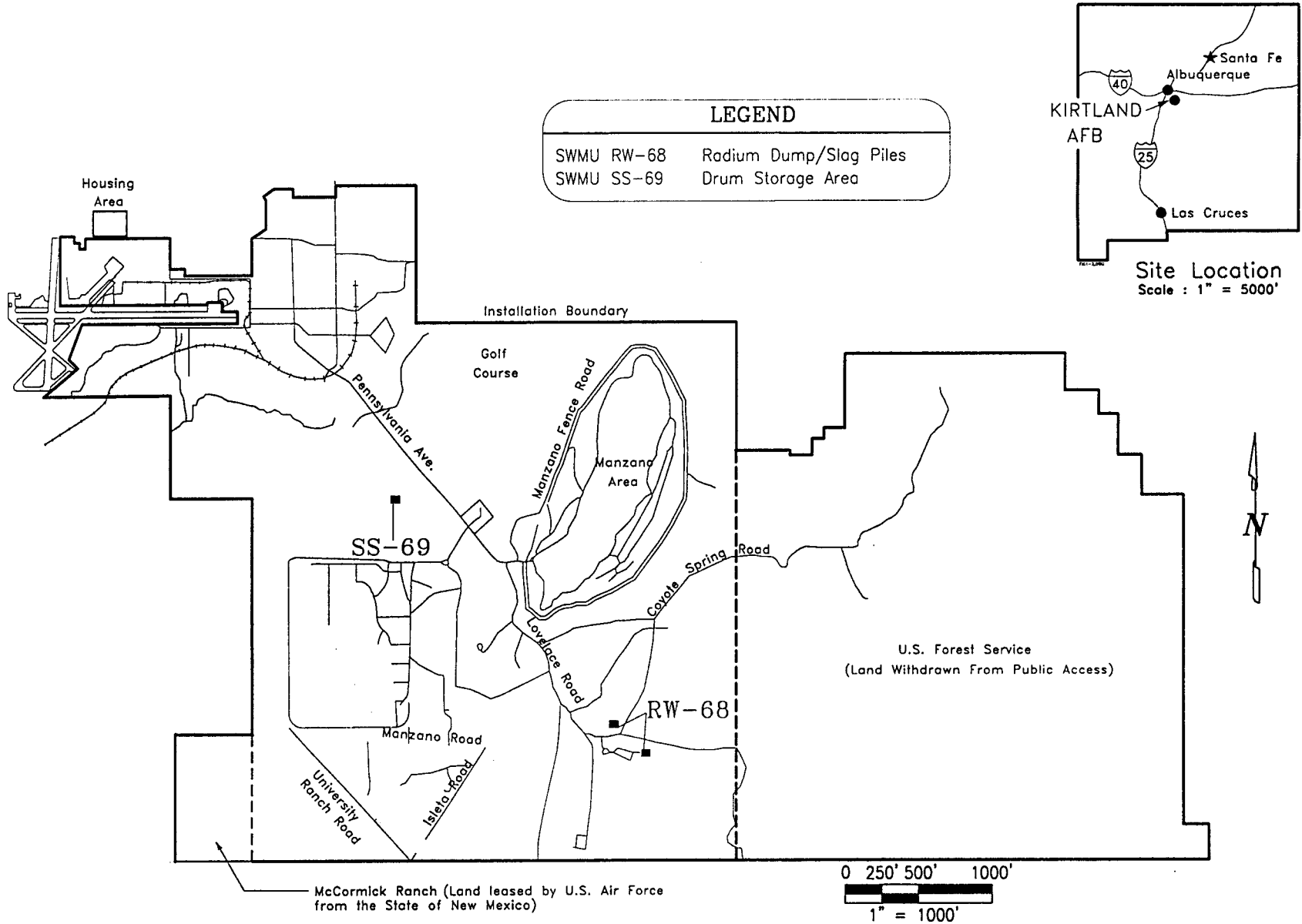


Figure 1-1. Location of SWMUs RW-68 and SS-69

- IRP Base-Wide Final Investigation Derived Waste Management Plan (IDWMP)
- IRP Base-Wide Final Community Relations Plan (CRP).

The procedures detailed in the Base-Wide Plans will be adhered to for all aspects of the RFI activities unless they are specifically modified by this SAP or the subsequent site-specific health and safety plans for RW-68 and SS-69.

2. SWMU RW-68, RADIUM DUMP/SLAG PILES AND CRATERING AREA (RW-68)

RW-68 consists of the radium dump/slag piles and the cratering area. Only the radium dump/slag piles area is the subject of this RFI Sampling and Analysis Plan. The cratering area was investigated in July 1995, and results from that investigation will be presented in the RFI report for these sites.

2.1 Site Background and Environmental Setting

RW-68 is located in the southeast portion of Kirtland AFB, within the floodplain of a major, unnamed arroyo (Figure 1-1). The site area encompasses approximately 5 acres. The topography is flat, with a gentle slope to the arroyo at the southern boundary.

One of the missions at Kirtland AFB during the 1940s and early 1950s was to conduct destructive testing research on captured World War II vintage aircraft. The Cratering Area of this site was used for aircraft research to determine weaknesses and other vulnerabilities under combat conditions. In the course of conducting the vulnerability research, aircraft were subjected to direct fire and/or explosive detonations which resulted in severe damage. Upon completion of the tests, the aircraft hulks were moved from the Cratering Area to what is now the Radium Dump/Slag Piles area, where they were dismantled and incinerated. Previous investigations at the site identified approximately 150 tons of waste material in 19 discrete, open, uncovered piles composed of metal slag, ash, refractory brick, and associated aircraft debris. Previous investigations also documented the presence of radium-226 and heavy metal contamination (lead, cadmium, and selenium) in the slag piles. Luminescent dials, gauges, and other components, prevalent in older aircraft, were the radium sources. Heavy metals were attributed to the ordnance used in the destructive testing and the refractory brick used in the incineration process.

2.2 Results of Previous Investigations

Several previous surveys, investigations and interim corrective measures have been conducted at RW-68:

- Radiological surveys by U.S. Air Force personnel (Caputo, 1992 and 1993) identified radium-226 contamination in the slag piles.
- Waste sampling by an environmental contractor (Perma-Fix, 1994) indicated that ash and refractory brick in the slag piles exceeded RCRA-regulated levels for soluble heavy metals.
- A Phase I RFI to determine the nature and extent of the contamination (USAF, 1995b) included nonintrusive and intrusive sampling. Nonintrusive sampling data indicated that radiological and metallic anomalies strongly correlated with the locations of the slag piles. Intrusive sampling analytical results identified aluminum, chromium, cadmium, lead, nickel, zinc, and radium-226 in ash and soil samples at concentrations above background and confirmed mixed waste-contamination at the site.

- An Interim Corrective Measure (ICM) to minimize any potential threat to human health and the environment was performed by Brown & Root Environmental in 1996 and 1997. The ICM included identification of wastestreams, treatment processes, and disposal requirements, and implementation of remedial actions. Remedial actions included waste removal, packaging, stabilization as necessary, and treatment and disposal of mixed waste, RCRA-hazardous waste, and nonhazardous debris. Radiological and geophysical surveys were conducted concurrently with the remedial action to confirm removal of all radioactive and hazardous wastes. The surveys identified radiological anomalies above twice background levels in areas formerly beneath the slag piles. All soil areas above twice background were subsequently excavated and the excavated materials were packaged for disposal. The ICM removed, and treated and disposed of the following amounts of waste:
 - 110 cu yds of mixed waste-contaminated ash
 - 10 cu yds of mixed waste-contaminated soil
 - 188 cu yds of low-level radioactive waste contaminated soil
 - 5 cu yds of RCRA-characteristic hazardous waste
 - 1 cu yd of radioactive debris
 - 45 tons of nonhazardous debris

2.3 Data Gaps

The completion of the ICM at SWMU RW-68 resulted in the elimination of the sources of radioactive and hazardous waste (slag piles) and the removal of obviously contaminated underlying soils. Confirmatory sampling, to fully delineate the horizontal and vertical extent of remaining soil contamination, is required to determine if any additional waste removal actions are required at the site.

2.4 Work Plan and Rationale

The proposed scope of the field investigation is shown in Figure 2-1 and summarized in Table 2-1. The field program has been designed to fully delineate the horizontal and vertical extent of subsurface soil contamination at the site. Field activities will include the advancement of two background borings and 18 investigative borings in the radium dump/slag piles area to a depth of 12 feet (ft) below land surface (bls). All borings will be drilled using a direct-push drill rig (Geoprobe). Analytical samples will be collected at the 0- to 2-ft, 5- to 7-ft, and 10- to 12-ft intervals. Samples will be field-screened using a photoionization detector (PID) and a beta-gamma meter. Drilling will terminate at 12 ft bls if field-screening results indicate no contamination for two 5-ft intervals. If field-screening indicates the presence of contamination, sampling will continue at 5-ft intervals until field-screening indicates no contamination for two 5-ft intervals. All samples will be analyzed for Target Analyte List (TAL) metals (EPA Methods 6010 and 7471) and gamma spectrometry (EPA Method 901.1). In addition, all samples collected from the 0- to 2-ft interval will be extracted using the Toxicity Characteristic Leaching Procedure (TCLP) (EPA Method 1311) and analyzed for the eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) only (EPA Methods 6010/7000). The analytical parameters and estimated number of samples for the RW-68 investigation are summarized in Table 2-2.

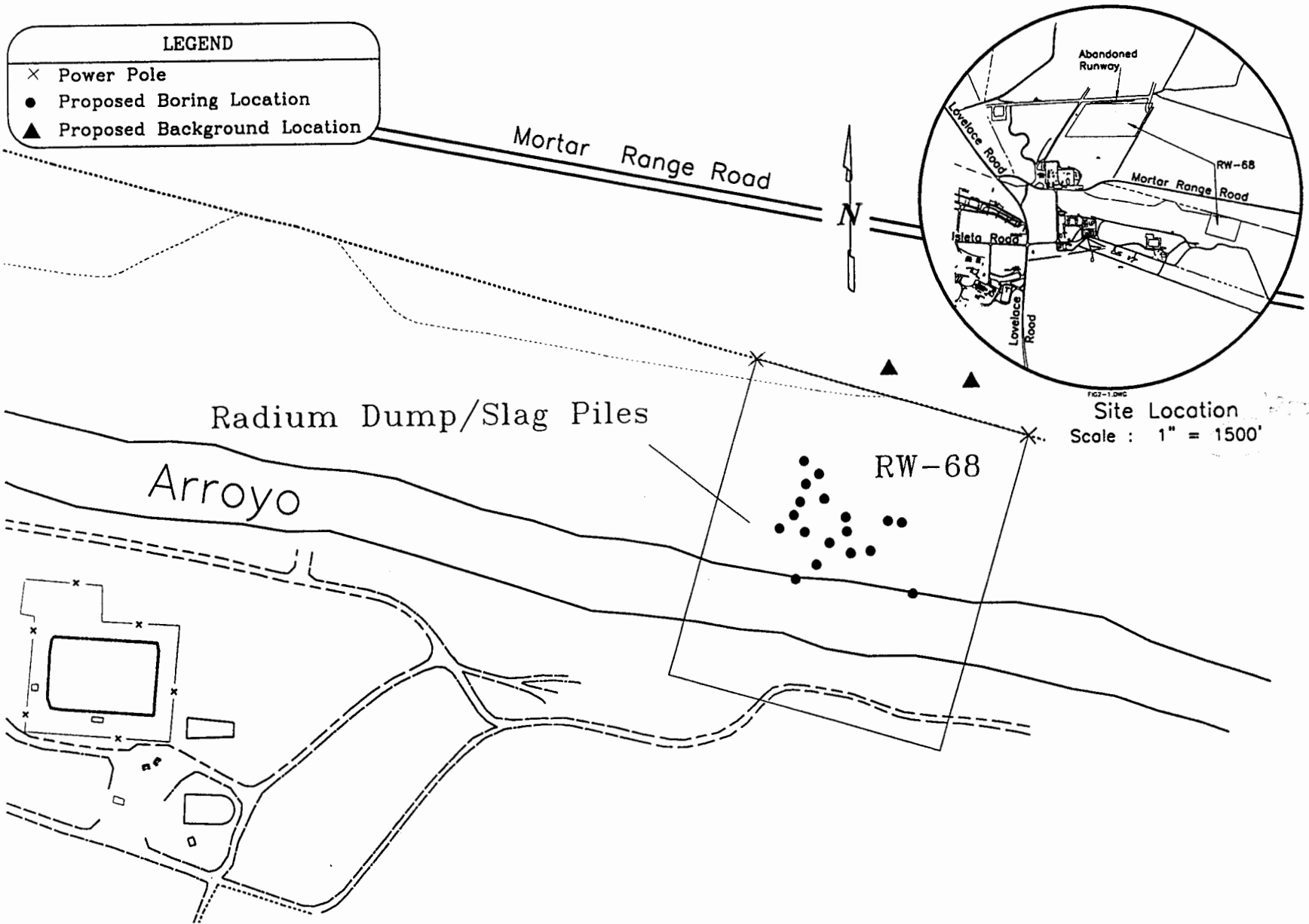


Figure 2-1. Proposed Sampling Locations at SWMU RW-68, Radium Dump/Slag Piles

**Table 2-1. Proposed Sampling For SWMU RW-68,
Radium Dump/Slag Piles and Cratering Area (RW-68)**

Data Needs	Investigative Technique	Number of Samples	Analyses a, b	Selected Analytical Option^c
Fully delineate horizontal and vertical extent of contaminants at site	Drill 18 boreholes and sample at 0- to 2-ft, 5- to 7-ft, and 10- to 12-ft intervals	54 (three samples per boring)	TAL Metals Gamma Spec TCLP - (eight RCRA Metals)	Level II Level II Level II
Determine background concentrations for site soils	Drill two boreholes and sample at 0- to 2-ft, 5- to 7-ft, and 10- to 12-ft intervals	6 (three samples per boring)	TAL Metals Gamma Spec TCLP - (eight RCRA Metals)	Level II Level II Level II

^a TAL metals (EPA Methods 6010 and 7471), Gamma Spec (EPA Method 901.1), TCLP-8 RCRA Metals only (EPA Methods 1311 and 6010/7000).

^b Only the 0-to 2-ft sample will be analyzed using TCLP for the eight RCRA metals.

^c The Level II designation in the "Selected Analytical Option" column refers to the type of analytical data package requested of the analytical laboratory. Level II data packages are defined in the AFCEE contract. Within the specifications of the AFCEE contract and the limitations of the analytical methodology, the Level II report is equivalent to an EPA report. Rigorous quality assurance (QA) requirements are followed, and substantial supporting documentation is generated for a Level II data package (i.e., the data are considered EPA Data Quality Objective (DQO) Level 4 analytical data).

**Table 2-2. Summary of Analytical Parameters For SWMU RW-68,
Radium Dump/Slag Piles and Cratering Area (RW-68)**

Sample Number	TCLP (Eight RCRA Metals Only) EPA Methods 1311 and 6010/7000	TAL Metals EPA Methods SW 6010 and 7471	Gamma Spec EPA Method 901.1
RW68-18-0002	•	•	•
RW68-18-0507		•	•
RW68-18-1012		•	•
RW68-19-0002	•	•	•
RW68-19-0507		•	•
RW68-19-1012		•	•
RW68-20-0002	•	•	•
RW68-20-0507		•	•
RW68-20-1012		•	•
RW68-21-0002	•	•	•
RW68-21-0507		•	•
RW68-21-1012		•	•
RW68-22-0002	•	•	•
RW68-22-0507		•	•
RW68-22-1012		•	•
RW68-23-0002	•	•	•
RW68-23-0507		•	•
RW68-23-1012		•	•
RW68-24-0002	•	•	•
RW68-24-0507		•	•
RW68-24-1012		•	•
RW68-25-0002	•	•	•
RW68-25-0507		•	•
RW68-25-1012		•	•
RW68-26-0002	•	•	•
RW68-26-0507		•	•
RW68-26-1012		•	•
RW68-27-0002	•	•	•
RW68-27-0507		•	•
RW68-27-1012		•	•
RW68-28-0002	•	•	•
RW68-28-0507		•	•
RW68-28-1012		•	•
RW68-29-0002	•	•	•
RW68-29-0507		•	•
RW68-29-1012		•	•
RW68-30-0002	•	•	•
RW68-30-0507		•	•
RW68-30-1012		•	•

Table 2-2. Summary of Analytical Parameters For SWMU RW-68, Radium Dump/Slag Piles and Cratering Area (RW-68) (Continued)

Sample Number	TCLP (Eight RCRA Metals Only) EPA Methods 1311 and 6010/7000	TAL Metals EPA Methods SW 6010 and 7471	Gamma Spec EPA Method 901.1
RW68-31-0002	•	•	•
RW68-31-0507		•	•
RW68-31-1012		•	•
RW68-32-0002	•	•	•
RW68-32-0507		•	•
RW68-32-1012		•	•
RW68-33-0002	•	•	•
RW68-33-0507		•	•
RW68-33-1012		•	•
RW68-34-0002	•	•	•
RW68-34-0507		•	•
RW68-34-1012		•	•
RW68-35-0002	•	•	•
RW68-35-0507		•	•
RW68-35-1012		•	•
RW68-36-0002	•	•	•
RW68-36-0507		•	•
RW68-36-1012		•	•
RW68-37-0002	•	•	•
RW68-37-0507		•	•
RW68-37-1012		•	•
QC Samples^a			
Trip Blank ^b	N/A	N/A	N/A
Equip Rinsate ^c	N/A	7	7
Field Duplicate ^d	6	6	6
MSD Samples ^e	3	3	3

^a Estimated field quality control (QC) samples.

^b Trip Blanks—Samples that originate from analyte-free water taken from the laboratory to the sampling site and returned to the laboratory with the VOC samples. One trip blank per cooler containing VOC samples. Trip blanks are analyzed for VOCs only.

^c Equipment Rinsate Blanks—Collected for each type of nondedicated sampling equipment used and analyzed for the same parameters as the samples they are used to collect. Equipment blanks will be collected and sent to the laboratory on a daily basis. Only equipment blanks collected every other day will be analyzed.

^d Field Duplicates—A single sample split into two portions during a single act of sampling. Assesses the overall precision of the SAP. Collected at a frequency of 10% of the total number of samples for chemical analyses and analyzed for the same parameters as equivalent samples.

^e Matrix Spike Duplicate (MSD) for laboratory quality control, collected 1 in 20 samples (5% frequency).

3. SWMU SS-69, DRUM STORAGE AREA (SS-69)

3.1 Site Background and Environmental Setting

SWMU SS-69, Drum Storage Area, consists of a 50 ft x 50 ft fenced area within DNWS TS 6 in a drainage area adjacent to Arroyo del Coyote. The Drum Storage Area was used by DNWS personnel to store thorium oxide sludge and contaminated soil. The sludge was raked and dispersed into the soil of the training site in order to provide instruction in the detection, assessment, and decontamination of radiation resulting from a nuclear accident. Over time, other unknown sources also utilized the site to dispose of unwanted drums; approximately 90 drums accumulated at the site. Upon discovery, the area contained about 55 empty drums and 35 drums containing solid (cardboard, plastic, dirt, etc.) and liquid material (from 1/4 inch to full). Sixteen drums required laboratory analysis, which determined four drums contained radiological waste, four contained characteristic waste by virtue of TCLP benzene, and eight contained waste diesel fuels with oil, sludge, gasoline, and/or solvent additives (USAF, 1992). A number of these drums had deteriorated and environmental releases had occurred. Soil staining is evident at the site (USAF, 1996).

3.2 Results of Previous Investigations

The only previous investigation conducted at the site was the characterization and disposal of the SS-69 drums and drum contents (USAF, 1992). The characterization determined that four drums contained radiological waste, four contained characteristic waste by virtue of TCLP benzene, and eight contained waste diesel fuels with oil, sludge, gasoline, and/or solvent additives. Site soils have not been investigated, although soil staining is evident.

3.3 Data Gaps

The completion of the SS-69 drum characterization and disposal resulted in the elimination of the sources of radioactive and hazardous waste at the site. Confirmatory sampling, to fully delineate the horizontal and vertical extent of soil contamination, is required to determine if any additional waste removal actions are required at the site.

3.4 Work Plan and Rationale

The proposed scope of the investigation is shown in Figure 3-1 and summarized in Table 3-1. The field program has been designed to fully delineate the horizontal and vertical extent of subsurface soil contamination at the site. Field activities will include the advancement of one background boring and seven investigative borings in the SS-69 area to a depth of 17 ft bls. Of the seven investigative borings, four will be drilled within the fenced drum storage area to assess the degree and vertical extent of contamination. The remaining three investigative borings will be drilled outside of the fenced drum storage area in apparent upslope (one boring) and downslope (two borings) directions to assess the extent of contaminant migration. All borings will be drilled using a direct-push drill rig (Geoprobe). Analytical samples will be collected at the 0- to 2-ft, 5- to 7-ft, 10- to 12-ft, and 15- to 17-ft intervals. Samples will be field-screened using a PID and a beta-gamma meter. Drilling will terminate at 17 ft bls if field-screening results indicate no contamination over two 5-ft intervals. If field-screening indicates the presence of contamination, sampling will continue at 5-ft intervals until field-screening indicates two 5-ft

intervals are free of contamination. All samples will be analyzed for TAL metals (EPA Method 6010), gamma spectrometry (EPA Method 901.1), volatile organic compounds (VOCs) (EPA Method 8260), semivolatile organic compounds (SVOCs) (EPA Method 8270), gasoline range organics (GRO) (EPA Method 8015 Modified), and diesel range organics (DRO) (EPA Method 8015 Modified). The analytical parameters and estimated samples for the SS-69 investigation are summarized in Table 3-2.

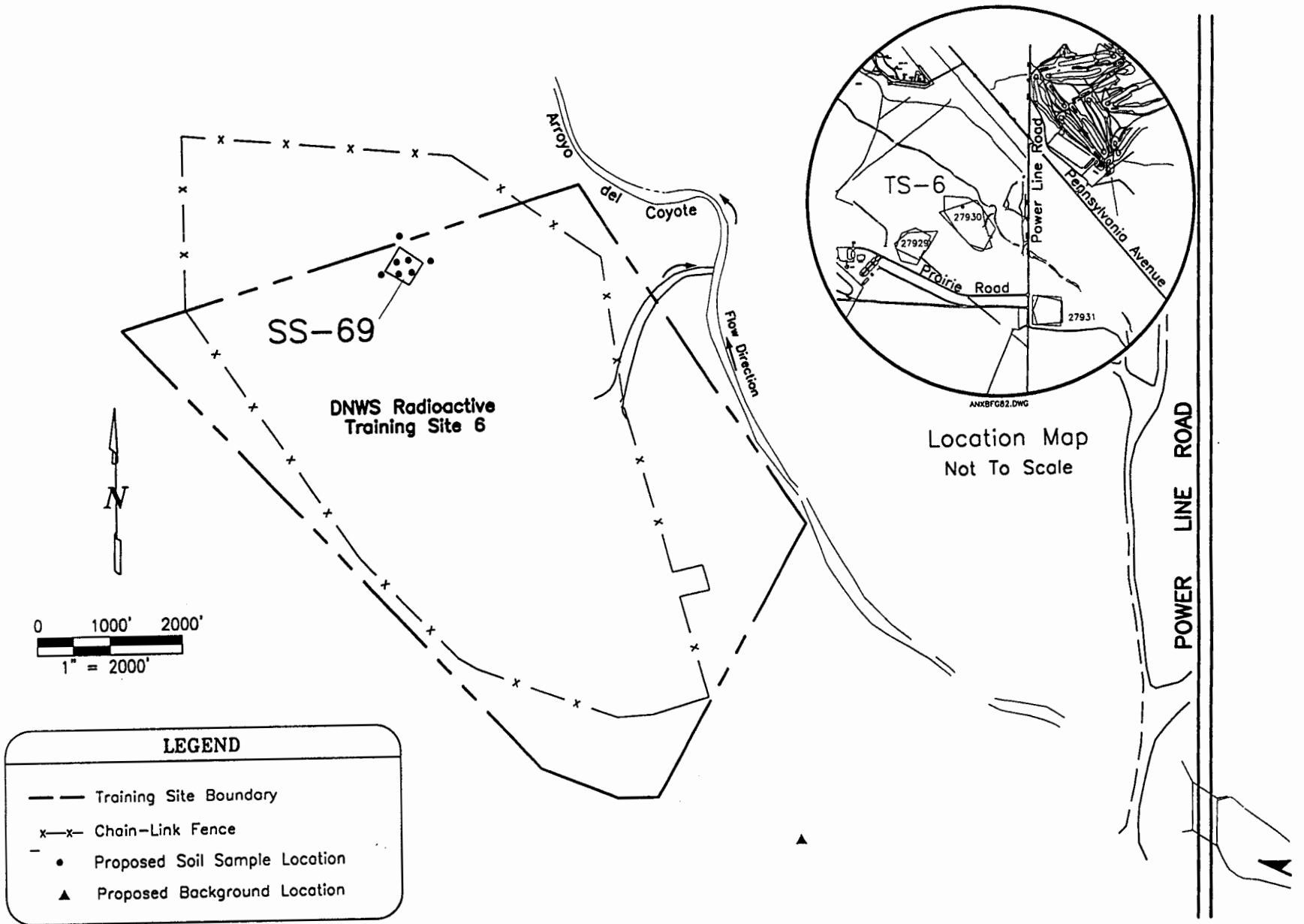


Figure 3-1. Proposed Sampling Locations at SWMU SS-69, Drum Storage Area

Table 3-1. Proposed Sampling for SWMU SS-69, Drum Storage Area (SS-69)

Data Needs	Investigative Technique	Number of Samples	Analyses ^a	Selected Analytical Option ^b
Fully delineate horizontal and vertical extent of contaminants in fenced area of site	Drill 4 boreholes and sample at 0- to 2-ft, 5- to 7-ft, 10- to 12-ft, and 15- to 17-ft intervals	16 (four samples per boring)	VOCs SVOCs DRO GRO TAL Metals Gamma Spec	Level II Level II Level II Level II Level II Level II
Fully delineate horizontal and vertical extent of contaminants downslope of site	Drill 2 boreholes and sample at 0- to 2-ft, 5- to 7-ft, 10- to 12-ft, and 15- to 17-ft intervals	8 (four samples per boring)	VOCs SVOCs DRO GRO TAL Metals Gamma Spec	Level II Level II Level II Level II Level II Level II
Fully delineate horizontal and vertical extent of contaminants upslope of site	Drill 1 borehole and sample at 0- to 2-ft, 5- to 7-ft, 10- to 12-ft, and 15- to 17-ft intervals	4 (four samples per boring)	VOCs SVOCs DRO GRO TAL Metals Gamma Spec	Level II Level II Level II Level II Level II Level II
Determine background concentrations for site soils	Drill 1 borehole and sample at 0- to 2-ft, 5- to 7-ft, 10- to 12-ft, and 15- to 17-ft intervals	4 (four samples per boring)	VOCs SVOCs DRO GRO TAL Metals Gamma Spec	Level II Level II Level II Level II Level II Level II

^a VOCs (EPA Method SW 8260), SVOCs (EPA Method SW 8270), TAL metals (EPA Method SW 6010), GRO (EPA Method 8015 Mod.), DRO (EPA Method 8015 Mod., Gamma Spec) (EPA Method 901.1).

^b The Level II designation in the "Selected Analytical Option" column refers to the type of analytical data package requested of the analytical laboratory. Level II data packages are defined in the AFCEE contract. Within the specifications of the AFCEE contract and the limitations of the analytical methodology, the Level II report is equivalent to an EPA report. Rigorous QA requirements are followed, and substantial supporting documentation is generated for a Level II data package (i.e., the data are considered EPA DQC Level 4 analytical data).

**Table 3-2. Summary of Analytical Parameters for SWMU SS-69,
Drum Storage Area (SS-69)**

Sample Number	VOCs EPA Method SW 8260	SVOCs EPA Method SW 8270	TAL Metals EPA Method SW 6010	GRO EPA Method 8015 Mod.	DRO EPA Method 8015 Mod.	Gamma Spec EPA Method 901.1
SS69-01-0002	•	•	•	•	•	•
SS69-01-0507	•	•	•	•	•	•
SS69-01-1012	•	•	•	•	•	•
SS69-01-1517	•	•	•	•	•	•
SS69-02-0002	•	•	•	•	•	•
SS69-02-0507	•	•	•	•	•	•
SS69-02-1012	•	•	•	•	•	•
SS69-02-1517	•	•	•	•	•	•
SS69-03-0002	•	•	•	•	•	•
SS69-03-0507	•	•	•	•	•	•
SS69-03-1012	•	•	•	•	•	•
SS69-03-1517	•	•	•	•	•	•
SS69-04-0002	•	•	•	•	•	•
SS69-04-0507	•	•	•	•	•	•
SS69-04-1012	•	•	•	•	•	•
SS69-04-1517	•	•	•	•	•	•
SS69-05-0002	•	•	•	•	•	•
SS69-05-0507	•	•	•	•	•	•
SS69-05-1012	•	•	•	•	•	•
SS69-05-1517	•	•	•	•	•	•
SS69-06-0002	•	•	•	•	•	•
SS69-06-0507	•	•	•	•	•	•
SS69-06-1012	•	•	•	•	•	•
SS69-06-1517	•	•	•	•	•	•
SS69-07-0002	•	•	•	•	•	•
SS69-07-0507	•	•	•	•	•	•

**Table 3-2. Summary of Analytical Parameters for SWMU SS-69,
Drum Storage Area (SS-69) (Continued)**

Sample Number	VOCs EPA Method SW 8260	SVOCs EPA Method SW 8270	TAL Metals EPA Method SW 6010	GRO EPA Method 8015 Mod.	DRO EPA Method 8015 Mod.	Gamma Spec EPA Method 901.1
SS69-07-1012	•	•	•	•	•	•
SS69-07-1517	•	•	•	•	•	•
SS69-08-0002	•	•	•	•	•	•
SS69-08-0507	•	•	•	•	•	•
SS69-08-1012	•	•	•	•	•	•
SS69-08-1517	•	•	•	•	•	•
QC Samples^a						
Trip Blank ^b	4	0	0	0	0	0
Equip Rinsate ^c	4	4	4	4	4	4
Field Duplicate ^d	4	4	4	4	4	4
MSD Samples ^e	2	2	2	2	2	2

^a Estimated field QC samples.

^b Trip Blanks—Samples that originate from analyte-free water taken from the laboratory to the sampling site and returned to the laboratory with the VOC samples. One trip blank per cooler containing VOC samples. Trip blanks are analyzed for VOCs only.

^c Equipment Rinsate Blanks—Collected for each type of nondedicated sampling equipment used and analyzed for the same parameters as the samples they are used to collect. Equipment blanks will be collected and sent to the laboratory on a daily basis. Only equipment blanks collected every other day will be analyzed.

^d Field Duplicates—A single sample split into two portions during a single act of sampling. Assesses the overall precision of the sampling and analysis program. Collected at a frequency of 10% of the total number of samples for chemical analyses and analyzed for the same parameters as equivalent samples.

^e MSD for laboratory quality control, collected 1 in 20 samples (5% frequency).

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