10. SWMU 37 – SLAG PILES AND BOMB FRAGMENTS

This section presents the results of the Phase II Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) conducted at solid waste management unit (SWMU) 37 – Slag Piles and Bomb Fragments. The site geologic and hydrologic features are presented and are followed by the Phase I and II investigation methodology, results, and nature and extent of identified contamination. The results of the assessment of human health and ecological risks associated with the chemicals of potential concern (COPCs) also are presented.

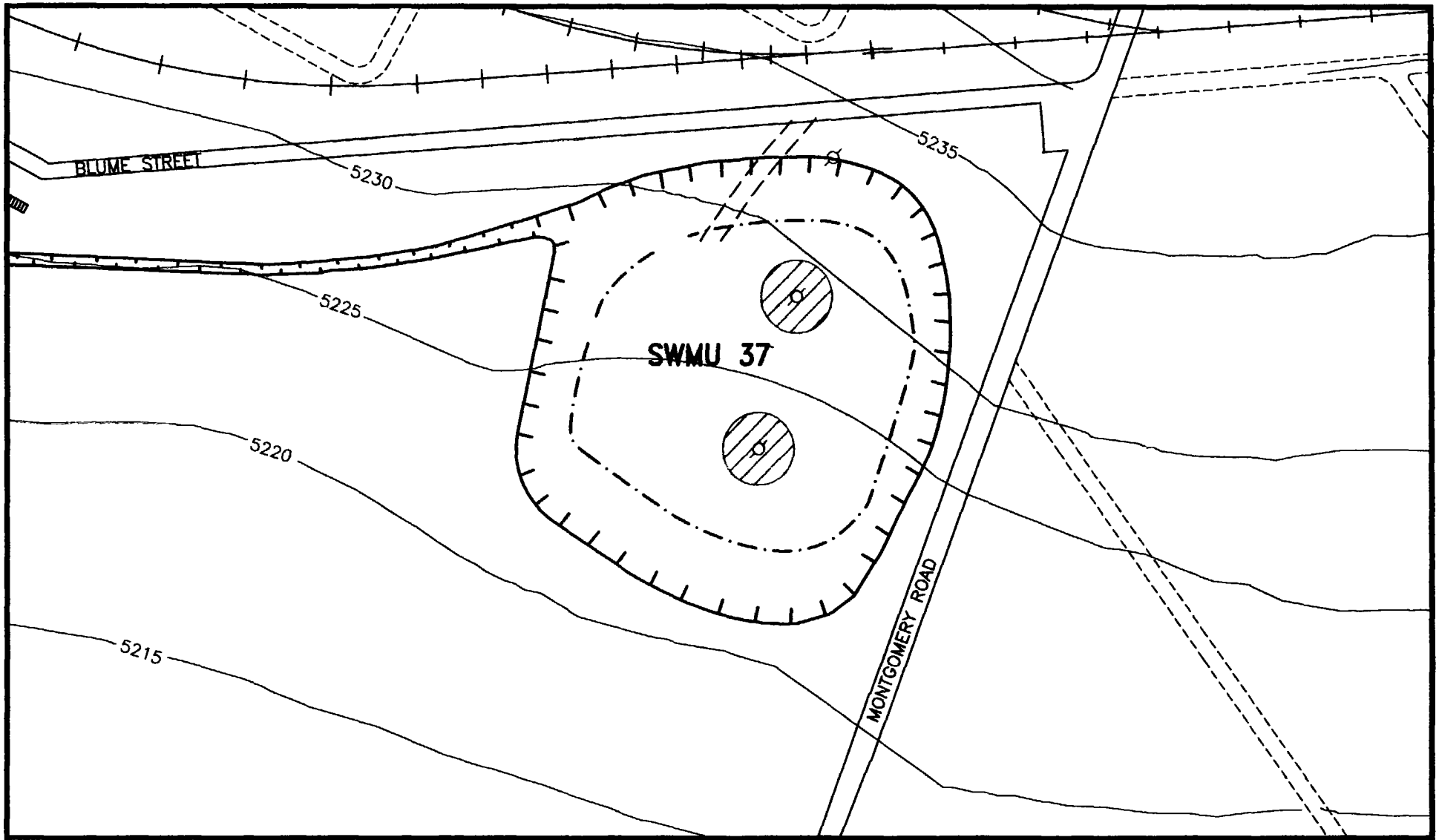
10.1 SWMU 37 DESCRIPTION/CURRENT SITE CONDITIONS

SWMU 37 – Slag Piles and Bomb Fragments occupies approximately 14 acres in a 20- to 30-foot-deep gravel pit located directly southwest of the intersection of Montgomery Road and Blume Street in the northeastern quadrant of Deseret Chemical Depot (DCD). The history of SWMU 37 is unknown; however, slag and/or ash piles approximately 5 feet wide, 10 feet long, and 3 feet high were present on the floor of the gravel pit prior to the Phase II field activities. It is believed that the slag and/or ash material deposited in this area is the byproduct of a deactivation furnace (EBASCO 1993a). These piles were removed from the SWMU as part of the Phase II activities. Figure 10-1 shows the location of SWMU 37.

Rusted bomb fragments and pieces of metal of unknown origin are scattered on the northwestern slope of the pit in an area of stressed vegetation. Phase II investigation activities revealed a disposal trench of thermate bombs that had been detonated in place. The origin and history of these bombs are unknown. According to an Army report (U.S. Army 1977), thermate bomb housings are made of magnesium and may contain explosives. Metal debris was encountered in most of the Phase II test pit excavations on the northwestern slope of the pit at depths ranging from the surface in all borings to 9 feet below land surface (BLS). In addition, a white ash layer ranging from 1 to 5 feet thick was identified in the excavation pits, indicating that the thermate bombs had been destroyed and burned in place. In some instances, ash and burnt, discolored, charred soil was present adjacent to the open end of the bomb casings, further indicating that destruction had occurred in place. Appendix A presents a site reconnaissance report summarizing the results of records searches, personnel interviews, and visual inspections of the site. The site reconnaissance report also summarizes the *Study for Tooele Army Depot South Area, Thermate Bomb Residue Cleanup* (U.S. Army 1977), which documents thermate bomb characteristics that would be applicable to the findings at SWMU 37.

10.2 SWMU 37 SPECIFIC GEOLOGY AND HYDROGEOLOGY

SWMU 37 is located on a gently southwestern sloping topographic surface that is underlain by unconsolidated Quaternary alluvial deposits. The original surface topography of the area, prior to the excavation of the gravel pit, consisted of a very gentle south-west sloping surface underlain by alluvial gravel deposits. It is not known when the pit was excavated. During the Phase IIB investigation in January 2000, soil borings were drilled in the gravel pit area to a maximum depth of 15 feet BLS. Surface soils identified in the gravel pit consist of light brownish-gray, silty gravel with a trace of fine-grained sand. The unconsolidated soils collected below the surface to 15 feet BLS are characterized by dry, cobbly, gravelly, sandy clay. The cobbles are rounded to subrounded, the gravel and sand are rounded to subangular, and the clay has little to no plasticity.



LEGEND:

- RAILROAD
- ABANDONED ROADS
- ELEVATION CONTOUR
- TELEPHONE POLE
- SWMU 37/GRAVEL PIT BOUNDARY
- FLOOR OF GRAVEL PIT
- GRAVEL MOUNDS SURROUNDING TELEPHONE POLES

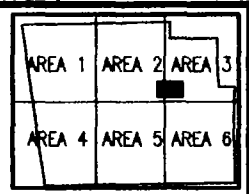
NOTES:

1.) BASE MAP INFO. WAS SCANNED AND IS ACCURATE TO 1:1000.

N

0 100 200

SCALE: 1" = 200'



KEY MAP
NOT TO SCALE

Deseret Chemical Depot
Tooele, Utah

SWMU 37 - SLAG PILES AND BOMB FRAGMENTS

Figure:	Project:	File:	Date:
10-1	01-0827-03-6523-042	7109/RFI37-SP	NOV. 2000

The static water level in this area is estimated to be 115 feet BLS at SWMU 37 based on an installation-wide potentiometric contour prepared in 1999 (Kleinfelder 2000b). Surficial runoff associated with precipitation activities flows down the walls of the gravel pit and is captured in low-lying areas at the base of the pit wall. During periods of significant precipitation, standing water accumulates in the depressions throughout the gravel pit area.

10.3 SWMU 37 PREVIOUS INVESTIGATION RESULTS

SWMU 37 was identified following the completion of the 1990 Phase I activities by EBASCO (1993a). Phase I activities at SWMU 37 were conducted in 1992 and included the drilling and sampling of five soil borings in and around the slag piles. Soil samples were collected at the surface, 1 foot BLS, and 3 feet BLS. Samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, and explosives. Table 10-1 summarizes the previous investigation activities and results.

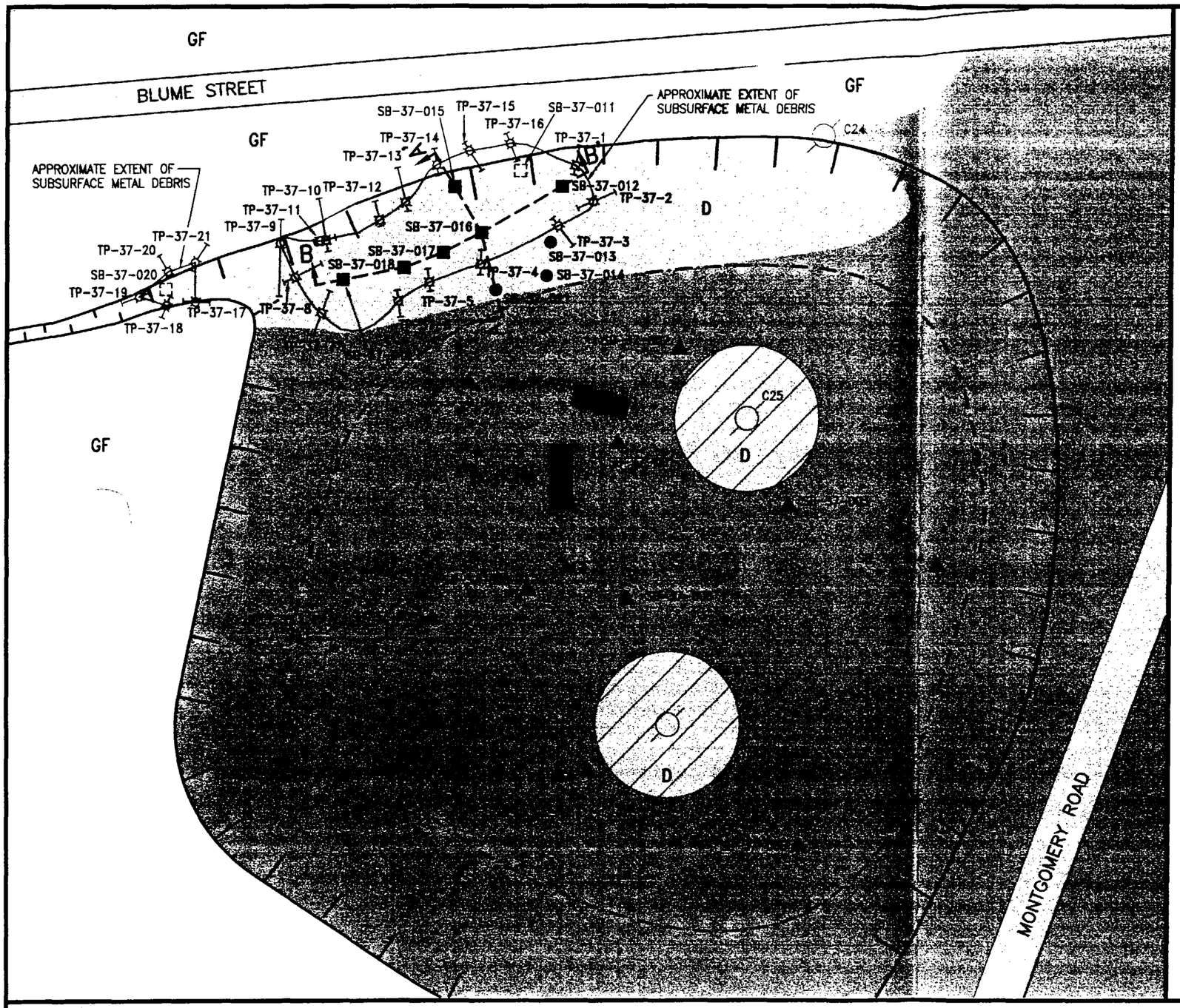
Table 10-1. SWMU 37 Previous Investigation Activities and Results
Deseret Chemical Depot, Tooele, Utah

Phase	Previous Activity	Result
Phase I (1992)	Drilled five soil borings and collected samples at surface (0 to 0.5 feet BLS), 1 foot BLS, and 3 feet BLS; analyzed samples for VOCs, SVOCs, metals, and explosives.	COPCs: SVOCs and metals.
	Conducted UXO survey.	The survey did not identify any signs of UXO.

During the Phase I sampling, di-n-butyl phthalate (DNBP) was the only SVOC detected in the SWMU 37 samples. Manganese was the only COPC metal detected at concentrations above upper tolerance limit (UTL) background concentrations. VOCs and explosives were not detected in any sample collected during the initial Phase I sampling activities (EBASCO 1993a).

10.4 SWMU 37 PHASE II RFI FIELD INVESTIGATION APPROACH

Phase II field activities at SWMU 37 were conducted in 1994-95 (Phase II), 1998-99 (Phase IIA), and 1999-2000 (Phase IIB). Figure 10-2 shows all Phase II sample locations. The Phase II (1994-95) field activities at SWMU 37 were conducted to confirm and define the areal and vertical extent of contamination identified during the Phase I sampling activities. Activities to accomplish these objectives included conducting an explosive risk evaluation, excavating 2 test pits in the existing slag piles, collecting and analyzing soil samples from the test pits, drilling and sampling 10 shallow soil borings across the site, and containerizing and sampling visible slag material. Soil samples were analyzed for SVOCs, polychlorinated biphenyls (PCBs), metals, cyanide, and explosives. The slag samples were analyzed for toxicity characteristics leaching procedure (TCLP) metals, TCLP SVOCs, cyanide, PCBs, and explosives. Table 10-2 describes the planned versus actual activities for all of the Phase II RFI field investigation.



EXCAVATION SHOWING ASH LAYER

EXCAVATION SHOWING SUBSURFACE METAL DEBRIS

EXCAVATION SHOWING SUBSURFACE METAL DEBRIS

EXCAVATION SHOWING SUBSURFACE METAL DEBRIS

LEGEND:

- TELEPHONE POLE
- SWMU 37/GRAVEL PIT BOUNDARY
- FLOOR OF GRAVEL PIT
- GRAVEL MOUNDS SURROUNDING TELEPHONE POLES
- TEST PIT WITHOUT SUBSURFACE METAL DEBRIS (SAMPLED 0–5 FT. BLS)
- TEST PIT WITH SUBSURFACE METAL DEBRIS (SAMPLED 0–15 FT. BLS)
- TEST PIT WITH SUBSURFACE METAL DEBRIS (SAMPLED 0–5 FT. BLS)
- TEST PIT FOR DELINEATION OF SUBSURFACE METAL DEBRIS (NO SAMPLE COLLECTED)
- CROSS SECTION LOCATION
- TEST PIT SAMPLE LOCATION
- SOIL SAMPLING LOCATION

VEGETATION TYPES:

- D ... DISTURBED AREAS–NO VEGETATION
- GF ..... BUNCHGRASSES/ANNUAL FORBS
- AGF ..... ANNUAL GRASSES AND FORBS

NOTES:

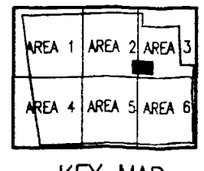
1.) BASE MAP INFO. WAS SCANNED AND IS ACCURATE TO 1:1000.

2.) APPROXIMATE VOLUME OF METAL DEBRIS = 3,090 YD^3 (TOTAL FOR BOTH AREAS).

N

0 40 80

SCALE: 1" = 80'



KEY MAP
NOT TO SCALE

Deseret Chemical Depot
Tooele, Utah

SWMU 37 – PHASE II SAMPLE LOCATIONS

Figure:	Project:	File:	Date:
10–2	01–0827–03–6523–042	7109/RF137–SL	NOV. 2000

Table 10-2. SWMU 37 Phase II Planned Versus Actual Field Activities
Deseret Chemical Depot, Tooele, Utah

Phase	Planned Activities	Rationale for Planned Activities	Deviations from Planned Activities	Rationale for Deviations
II (1994-95)	Conduct UXO survey.	Fulfill RCRA permit requirement; evaluate potential presence of UXO.	None; activities implemented as planned.	N/A
	Excavate two test pits to native soils at slag pile locations; collect four samples from each test pit (two from the slag material and two from native material at approximately 8 feet BLS); analyze native material for SVOCs, PCBs, metals, cyanide, and explosives.	Determine if contaminants associated with slag had migrated into the subsurface soils.	Test pits were excavated to a depth of only 1.5 feet below the surface of the slag piles.	Native soil was encountered at a depth shallower than anticipated.
	Containerize and analyze slag for TCLP metals, TCLP SVOCs, cyanide, PCBs, and explosives; remove slag from site.	Remove nonhazardous slag from site.	Disposed of slag in onsite landfill.	Slag material TCLP results indicated that it was a RCRA nonhazardous waste.
	Drill 10 soil borings and collect samples at surface (0 to 0.5 feet BLS) and 3 feet BLS; analyze for SVOCs, PCBs, metals, cyanide, and explosives.	Determine if contaminants are present as a result of past site practices.	None; activities implemented as planned.	N/A

Table 10-2. SWMU 37 Phase II Planned Versus Actual Field Activities Deseret Chemical Depot, Tooele, Utah (Continued)

Phase	Planned Activities	Rationale for Planned Activities	Deviations from Planned Activities	Rationale for Deviations
IIA (1998-99)	Drill and sample 10 borings in the area of stressed vegetation and metal debris disposal; collect soil samples from 0 to 0.5, 1, and 5 feet BLS; analyze all samples for metals and explosives.	Action resulting from May 1998 field reconnaissance finding; identified stressed vegetation areas that could be the result of thermate bomb fragment disposal. According to an Army report (U.S. Army 1977), thermate bomb fragments may contain explosives or magnesium.	Ten test pits were excavated using a backhoe instead of drilling the boring with a hand auger.	Subsurface metal debris was encountered when using hand auger. The hand auger could not reach the desired sample depths. A backhoe was used to excavate to the desired sample depth; a hand auger was used to collect the sample.
			Samples collected from 0 to 0.5, 1, and 5 to 6 feet BLS.	Samples were collected at 5 feet BLS or below the extent of metal fragments.
			An additional sample site was excavated.	Added location SB-37-021 to determine the horizontal extent of the metal debris.
	Identify the location and delineation of vegetation within 500 feet of the SWMU.	Responding to UDEQ comments to identify habitat types surrounding SWMU under investigation.	None; activities implemented as planned.	N/A
IB (1999-2000)	• Collect samples from 10 and 15 feet BLS at six previous test pit excavation locations (SB-37-012, SB-37-015, SB-37-016, SB-37-017, SB-37-018, and SB-37-019). • Analyze all samples for metals. • Excavate 12 exploratory test pits to delineate the extent of trench (TP-37-001 through TP-37-012).	• Determine vertical extent of magnesium at sample locations where the deepest samples exceed the current background UTL for magnesium (16,260 µg/g). • Planned sampling activities are based on comments provided by UDEQ. • Identify the vertical and horizontal extent of thermate bomb disposal trench.	• SB-37-019 sample not collected from 15 feet BLS. • Excavated 21 exploratory test pits to delineate the extent of trench.	• Could not collect sample from SB-37-019 at 15 feet BLS due to excessive metal debris. • Additional exploratory test pits were added to better determine the horizontal extent of metal debris.

The objective of the Phase IIA (1998-99) field investigation conducted on the northern slope of the SWMU 37 pit was to identify the source of the stressed vegetation and to characterize identified contamination. Eleven test pits were excavated and sampled in areas of stressed vegetation and visible surface metal debris for metals and explosives. Table 10-3 presents the sampling observations and findings during the Phase IIA RFI field investigation.

The objective of the Phase IIB (1999-2000) field investigation activities conducted on the northern slope of the SWMU 37 pit area was to identify the horizontal and vertical extent of bomb fragments/metal debris and the vertical extent of magnesium contamination identified during Phase IIA. Magnesium was detected during Phase IIA at concentrations exceeding the associated Phase IIA UTL (16,260 µg/g) in the deepest Phase IIA sample (i.e., 5 feet BLS) in borings SB-37-012, SB-37-015, SB-37-016, SB-37-017, SB-37-018, and SB-37-019. During the Phase IIB activities, these sample locations were reoccupied and samples were collected at 10 and 15 feet BLS and analyzed for metals to help define the vertical extent of magnesium. Every sample location and depth was cleared for unexploded ordnance (UXO) prior to initiation of sampling; a backhoe was used to reach the desired sample depth. Samples were collected from the bottom of the excavation using decontaminated stainless steel hand augers.

Metal debris was encountered in all of the Phase IIB excavations at depths ranging from the surface in all borings to 9 feet BLS at SB-37-016. In addition, a white ash layer ranging from 1 to 5 feet thick was identified in the excavation pits, indicating that the thermate bombs had been destroyed and burned in place. In some instances, ash and burnt, discolored, charred soil was present adjacent to the open end of bomb casings, further indicating that destruction had occurred in place. This ash layer was identified in all excavation pits containing metal debris and bomb fragments except for boring SB-37-018. In boring SB-37-019, at 1 to 3 feet BLS, an unknown white liquid was unearthed during excavation activities. This liquid, which was intermixed with the ash material, solidified within 5 minutes of exposure to ambient conditions. Appendix N presents photographs of SWMU 37 sampling activities. Table 10-4 summarizes the field observations and findings during the Phase IIB activities and indicates the depth at which metal debris was encountered. Figure 10-2 shows representative photographs of Phase IIB sampling observations. Figures 10-3 and 10-4 present cross sections of the excavated area.

In addition to the collection of subsurface samples for chemical analysis, a series of exploratory test pits was excavated to delineate the horizontal extent of the metal debris. Twenty-one exploratory test pits (TP-37-01 through TP-37-21) were excavated to a minimum of 2 feet BLS and visually inspected for the presence of metal debris. (Previous excavation activities had shown that metal debris, if present, would be identified from 0 to 1 foot BLS.) Locations of the test pits were selected in areas where there was a transition from stressed to nonstressed vegetation and a transition from the presence to the absence of metal debris on the ground surface. Figure 10-2 presents the location of the exploratory test pits and their approximate length. The exploratory test pits indicated that two separate areas of underground metal debris and bomb fragments exists. The eastern disposal area covers approximately 12,800 square feet with an approximate subsurface volume of metal debris of 3,000 cubic yards. The western disposal area, in which boring SB-37-20 is located, covers approximately 700 square feet with an approximate subsurface volume of metal debris of 90 cubic yards.

Table 10-3. SWMU 37 Phase IIA Sampling Observations and Findings Deseret Chemical Depot, Tooele, Utah

Sample Location	Sample Interval Description			Extent of Metal Debris (BLS)
	0-0.5 feet (SAIC 01)	1-1.5 feet (SAIC 02)	5-5.5 feet (SAIC 03)	
SB-37-011	Two inches of small gravel above sandy clay. Area is nonvegetated with rusty metal debris strewn on surface.	Gravelly sandy soil amidst burnt and rusted metal fragments.	Light brown sandy, gravelly soil.	3.5 to 5 feet
SB-37-012	Sandy clay beneath 2 inches of small gravel and cobbles. Area was nonvegetated with rusted missile bodies (4 by 14 inches) around sample location.	Slag, rusted metal, and missile bodies mixed into rocky soil.	Gravelly sandy soil with white power intermixed.	3.5 to 5 feet
SB-37-013	Top 3 inches of ground surface was rocky gravel underlain with sandy clay. Area was nonvegetated and contained rusted missile body fragments.	Rocky, gravelly, sandy clay.	Sandy gravelly clay.	Surface only
SB-37-014	Gravelly sandy clay. Large scraps of rusted metal surrounded location, a few were missile bodies. Area was vegetated with sage, forbes, and grasses.	Rocky, pebbly, sandy clay.	Sandy gravelly clay.	Surface only
SB-37-015	Soil is sandy clay with gravel. Rusted missile bodies and scrap metal surround sample location. Grasses and moss covered area.	Gravelly sandy soil.	Sample collected from 6.5 to 7 feet BLS due to metal debris encountered to 6 feet BLS.	4 to 6 feet
SB-37-016	Soil was gravelly sandy clay. Location was slightly covered with moss and grasses and surrounded by rusted metal scraps and missile bodies.	Rocky, pebbly, sandy clay.	Gravelly soil with rusted metal fragments.	4 to 6 feet

Notes: Sample locations SB-37-011 through SB-37-20 were located from an area of stressed vegetation with metal debris present on land surface.

SAIC 0# represents sample identification for laboratory analysis.

Table 10-3. SWMU 37 Phase IIA Sampling Observations and Findings Deseret Chemical Depot, Tooele, Utah (Continued)

Sample Location	Sample Interval Description			Extent of Metal Debris (BLS)
	0-0.5 feet (SAIC 01)	1-1.5 feet (SAIC 02)	5-5.5 feet (SAIC 03)	
SB-37-017	Sample was collected in sandy clay beneath 3 inches of gravel and rocks. Area was nonvegetated and surrounded by rusted missile bodies.	Large pieces of rusty metal, slag, and white powder mixed in with gravelly soils.	Gravelly sandy soil discolored with white talc-like powder and slag debris.	1.5 to 5 feet
SB-37-018	Sample was sandy clay collected beneath 2 inches of gravel. Area was nonvegetated and surrounded by rusted missile bodies.	Gravelly sandy soil with small rocks.	Gravelly sandy soil amidst large scrap metal (pipes, railroad track, and rusty scrap metal) that sloughed into hole during excavation.	1.5 to 5 feet
SB-37-019	Sample consisted of sandy clay with gravel. A small amount of gray soil was encountered during sample collection. Rusted metal and missile fragments surrounded area.	Small slag particles (<0.5 inches in diameter) intermixed with gray/white dust, gravelly sandy soil with small rocks.	Very moist, reddish brown clay with few pebbles.	2.0 to 5.5 feet
SB-37-020	Sample was sandy clay with gravel. White crystalline substance found in sample matrix. Sample area was nonvegetated and surrounded by rusted missile bodies embedded into the soil.	Slag metal debris and gravel mixed in with sandy soil, large pieces of rusty metal and missile bodies in area.	Gravelly sandy soil.	0 to 4.5 feet
SB-37-021	Gravelly sandy soil from nonvegetated area.	Sandy gravelly clay with rusty metal fragments.	Cobbly sandy soil.	2 to 5 feet

Notes: Sample locations SB-37-011 through SB-37-20 were located from an area of stressed vegetation with metal debris present on land surface.

SAIC 0# represents sample identification for laboratory analysis.

Table 10-4. SWMU 37 Sampling Observations and Findings
Deseret Chemical Depot, Tooele, Utah

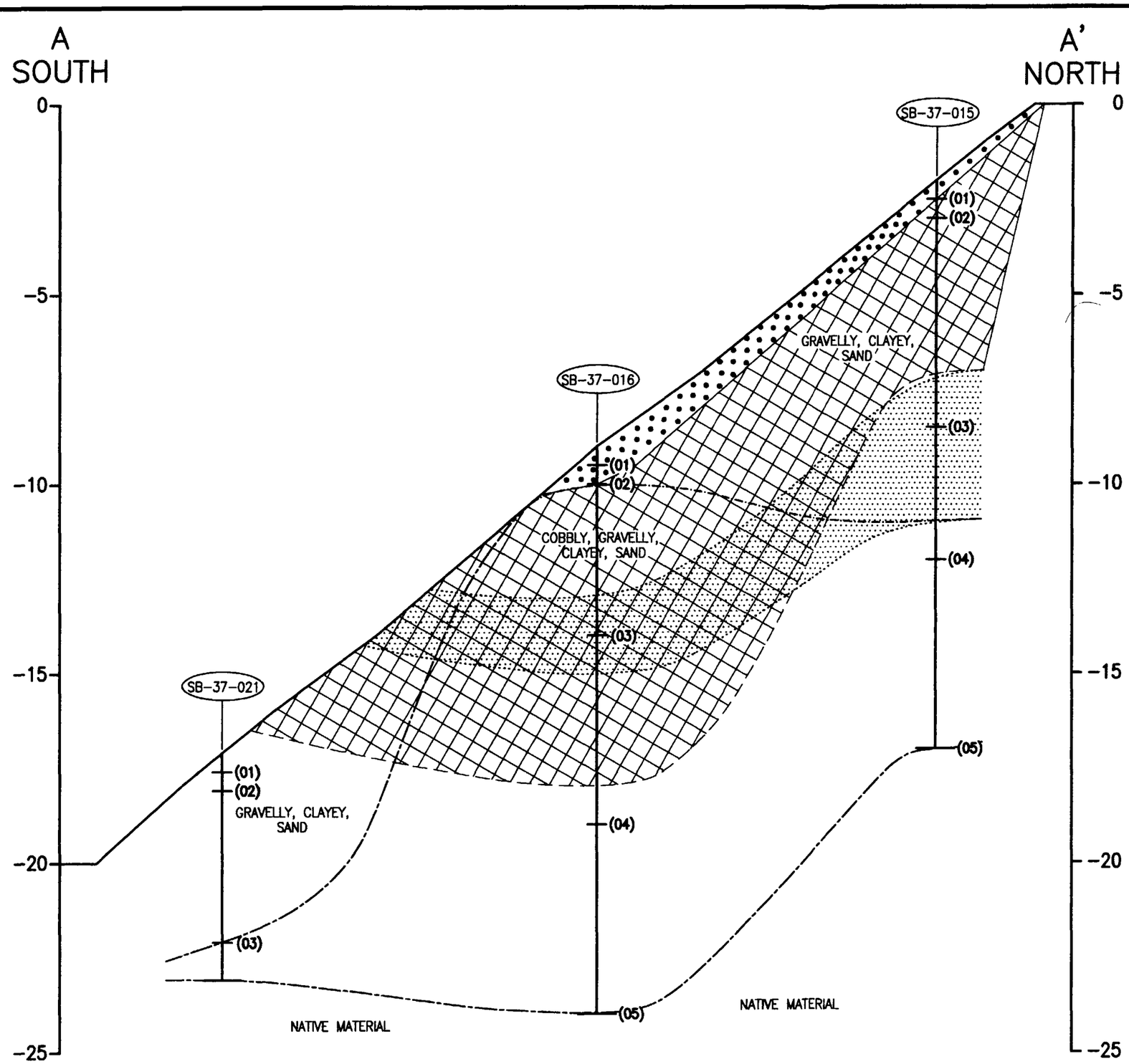
Sample Location	Sample Interval Description		Extent of Metal Debris (BLS)
	10 to 10.5 feet BLS (SAIC 04)	15 to 15.5 feet BLS (SAIC 05)	
SB-37-012	Dry, cobbly, gravelly, clayey sand. Cobbles rounded to 1 foot diameter, gravel and sand rounded to subrounded, clay with little to no plasticity (7 YR 4/2 dark brown).	Dry, cobbly, gravelly, clayey sand. Cobbles rounded to 1 foot diameter, gravel and sand rounded to subrounded, clay with little to no plasticity.	0 to 6 feet
SB-37-015	Dry, cobbly, gravelly, clayey sand with white powder-like particulate intermixed. Cobbles rounded to 1 foot diameter, gravel and sand rounded to subrounded, clay with little to no plasticity (5YR 3/2 dark reddish brown). Duplicate sample collected.	Dry cobbly, gravelly clayey sand. Cobbles rounded, gravel and sand rounded to subrounded, clay with little plasticity (5YR 4/4 reddish brown).	0 to 5.5 feet
SB-37-016	Dry, rounded to subangular gravelly, clayey, rounded to subrounded sand. Clay with little to no plasticity (10YR 4/2 dark grayish brown). MS/MSD collected.	Dry, rounded to subangular gravelly, clayey, rounded to subrounded sand. Clay with little to no plasticity (10YR 3/2 very dark grayish brown).	0 to 9 feet
SB-37-017	Dry, cobbly, gravelly, sandy clay. Cobbles rounded to subrounded, gravel and sand rounded to subangular, clay with little to no plasticity (10YR 4/2 dark grayish brown).	Dry, cobbly, gravelly, sandy clay. Cobbles rounded to subrounded, gravel and sand rounded to subangular, clay with little to no plasticity (10YR 4/2 dark grayish brown).	0 to 7 feet
SB-37-018	Dry, cobbly, gravelly, sandy clay. Cobbles rounded to subrounded, gravel and sand rounded to subangular, clay with little to no plasticity (10YR 5/3 brown).	Dry, cobbly, gravelly, sandy clay. Cobbles rounded to subrounded, gravel and sand rounded to subangular, clay with little to no plasticity (2Y 4/2 dark grayish brown).	0 to 5 feet
SB-37-019	Dry, cobbly, gravelly, sandy clay. Cobbles rounded to subrounded, gravel and sand rounded to subangular, clay with little to no plasticity (10YR 4/2 very dark grayish brown).	Sample interval could not be reached by backhoe, refusal encountered at 11 feet BLS (aggregate layer of fused cobbles, gravel, and sand [yellowish white]).	0 to 8 feet

Extent of metal debris for locations not sampled during Phase IIB:

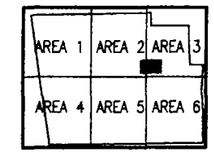
- SB-37-011: 0 to 3 feet BLS
- SB-37-020: 0 to 3.5 feet BLS

YR – Munsell Color Chart Designation

SAIC 0# represents sample identification for laboratory analysis.



CROSS SECTION A – A'



KEY MAP
NOT TO SCALE

LEGEND:

- ..... ASH LAYER WITH METAL SLAG
- ..... AREA WITH LIMITED METAL AND THERMATE BOMB DEBRIS
- ..... AREA WITH EXTENSIVE METAL AND THERMATE BOMB DEBRIS
- SB-37-015 ..... TEST PIT IDENTIFICATION
- (01)..... SAIC01 FIELD SAMPLE NUMBER
- ..... BOTTOM OF TEST PIT

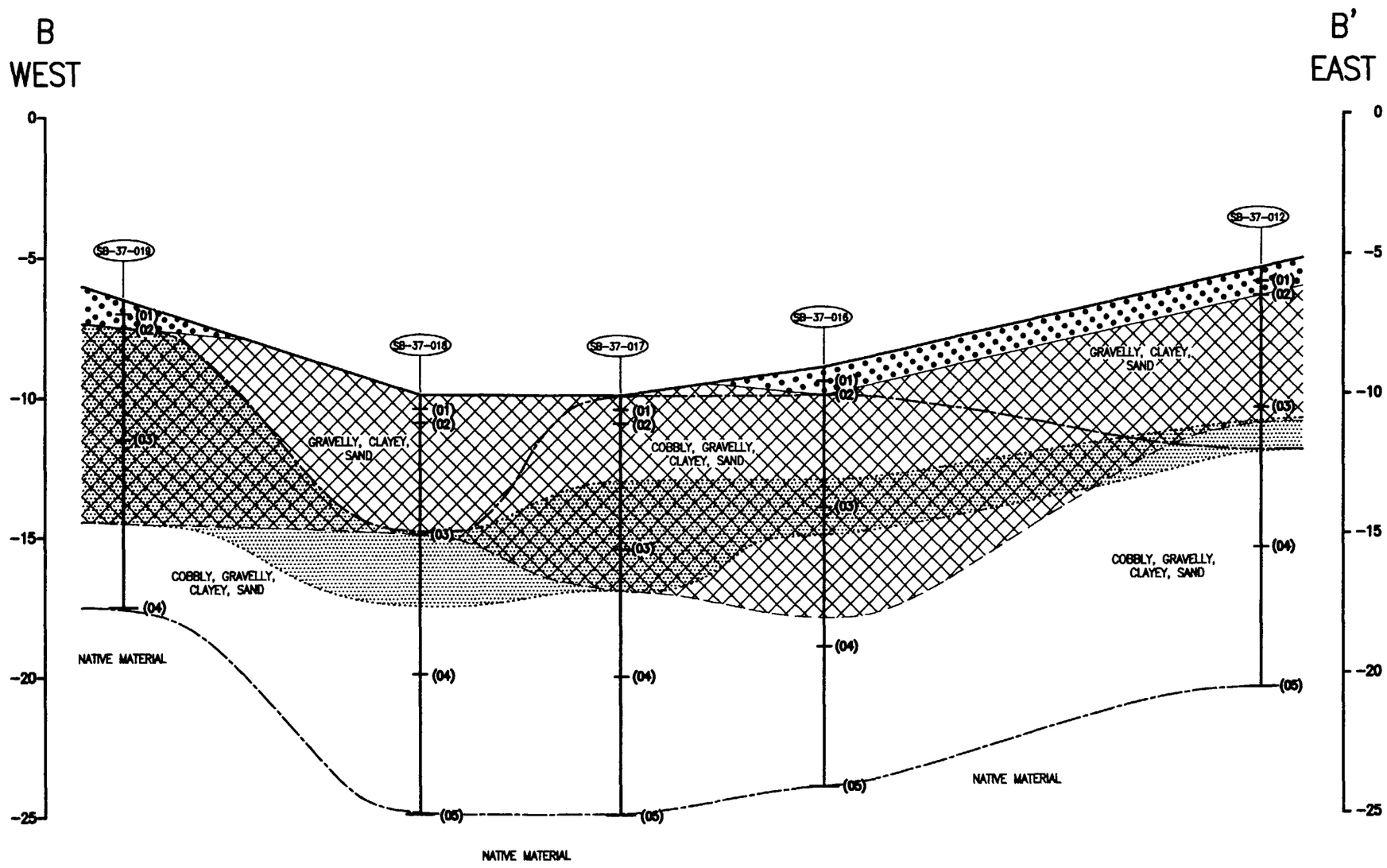
0 3
VERTICAL SCALE: 1" = 3'

0 6 12
HORIZONTAL SCALE: 1" = 12'

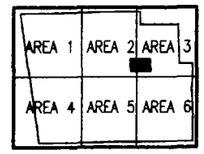
Deseret Chemical Depot
Tooele, Utah

SWMU 37 – PHASE IIB FIELD OBSERVATIONS, CROSS SECTION A – A'

Figure:	Project:	File:	Date:
10-3	01-0827-03-6523-042	7109/RFI37CSA	NOV. 2000



CROSS SECTION B – B'



KEY MAP
NOT TO SCALE

LEGEND:

- ASH LAYER WITH METAL SLAG
- AREA WITH LIMITED METAL AND THERMATE BOMB DEBRIS
- AREA WITH EXTENSIVE METAL AND THERMATE BOMB DEBRIS
- SB-37-017 ..... TEST PIT IDENTIFICATION
- (01)..... SAIC01 FIELD SAMPLE NUMBER
- ..... BOTTOM OF TEST PIT

0 2 5
VERTICAL SCALE: 1" = 4.5'

0 9 18
HORIZONTAL SCALE: 1" = 18'

Deseret Chemical Depot
Tooele, Utah

SWMU 37 – PHASE IIB FIELD OBSERVATIONS, CROSS SECTION B – B'

Figure:	Project:	File:	Date:
10-4	01-0827-03-6523-042	7109/RFI37CSB	NOV. 2000

10.5 SWMU 37 PHASE II RFI RESULTS

The following sections summarize the Phase II investigation results for the activities conducted at SWMU 37. The explosive risk, soil sampling results, and nature and extent of identified contamination.

10.5.1 SWMU 37 Risk Evaluation

Prior to any intrusive activities, a UXO evaluation and survey were conducted that included a review of historical records, a visual surface inspection of the SWMU area, and a surface magnetometer survey. Appendix A presents the results of the visual survey conducted during the Phase IIA activities. The surface magnetometer survey conducted on the pit floor of SWMU 37 did not indicate the presence of any items that would be considered UXO. Extensive metal debris was present on the surface of the northern slope of the pit. Because the metal debris rendered the magnetometer unusable, the UXO clearance subcontractor made visual observations. No items were identified that would be considered UXO. Because no historical records existed specifying the past practices at the site, subsurface magnetometer surveys and visual observations also were conducted during the soil boring and excavation activities. Subsurface UXO was not observed during boring and excavation activities conducted on the pit floor. Extensive metal debris and thermate bomb housings and residue were identified and excavated during activities on the northern slope of SWMU 37. Visual observations by the UXO clearance subcontractor did not identify any UXO during soil boring and excavation activities. Based on the UXO evaluation and site surveys, it was determined that UXO is not present at the SWMU and no explosive risk exists.

10.5.2 SWMU 37 Sampling Results

Soil samples were collected at SWMU 37 from the pit floor and the northern slope during the Phase II investigation activities. The results sections evaluate all organic constituents identified. Only those inorganic elements considered COPCs detected at concentrations exceeding their respective UTL are evaluated. All of the data and statistical summary tables for SWMU 37 are presented at the end of Section 10.

10.5.2.1 SWMU 37 Pit Floor Soil Sampling Results

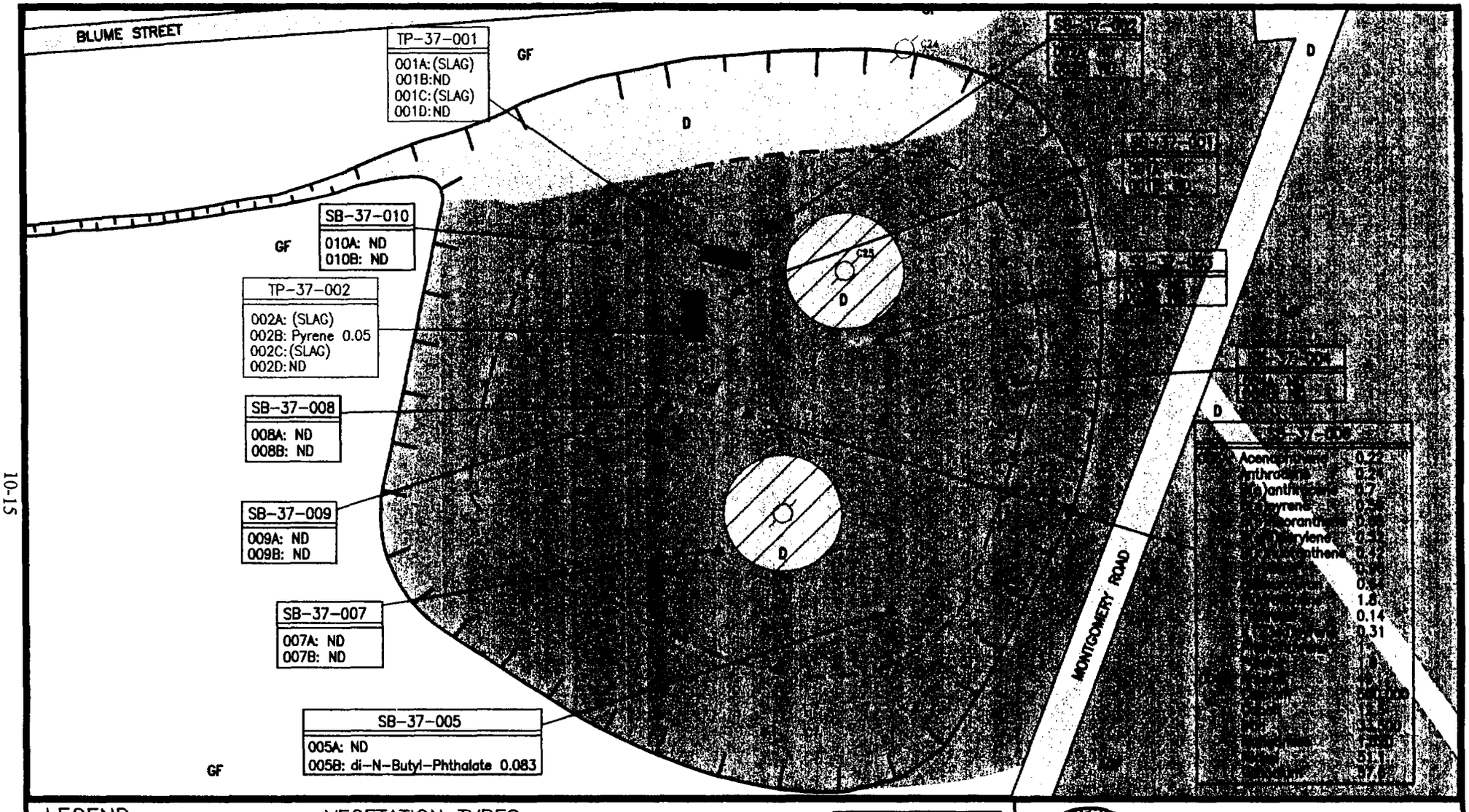
Ten soil borings (SB-37-001 through SB-37-010) were drilled at locations throughout the gravel pit area of SWMU 37, as shown in Figure 10-2. Surface (0 to 0.5 feet BLS) and subsurface samples (3 feet BLS) were collected from all borings. As part of the 1994-95 sampling activities at SWMU 37, all visible slag material on the pit floor was containerized and removed from the site area and disposed of by DCD to eliminate the potential source of contamination. In addition, soil samples were collected from the native soils immediately underlying the slag material during the excavation of two test pits (TP-37-001 and TP-37-002). Because the slag material has been removed from the site, the samples collected below this material (TP-37-001B, TP-37-001D, TP-37-002B, and TP-37-002D) are considered surface samples. All samples were analyzed for SVOCs, metals, cyanide, PCBs, and explosives. Table 10-5 summarizes the results. Data presentation tables, which include results for all analyzed chemicals, are presented in Appendix I.

Slag Material Sampling Results—Prior to slag removal, four samples (TP-37-001A, TP-37-001C, TP-37-002A, and TP-37-002C) were collected from the slag material during the test pit excavation activities to help determine the constituents of the material. These samples were analyzed for SVOCs, metals, cyanide, PCBs, and explosives. The analytical results of the slag material are presented in Table 10-5. SVOCs were detected inconsistently between the different samples (e.g., not detected in TP-37-001A, one SVOC detected in TP-37-002C, and two SVOCs detected in TP-37-002A). Various metals were detected in each sample. Cyanide was detected only in TP-37-001C at 1.27 µg/g (detection limit = 0.92 µg/g). PCBs and explosives were not detected in any sample. In addition, a composite sample (Waste 01) was collected from the homogenous containerized slag material and analyzed for TCLP VOCs, TCLP SVOCs, and TCLP metals. The results of the TCLP sample are presented in Appendix I. The results of the slag analyses indicated that the material was a RCRA nonhazardous waste. The sample results from the slag material are not included in the SWMU evaluation process (i.e., risk assessments) because this material no longer is present at the site.

Pit Floor Surface Soil Sampling Results—Cyanide, PCBs, and explosives were not detected in any of the pit floor surface samples. No inorganic COPCs were determined for the pit floor surface soils. Fourteen SVOCs (predominantly polycyclic aromatic hydrocarbons [PAHs]) were detected in only one of the surface samples (SB-37-006A). A statistical summary of the chemicals detected in the pit floor is presented in Table 10-6. SVOCs were not detected in the subsurface soil sample collected at SB-37-006. The concentrations of all detected SVOCs were relatively low (maximum concentration was fluoranthene, 1.8 µg/g). The presence of the SVOCs at this point could be related to residual slag material; however, only benzo(k)fluoranthene was detected in the slag and surface soil. The results and distribution of the detected SVOCs are shown in Figure 10-5.

Pit Floor Subsurface Soil Sampling Results—Cyanide, PCBs, and explosives were not detected in any of the pit floor subsurface samples. Arsenic, manganese, and calcium were the only inorganic COPCs detected at concentrations exceeding their respective UTL. Each was detected at a concentration exceeding the UTL in only 1 of the 14 subsurface samples (SB-37-006, 3 feet BLS). The concentration of calcium and manganese was the same order of magnitude as their respective UTL; the arsenic concentration (49 µg/g) was an order of magnitude greater than its UTL (3.4 µg/g). Table 10-6 presents a statistical summary of the results. Pyrene (0.05 µg/g, TP-37-002 at 1 foot BLS) and DNBP (0.083 µg/g, SB-37-005 at 3 feet BLS) were the only SVOCs detected. The results and distribution of the detected SVOCs are shown in Figure 10-5.

Summary of Pit Floor Soil Sampling Results—The Phase I and II investigations of the SWMU 37 pit floor identified inconsistently distributed inorganic and organic compounds in the surface soils. SVOCs were detected at only one location in the pit floor surface soils. Only two SVOCs (i.e., pyrene and DNBP) were detected in the pit floor subsurface soils. The number and extent of SVOCs are limited both vertically and horizontally in the soil. The history of the ash and slag material that originally was deposited in this area is unknown, but it is believed to be a byproduct of a deactivation furnace (EBASCO 1993a). This type of material could be the source of the identified metals and SVOCs. The ash/slag material has been removed from SWMU 37, thus eliminating the source.



10-15

LEGEND:

- ..... TELEPHONE POLE
- ..... SWMU 37/GRAVEL PIT BOUNDARY
- ..... FLOOR OF GRAVEL PIT
- ..... GRAVEL MOUNDS SURROUNDING TELEPHONE POLES
- .. TEST PIT SAMPLE LOCATION
- ..... SOIL SAMPLING LOCATION
- ND ..... INORGANICS: <UTL ORGANICS: NOT DETECTED

VEGETATION TYPES:

- D ... DISTURBED AREAS–NO VEGETATION
- GF ..... BUNCHGRASSES/ANNUAL FORBS
- AGF ..... ANNUAL GRASSES AND FORBS

NOTES:

1.) BASE MAP INFO. WAS SCANNED AND IS ACCURATE TO 1:1000.

2.) ALL RESULTS IN ug/g.

3.) SAMPLING LOCATIONS A: SURFACE, B: 3' BLS, C, D: 1–1.5' BLS

N

0 60 120

SCALE: 1" = 120'

AREA 1 | AREA 2 | AREA 3
AREA 4 | AREA 5 | AREA 6

KEY MAP
NOT TO SCALE

Deseret Chemical Depot
Tooele, Utah

SWMU 37 – PHASE II SAMPLE RESULTS (PIT FLOOR)

Figure:	Project:	File:	Date:
10–5	01–0827–03–6523–042	7109/RFI37SLP	NOV. 2000

10.5.2.2 SWMU 37 Slope Soil Sampling Results

Samples were collected from 11 test pit locations (SB-37-11 through SB-37-21) during the investigation of the northern slope of SWMU 37. Surface soil samples (0 to 0.5 feet BLS) were collected from the northwestern slope area only during the Phase IIA activities and analyzed for metals and explosives. Subsurface soil samples were collected during Phase IIA sampling from 1 to 1.5 feet BLS and 5 to 5.5 feet BLS except at SB-37-015, where the deepest sample was collected at 6 to 6.5 feet BLS. Additional subsurface samples (10 and 15 feet BLS) were collected from locations SB-37-12 and SB-37-15 through SB-37-19 during Phase IIB to determine the extent of magnesium. (Location SB-37-019 was sampled only at 10 feet BLS because of refusal at 11 feet BLS.) All subsurface soil samples collected during Phase IIA were analyzed for explosives and metals. Phase IIB subsurface samples were analyzed only for metals. Table 10-7 summarizes the results. Data presentation tables, including results for all chemical analysis, are presented in Appendix I.

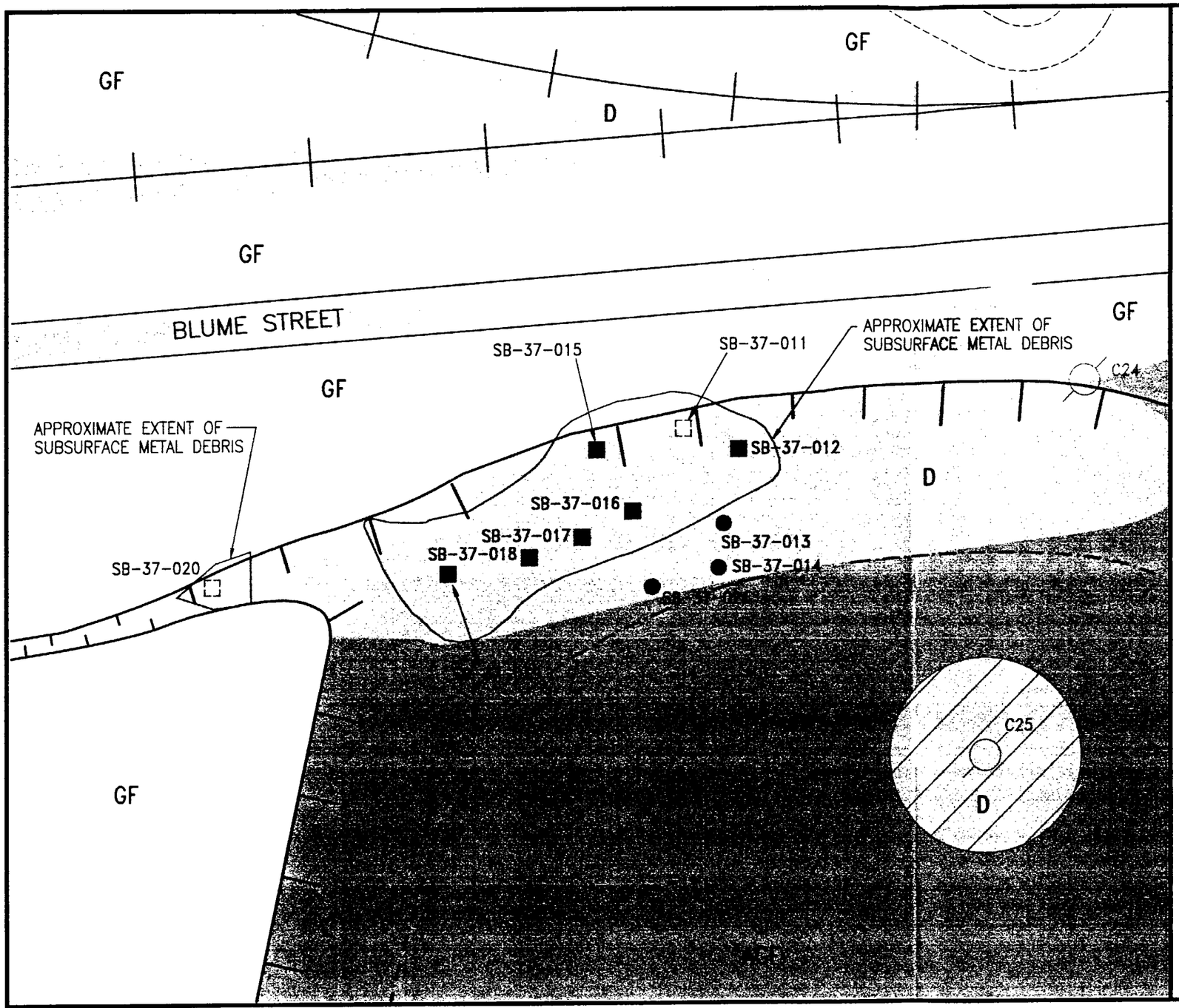
Slope Surface Soil Sampling Results—All surface soil samples analyzed for explosives were nondetect at the 0.2 µg/g reporting limit, except SB-37-018. 2,4,6-Trinitrotoluene (TNT) was detected at 0.53 µg/g from a sample collected amidst rusted bomb fragments at SB-37-018.

Twelve inorganic COPCs were detected in the surface soils at concentrations exceeding their respective UTL: aluminum, antimony, barium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, and silver. Table 10-8 presents a statistical evaluation of the chemicals detected in the SWMU 37 slope surface soils, including the range of detected concentrations, the maximum detected result, and the proportion of detected results greater than the respective background UTL. The maximum detected concentrations of inorganic COPCs were present in the samples collected from either SB-37-11 or SB-37-20. Both of these sample locations were in the area of stressed vegetation and bomb and metal fragments. At least one inorganic COPC exceeding its respective UTL was detected in each surface sample collected from SWMU 37. Magnesium, which is the primary metal that comprises the bomb housing, ranged in the surface soils from 7,410 µg/g (SB-37-11) to 55,100 µg/g (SB-37-20). Figure 10-6 presents the distribution of magnesium at the sample locations. Magnesium in 2 of the 11 surface soil samples (SB-37-20 and SB-37-21) exceed the UTL of 35,700 µg/g.

Slope Subsurface Soil Sampling Results—No explosive compounds were detected in any of the SWMU 37 subsurface soil samples.

Eleven inorganic COPCs were detected in the subsurface soils at concentrations exceeding their respective UTL: antimony, barium, cadmium, copper, iron, lead, magnesium, manganese, nickel, silver, and zinc. Table 10-8 presents a statistical evaluation of the metals detected in the subsurface soils, including the range of detected concentrations, the maximum detected result, and the proportion of detected results greater than the respective background UTL.

At least one inorganic COPC exceeding its respective UTL was detected in each subsurface sample collected from SWMU 37. Generally, inorganics exceeding their respective UTL in samples collected from 1 foot BLS also were detected at concentrations greater than the UTL in



Site ID	Depth (BLS ft.)				
	0	1	5	10	15
SB-37-11	7,410	3,050	5,680	N/A	N/A
SB-37-12	16,900	33,500	268,000	12,800	8,830
SB-37-13	14,300	12,400	10,500	N/A	N/A
SB-37-14	14,400	16,700	9,230	N/A	N/A
SB-37-15	13,100	11,400	90,600 (6.5 ft)	50,800	16,500
SB-37-16	12,500	13,900	86,300	23,200	9,540 (16 ft)
SB-37-17	16,100	12,300	58,800	11,800	8,890
SB-37-18	23,100	16,100	53,600	14,800	11,500
SB-37-19	44,000	11,900	123,000	76,600	N/A
SB-37-20	55,100	60,400	15,000	N/A	N/A
SB-37-21	19,300	21,500	6,510	N/A	N/A

All data in ug/g
Upper Tolerence Limit for Magnesium is 35,700 µg/g.
All shaded data exceeds associated UTL.
N/A = Depth Not Sampled

REPRESENTATIVE TEST PIT ACTIVITIES

REPRESENTATIVE TEST PIT ACTIVITIES

LEGEND:

- TELEPHONE POLE
- SWMU 37/GRAVEL PIT BOUNDARY
- FLOOR OF GRAVEL PIT
- GRAVEL MOUNDS SURROUNDING TELEPHONE POLES
- TEST PIT WITHOUT SUBSURFACE METAL DEBRIS (SAMPLED 0–5 FT. BLS)
- TEST PIT WITH SUBSURFACE METAL DEBRIS (SAMPLED 0–15 FT. BLS)
- TEST PIT WITH SUBSURFACE METAL DEBRIS (SAMPLED 0–5 FT. BLS)

VEGETATION TYPES:

- D ... DISTURBED AREAS–NO VEGETATION
- GF ..... BUNCHGRASSES/ANNUAL FORBS
- AGF ..... ANNUAL GRASSES AND FORBS

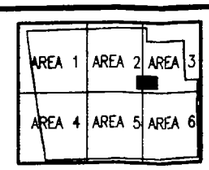
NOTES:

1.) BASE MAP INFO. WAS SCANNED AND IS ACCURATE TO 1:1000.

N

0 30 60

SCALE: 1" = 60'



KEY MAP
NOT TO SCALE

Deseret Chemical Depot
Tooele, Utah

SWMU 37 – PHASE II SOIL SAMPLE RESULTS, MAGNESIUM CONCENTRATIONS GREATER THAN THE UTL

Figure:	Project:	File:	Date:
10–6	01–0827–03–6523–042	7109/RFI37MCG	NOV. 2000

the deeper samples collected from the same test pit. As in the surface samples, the sample locations with no subsurface metal fragments (SB-37-013, SB-37-014, and SB-37-21) contained the fewest number of inorganic COPCs exceeding the UTL.

Magnesium was detected at concentrations exceeding the subsurface magnesium UTL (35,700 µg/g) in 9 of the 33 subsurface samples. Magnesium in the subsurface soils ranged from 3,050 µg/g (1 foot BLS in SB-37-11) to 268,000 µg/g (5 feet BLS in SB-37-012). Only 1 of the 11 samples from 1 foot BLS (SB-37-20) exceeded the magnesium UTL; 6 of the 11 samples from 5 or 6.5 feet BLS exceeded the UTL. Only 2 of the 11 samples collected during Phase IIB from 10 and 15 feet BLS exceeded the UTL. These elevated concentrations were detected in the sample collected at 10 feet BLS from SB-37-15 (50, 800 µg/g) and SB-37-19 (76,600 µg/g). Magnesium detected at 15 feet BLS was below the UTL. The maximum detected concentration of magnesium was 268,000 µg/g in SB-37-12 at 5 feet BLS. Magnesium in the sample collected at 10 feet BLS at this location was below the UTL. The maximum concentration of magnesium was detected in the area of metal debris and the elevated magnesium concentrations correspond to the depths directly below the metal debris/bomb fragments. Figure 10-6 presents the Phase II magnesium concentrations greater than the UTL.

Summary of Slope Soil Sampling Results—Inorganic COPCs are distributed randomly throughout the sampled area on the northern slope, with the higher concentrations detected in the area of the identified thermate bomb fragment disposal trench. Magnesium, the element of concern on the slope because it is the major component of the bomb housing, exceeded its UTL primarily at 5 to 6.5 feet BLS. This sample depth is immediately below the bottom of the disposal trench. Only 2 of the 11 samples collected below this depth exceeded the magnesium UTL. The elevated magnesium appears to be confined to the area of metal debris. In addition, the K_d of magnesium (1.6 to 13.5 mL/g) indicates that it would adsorb readily to the soil. The lack of vertical migration of magnesium would be similar to that of transport model results for mercury presented in Section 6.

10.6 SWMU 37 HUMAN HEALTH RISK ASSESSMENT

A baseline human health risk assessment was conducted to determine the risks associated with exposure to chemicals detected at SWMU 37. Baseline risks are defined as risks in the absence of remediation or institutional controls at the SWMU. All of the human health risk data tables for SWMU 37 are presented at the end of Section 10.

10.6.1 Baseline Human Health Risk Assessment

This section presents the results and conclusions along with SWMU-specific information pertaining to the human health risk assessment for SWMU 37. The general methods used to conduct the risk assessment and information applicable to all of the SWMU is presented in Section 4.1.

10.6.1.1 Methodology Overview

The methods for selecting COPCs are detailed in Section 4.1.1.2. As part of the COPC selection process, data were aggregated into two exposure units (i.e., pit floor and the slope) and compared to the corresponding background data set. Monitoring data for produce and beef tissue are not available at SWMU 37. However, the risk assessment evaluates exposures to these media. Exposure point concentrations for these media were derived from soil concentrations using simple models (see Section 4.1.2.3). Therefore, the COPCs selected for soils are also the COPCs for produce and beef.

The COPCs in soil for SWMU 37 are listed in Tables 10-9 and 10-10. Additional information is presented in the Appendix K tables entitled, "Summary Statistics and Exposure Point Concentrations." These tables present general summary statistics (e.g., minimum and maximum detected values, minimum and maximum certified reporting limits [CRLs], mean, and 95 percent upper confidence limit [UCL]) and exposure point concentrations.

The risk assessment evaluates exposures under both current and potential future land uses. Under current land use, an industrial land use scenario has been evaluated in which the receptors at potential risk of exposure are Depot workers. The most likely future land use of DCD is the same as current land use (i.e., industrial). Therefore, a future land use Depot worker scenario also has been evaluated. However, the exposure frequency under current land use is considerably less than the exposure frequency under future land use to reflect the lack of current activity at SWMU 37. Additional future land use scenarios include a residential scenario, evaluated in accordance with the Utah Hazardous Waste Management Rules (Utah 1999), and a future construction worker scenario. Exposure pathways evaluated in the risk assessment are shown in Table 4-2.

The derivation of the exposure point concentrations for all pathways is explained in Section 4.1.2.3. The exposure point concentrations for the COPCs are presented in the Appendix K tables entitled, "Summary Statistics and Exposure Point Concentrations" and in each chemical-specific risk characterization table in Appendix L. The exposure assumptions used to estimate chronic daily intake are presented in Table 4-3.

The methods used in the risk characterization are detailed in Section 4.1.4. The human health risks are presented in terms of excess lifetime cancer risks (ELCRs), hazard indices (HIs), and blood lead levels for each pathway and receptor. The State of Utah has established target risk levels for use in determining the need for remediation. The risk assessment calculates risks and compares these to target levels. If the target levels are exceeded, the chemicals of concern (COCs) responsible for the exceedances are identified. As opposed to COPCs, COCs are identified after the quantitative risk assessment has been completed. To be consistent with the guidelines set by the State of Utah for corrective action, COCs in the human health risk assessment are individual chemicals that contribute to pathway risks exceeding any of the following:

- HI of 1
- Cancer risk greater than 1×10^{-4} for the actual or potential land use scenario
- Cancer risk greater than 1×10^{-6} for the residential land use scenario.

COCs have been identified separately for each land use scenario and may either independently exceed targets or combine to exceed targets.

10.6.1.2 Human Health Risk Assessment Results for SWMU 37 – Pit Floor

The results of the risk characterization for all analytes except lead are presented in Tables 10-11 and 10-12 (food chain pathway risks are presented separately). Tables 10-13 and 10-14 present the COCs for each medium, their respective reasonable maximum exposure (RME) risk, and contribution to the total RME HI or cancer risk. These results are summarized below.

Depot Workers (Current Land Use)—The combined noncancer HI resulting from surface soil exposures for the current Depot worker is 4×10^{-6}, which is less than the target HI of 1. The combined cancer risk for the current Depot worker is 2×10^{-7}, which is less than the target cancer risk of 1×10^{-4}.

Depot Workers (Future Land Use)—The combined noncancer HI resulting from surface soil exposures for the future Depot worker is 0.0002, which is less than the target HI of 1. The combined cancer risk for the future Depot worker is 9×10^{-6}, which is less than the target cancer risk of 1×10^{-4}.

Construction Workers (Future Land Use)—The combined noncancer HIs for the construction worker are 2×10^{-5} for surface soil exposures and 0.09 for subsurface soil exposures. Both are less than the target HI of 1. The combined cancer risks are 5×10^{-7} for surface soil exposures and 3×10^{-6} for subsurface soil exposures, which are less than the target cancer risk of 1×10^{-4}.

Residents (Future Land Use)—The combined noncancer HIs for the child (0.001 for surface soil exposures and 1 for subsurface soil exposures) are at or below the target HI of 1. The combined noncancer HIs for the adult (0.0003 for surface soil exposures and 0.3 for subsurface soil exposures) are below the target HI of 1. The combined cancer risks for the integrated child/adult resident (2×10^{-5} for surface soil exposures and 8×10^{-5} for subsurface soil exposures) exceed the cancer risk target of 1×10^{-6}.

The following were identified as COCs in soils for residents:

- Arsenic — Subsurface soil ingestion cancer risk = 5×10^{-5}; Subsurface soil dermal contact cancer risk = 4×10^{-5}
- Benzo(a)anthracene — Surface soil dermal contact cancer risk = 1×10^{-6}
- Benzo(a)pyrene — Surface soil ingestion cancer risk = 4×10^{-6}; Surface soil dermal contact cancer risk = 1×10^{-5}
- Benzo(b)fluoranthene — Surface soil dermal contact cancer risk = 1×10^{-6}.

For the food chain pathways (produce and beef ingestion), the combined noncancer HIs for the surface soil (0.04 for the resident child and 0.01 for the resident adult) fall below the target HI of 1. The combined noncancer HIs for the subsurface soil (4 for the resident child and 1 for the

resident adult) are at or exceed the target HI of 1. The combined cancer risks for the integrated child/adult resident ingesting produce and beef (1×10^{-4} for surface soil exposures and 4×10^{-4} for subsurface soil exposures) exceed the cancer risk target of 1×10^{-6}.

The following were identified as COCs associated with produce grown in surface soils for residents:

- Benzo(a)anthracene — Tuberous vegetable ingestion cancer risk = 9×10^{-6}
- Benzo(a)pyrene — Tuberous vegetable ingestion cancer risk = 6×10^{-5}
- Benzo(b)fluoranthene — Tuberous vegetable ingestion cancer risk = 4×10^{-6}
- Indeno(1,2,3-cd)pyrene — Tuberous vegetable ingestion cancer risk = 2×10^{-6}.

The following was identified as a COC associated with produce grown in subsurface soils for residents:

- Arsenic — Leafy vegetable ingestion hazard quotient (HQ) = 3 (child), 0.9 (adult)
  Leafy vegetable ingestion cancer risk = 3×10^{-4}
  Tuberous vegetable ingestion HQ = 1 (child), 0.3 (adult)
  Tuberous vegetable ingestion cancer risk = 9×10^{-5}
  Fruit ingestion cancer risk = 2×10^{-5}.

The following were identified as COCs associated with ingestion of beef for residents:

- Benzo(a)pyrene — Beef ingestion cancer risk = 2×10^{-5}
- Benzo(b)fluoranthene — Beef ingestion cancer risk = 5×10^{-6}
- Indeno(1,2,3-cd)pyrene — Beef ingestion cancer risk = 8×10^{-6}.

10.6.1.3 Human Health Risk Assessment Results for SWMU 37 – Slope

The results of the risk characterization for all analytes except lead are presented in Tables 10-15 and 10-16 (food chain pathway risks are presented separately). Tables 10-17 and 10-18 present the COCs for each medium, their respective RME risk, and contribution to the total RME HI or cancer risk. These results are summarized below.

Depot Workers (Current Land Use)—The combined noncancer HI resulting from surface soil exposures for the current Depot worker is 0.01, which is less than the target HI of 1. The combined cancer risk for the current Depot worker is 6×10^{-10}, which is less than the target cancer risk of 1×10^{-4}. The maximum concentration of lead in the surface soil exceeds the 400 parts per million (ppm) screening level. Therefore, modeling to evaluate receptor blood lead levels in the fetus of a female adult current Depot worker was conducted. The modeling results show that the mean blood lead level in the fetus is 7 µg/dL, which is below the Centers for Disease Control and Prevention(CDC) target (10 µg/dL).

Depot Workers (Future Land Use)—The combined noncancer HI resulting from surface soil exposures for the future Depot worker is 0.5, which is less than the target HI of 1. The

combined cancer risk for the future Depot worker is 3×10^{-8}, which is less than the target cancer risk of 1×10^{-4}. The maximum concentration of lead in the surface soil exceeds the 400 ppm screening level. Therefore, modeling to evaluate receptor blood lead levels in the fetus of a female adult future Depot worker was conducted. The modeling results show that the mean blood lead level in the fetus is 8 µg/dL, which is below the CDC target (10 µg/dL).

Construction Workers (Future Land Use)—The combined noncancer HIs for the construction worker are 0.5 for surface soil exposures and 1 for subsurface soil exposures. Both are less than or at the target HI of 1. The combined cancer risks are 2×10^{-9} for surface soil exposures and 2×10^{-10} for subsurface soil exposures, which are less than the target cancer risk of 1×10^{-4}. The maximum concentrations of lead in the surface and subsurface soils exceed the 400 ppm screening level. Therefore, modeling to evaluate receptor blood lead levels in the fetus of a female adult construction worker was conducted. The modeling results show that mean blood lead levels in the fetus are 9 µg/dL for surface soils and 8 µg/dL for subsurface soils, both of which are below the CDC target (10 µg/dL).

Residents (Future Land Use)—The combined noncancer HIs for the child (7 for surface soil exposures and 20 for subsurface soil exposures) exceed the target HI of 1. The combined noncancer HIs for the adult are 0.8 for surface soil exposures and 2 for subsurface soil exposures. The adult noncancer HI for subsurface soil exposures exceeds the target HI of 1. Noncancer HIs were segregated according to target organ. The target organ HI (TOHI) exceeds 1 for the kidney and gastrointestinal system (due to barium and copper exposure). The combined cancer risks for the integrated child/adult resident (7×10^{-8} for surface soil exposures and 1×10^{-8} for subsurface soil exposures) are below the cancer risk target of 1×10^{-6}. The maximum concentrations of lead in the surface and subsurface soils exceed the 400 ppm screening level. Therefore, modeling to evaluate receptor blood lead levels in resident children was conducted. The modeling results show that the mean blood lead level from surface soil exposures exceeds the CDC target for the resident child.

The following were identified as COCs in soils for residents:

- Barium — Subsurface soil ingestion HQ = 3 (child), 0.3 (adult)
- Copper — Subsurface soil ingestion HQ = 4 (child), 0.4 (adult)
- Iron — Surface soil ingestion HQ = 4 (child), 0.4 (adult)
Subsurface soil ingestion HQ = 10 (child), 1 (adult)
- Lead — Surface soil, 95th percentile mean blood lead level = 12 µg/dL.

For the food chain pathways (produce and beef ingestion), the combined noncancer HIs for the surface soil (100 for the resident child and 40 for the resident adult) exceed the target HI of 1. The combined noncancer HIs for the subsurface soil (500 for the resident child and 200 for the resident adult) also exceed the target HI of 1. The combined cancer risks for the integrated child/adult resident ingesting produce and beef (3×10^{-6} for surface soil exposures and 2×10^{-12} for subsurface soil exposures) exceed the cancer risk target of 1×10^{-6} for surface soils, but do not exceed the target for subsurface soils.

The following were identified as COCs associated with produce grown in surface soils for residents:

- Barium — Leafy vegetable ingestion HQ = 10 (child), 4 (adult)
  Tuberous vegetable ingestion HQ = 2 (child), 0.7 (adult)
  Fruit ingestion HQ = 2 (child), 0.7 (adult)
- Cadmium — Leafy vegetable ingestion HQ = 4 (child), 1 (adult)
  Tuberous vegetable ingestion HQ = 1 (child), 0.4 (adult)
  Fruit ingestion HQ = 2 (child), 0.5 (adult)
- Copper — Leafy vegetable ingestion HQ = 20 (child), 6 (adult)
  Tuberous vegetable ingestion HQ = 20 (child), 6 (adult)
  Fruit ingestion HQ = 20 (child), 6 (adult)
- Iron — Leafy vegetable ingestion HQ = 1 (child), 0.4 (adult)
  Tuberous vegetable ingestion HQ = 0.6 (child), 0.2 (adult)
  Fruit ingestion HQ = 0.5 (child), 0.2 (adult)
- Manganese — Leafy vegetable ingestion HQ = 20 (child), 6 (adult)
  Tuberous vegetable ingestion HQ = 8 (child), 2 (adult)
  Fruit ingestion HQ = 2 (child), 0.8 (adult)
- TNT — Tuberous vegetable ingestion cancer risk = 2×10^{-6}.

The following were identified as COCs associated with produce grown in subsurface soils for residents:

- Barium — Leafy vegetable ingestion HQ = 40 (child), 10 (adult)
  Tuberous vegetable ingestion HQ = 6 (child), 2 (adult)
  Fruit ingestion HQ = 6 (child), 2 (adult)
- Cadmium — Leafy vegetable ingestion HQ = 4 (child), 1 (adult)
  Tuberous vegetable ingestion HQ = 1 (child), 0.4 (adult)
  Fruit ingestion HQ = 2 (child), 0.5 (adult)
- Copper — Leafy vegetable ingestion HQ = 100 (child), 40 (adult)
  Tuberous vegetable ingestion HQ = 100 (child), 40 (adult)
  Fruit ingestion HQ = 100 (child), 40 (adult)
- Iron — Leafy vegetable ingestion HQ = 4 (child), 1 (adult)
  Tuberous vegetable ingestion HQ = 2 (child), 0.5 (adult)
  Fruit ingestion HQ = 2 (child), 0.5 (adult)
- Manganese — Leafy vegetable ingestion HQ = 20 (child), 8 (adult)
  Tuberous vegetable ingestion HQ = 10 (child), 3 (adult)
  Fruit ingestion HQ = 3 (child), 1 (adult).

The following were identified as COCs associated with ingestion of beef for residents:

- Copper — Beef ingestion HQ = 2 (child), 0.7 (adult)
- Iron — Beef ingestion HQ = 7 (child), 2 (adult).

10.7 SWMU 37 SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT

This section presents conclusions along with SWMU-specific information pertaining to the screening-level ecological risk assessment (SERA) conducted for SWMU 37. Details on the methodology employed to support this analysis are provided in Section 4.2. All of the SERA data tables for SWMU 37 are presented at the end of Section 10.

10.7.1 Ecological Resources

SWMU 37 is a gravel pit area that covers approximately 14 acres. Grasses tended to grow more densely in the bottom of the gravel pit, possibly due to the higher moisture content of the soil in this area. Dead plants were observed on the slope. Contaminant concentrations were greater in the slope than in the bottom of the gravel pit, which also could have contributed to the vegetation differences. Vegetation mapping by EBASCO (1994) indicates the area is within the annual grasses and forb habitat.

10.7.2 Ecological Risk Methodology

An ecological risk assessment is necessary at SWMU 37 because there is sufficient habitat on the SWMU to support small mammals, such as the white-footed deer mouse (*Peromyscus maniculatus*) black-tailed jackrabbit (*Lepus californicus*), and larger native vertebrates, such as mule deer (*Odocoileus hemionus*). The size of the available habitat is approximately 14 acres composed primarily of grasses and rabbitbrush. The size of the home range of the black-tailed jackrabbit in desert conditions is approximately 40 acres (French et al. 1965). When this desert home range is compared to the available habitat on the SWMU, it becomes apparent that approximately 35 percent of the home range area is needed for a black-tailed jack rabbit. The implication is that sufficient habitat exists for jackrabbits.

In addition, the area immediately surrounding the SWMU also is capable of supporting individuals and populations that can easily utilize the SWMU area for food, water, and cover. A SERA is performed on a SWMU having at least one-third the area of an animal's home range, having habitat open in most directions, or having a unique characteristic (e.g., water) on it. Since two conditions exist at SWMU 37, a SERA is needed.

The methods for conducting ecological risk assessments are detailed in Section 4.2. In summary, the systematic methods follow four inter-related steps: problem formulation, exposure assessment, effects assessment, and risk characterization. The following summarization of risk characterization uses the previously described methods and applies them to SWMU 37.

The conceptual site model (CSM) for ecological receptors (Figure 10-7) presents the pathways assumed to be complete for SWMU 37. Vegetation exposure is via root uptake from soil. Ingestion of soil and vegetation was evaluated for jackrabbits. Ingestion of small mammals (i.e., jackrabbits) was evaluated for golden eagles.

The SERA consisted of a two-step process. First, detected chemicals were selected as ecological chemicals of potential concern (ecoCOPCs) based on a comparison with EPA Region V ecological data quality levels (EDQLs) for surface soil (EPA 1999c) and background concentrations. The ecoCOPCs were evaluated further in the risk characterization section discussed below.

Risk characterization compares exposures to effects to determine the risk or likelihood of harm to plants and animals. An evaluation of the ecological assessment endpoints, using HQs for ecoCOPCs at SWMU 37, forms the quantitative basis of this risk characterization. The use of HQs to calculate the risks to ecological receptors is supported by available guidance (EPA 1992f, 1997c, and 1998).

HQs compare the estimated exposure concentrations to toxicity threshold concentrations. Exposure concentrations are derived from measured environmental concentrations, such as the 95 percent UCL, by multiplying the measured concentration by exposure parameters. As detailed in Section 4.2.5, the exposure parameter incorporates realistic adjustments to the measured environmental concentration (e.g., fraction of ingestion diet that comes from contaminated soil for small mammals) and realistic and reasonable assumptions (e.g., continuous year-round exposure). That is:

$$HQ = \frac{\text{Exposure Point Concentration} \times \text{Exposure Parameters}}{\text{Toxicity Reference Value}}$$

There are instances at SWMU 37 where an HQ cannot be calculated for an ecoCOPC because insufficient data were available to establish a toxicity threshold. These ecoCOPCs are carried through the risk characterization as ecoCOPCs of uncertain risk to ecological receptors.

In determining the ecological assessment endpoints for DCD (Section 4.2.4), an HQ greater than or equal to unity (1) indicates that there is a potential for harmful ecological effects and that the ecoCOPC qualifies as an ecological chemical of concern (ecoCOC). Moreover, the risk of potential effects, severity of effects, or both, is assumed to increase with the magnitude of the ratio. An HQ threshold of 1 assumes that the toxicity threshold and exposure concentrations are based on accurate predictions and measurements. As detailed in Section 4.2.4, regarding assessment endpoints, setting the threshold of the HQ ratio at 10 rather than 1 adjusts for the overestimation of risk to receptor populations resulting from the use of conservative exposure factors and toxicity thresholds. The eagle is an exception to the 10 threshold; its threshold is 1 because of the necessity to protect individual organisms for threatened and endangered (T&E) organisms.

For SWMU 37, there are two exposure units at two soil depths (0 to 0.5 feet and 0.5 to 15 feet). The receptors evaluated are vegetation, black-tailed jackrabbits, and golden eagles.

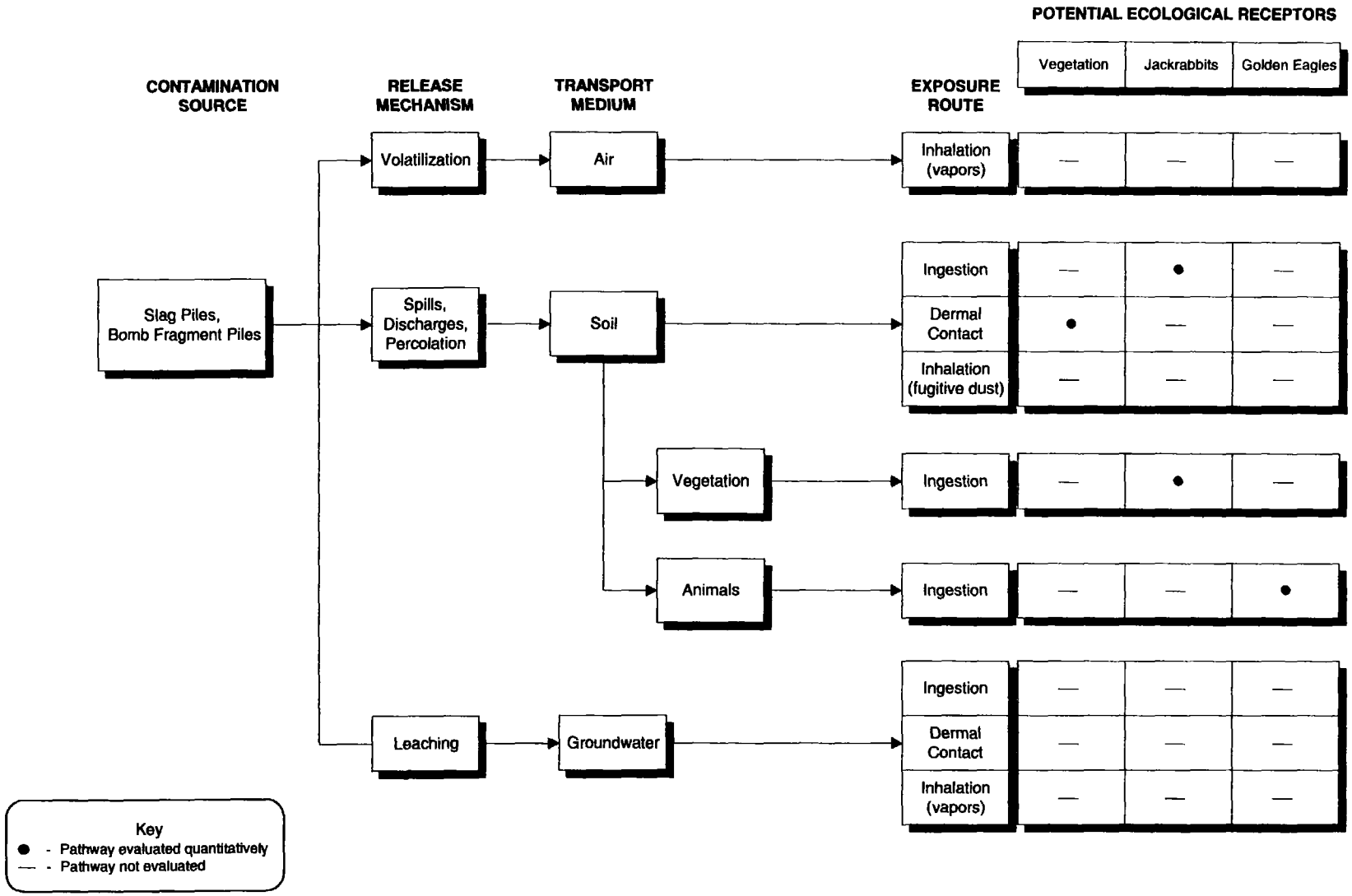


Figure 10-7. Conceptual Site Model for DCD Screening-level Ecological Risk Assessment at SWMU 37

10.7.2.1 Ecological Risk Findings

No stressed plants or animals were observed during the qualitative habitat surveys. Thus, no imminent threat to ecological receptors appears to exist. The chemicals detected in the SMWU 37 pit floor surface and subsurface soil samples are presented in Tables 10-19 and 10-20, respectively, while the chemicals detected in the SMWU 37 slope surface and subsurface soil samples are presented in Tables 10-21 and 10-22, respectively. These tables include a summary of the frequency of detection, the location of the maximum detected concentration, the site exposure point concentration and range of detected concentrations, and the results of the ecological toxicity and background screens. The methods for selecting ecoCOPCs are discussed briefly in Section 5.7.2.2 and are presented in greater detail in Section 4.2.

Acenaphthene and dibenzofuran were selected as ecoCOPCs in the SWMU 37 pit floor surface soils (Table 10-19). Arsenic and calcium were selected as ecoCOPCs in the SWMU 37 pit floor subsurface soils (Table 10-20). These ecoCOPCs were evaluated further in the SERA using HQs.

Aluminum, antimony, barium, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, silver, zinc, and TNT were selected as ecoCOPCs in the SWMU 37 slope surface soils (Table 10-21). Antimony, barium, cadmium, copper, iron, lead, magnesium, manganese, nickel, silver, and zinc were selected as ecoCOPCs in the SWMU 37 slope subsurface soil (Table 10-22). These ecoCOPCs were evaluated further in the SERA using HQs.

There are no HQs over the threshold of 1 for any of the receptors (terrestrial plants, black-tailed jackrabbits, and golden eagles) for the ecoCOPCs in the SWMU 37 pit floor surface soil (Table 10-24). A terrestrial plant toxicity reference value (TRV) was not available for dibenzofuran, so this ecoCOPC could not be evaluated further. However, dibenzofuran only was detected in 1 of 10 samples and terrestrial plants are unlikely to be exposed very much to this contaminant. Based on the available information, no unacceptable ecological risks appear to be associated with surface soil exposures at the SWMU 37 pit floor.

EcoCOPCs in SWMU 37 pit floor subsurface soil with HQs above the threshold of 1 occurred for arsenic (2.1 for terrestrial plants and 36 for black-tailed jackrabbits) (Table 10-23). No inorganic ecoCOPCs had HQs exceeding 1 for golden eagles, in part because the size of SWMU 37 is small relative to their home range. TRVs were not available for calcium, so this ecoCOPC could not be evaluated further. However, calcium is an essential nutrient for plants and animals and unlikely to be toxic except at extremely elevated concentrations. An HQ above the threshold of 1, but below 10, indicates a potential risk to individuals rather than a risk to the population as a whole. Thus, arsenic is likely not of concern to plants but may be of concern to black-tailed jackrabbits. Assuming an HQ of 10 as being a more realistic assessment endpoint for plant populations, arsenic is an ecoCOCs at the SWMU 37 pit floor. Risks for all ecoCOPCs at the SWMU 37 pit floor are presented in Tables M-32 through M-37 of Appendix M.

The lack of vegetation on the slope in conjunction with dead plants suggests an imminent threat could exist at the SWMU-37 slope. At the SWMU 37 slope, there are 12 inorganic ecoCOPCs and 1 organic ecoCOPC in surface soil and 9 inorganic ecoCOPCs in subsurface soil with HQs above the threshold of 1 (Table 10-23). As Table 10-23 shows, in the surface soil, six of

these chemicals (i.e., aluminum, barium, chromium, copper, lead, and silver) have HQs greater than 10 for terrestrial plants (ranging from 11 to 470). HQs for aluminum, antimony, barium, and silver also exceeded 10 for jackrabbits (Table 10-23; ranging from 41 to 1,315). In the subsurface soil, three of these chemicals (i.e., barium, copper, and silver) have HQs greater than 10 for terrestrial plants (ranging from 31 to 116). HQs for antimony, barium, copper, and silver also exceeded 10 for jackrabbits in subsurface soil (Table 10-23; ranging from 36 to 293). No inorganic ecoCOPCs had HQs exceeding 1 for golden eagles, in part because the size of SWMU 37 is smaller relative to their home ranges. TRVs were not available for iron and magnesium (all receptors) and cobalt (only birds). However, iron and magnesium are essential nutrients for plants and animals and unlikely to be toxic except at extremely elevated concentrations. An HQ above the threshold of 1, but below 10, indicates a potential risk to individuals rather than a risk to the population as a whole. Thus, the ecoCOPCs with HQs above 1 but below 10 are likely not of concern at the SWMU 37 slope. Assuming an HQ of 10 as being a more realistic assessment endpoint for plant and rabbit populations, the ecoCOCs at the SWMU 37 slope include aluminum, antimony, barium, chromium, copper, lead, and silver. Risks for all ecoCOPCs at the SWMU 37 slope are presented in Tables M-38 through M-43 of Appendix M.

Future estimated risks to plants and animals at SWMU 37 are considered similar to current risks. The same species of plants and animals are assumed to be present at SWMU 37 in the future. Habitats may change as a result of ecological succession and land use changes. This may affect the exact set of receptors at some locations. However, these changes are likely subtle in the context of this work because of the similarity of habitat in all directions, and no risk calculations were made solely for future conditions. Again, future and current risks are assumed to be similar.

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-001A		SB-37-002A		SB-37-003A		SB-37-004A		SB-37-005A		SB-37-005A		SB-37-006A
Field Sample Number			SAIC01		SAIC01		SAIC01		SAIC01		SAIC01		SAIC02		SAIC01
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE
Collection Date			9/23/94		9/23/94		9/23/94		9/23/94		9/24/94		9/24/94		9/24/94
Depth (ft)			0.00		0.00		0.00		0.00		0.00		0.00		0.00
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Metals (JD17)															
Laboratory Id Number			STSSA*58		STSSA*55										
Parameter	Units	RL													
Lead	ug/g	0.177	13.0		19.0		N/A		N/A		N/A		N/A		N/A
Metals (JD19)															
Laboratory Id Number			STSSA*58		STSSA*55		STSSA*56		STSSA*57		STSSA*63		STSSA*64		STSSA*65
Parameter	Units	RL													
Arsenic	ug/g	0.25	6.41		8.06		4.55		10.8		12.0		13.0 D		10.0
Metals (JS16)															
Laboratory Id Number			STSSA*58		STSSA*55		STSSA*56		STSSA*57		STSSA*63		STSSA*64		STSSA*65
Parameter	Units	RL													
Aluminum	ug/g	2.350	5190		4270		5900		8790		16100		17100 D		19800
Barium	ug/g	5.180	144		121		133		165		167		157 D		181
Beryllium	ug/g	0.500	LT 0.500	LT	0.500		0.567		0.924		0.995		1.36 D		1.01
Cadmium	ug/g	0.700	LT 0.700		1.08	LT	0.700		1.28		1.26		1.49 D		1.37
Calcium	ug/g	100.000	70000		120000		78000		120000		92000 G		88000 D		72000
Chromium	ug/g	4.050	8.31		10.5		8.22		13.5		21.1 G		22.0 D		22.6
Cobalt	ug/g	1.420	4.45		3.77		4.38		6.50		6.53		6.58 D		6.31
Copper	ug/g	0.965	10.1		14.0		17.0		22.8		23.3		20.7 D		27.5
Iron	ug/g	3.680	7540		8420		7270		12200		16000		16600 D		18200
Lead	ug/g		N/A		N/A		22.0		33.7		31.1		27.4 D		31.6
Magnesium	ug/g	100.000	9500		10100		10700		13900		13600 G		13900 D		14000
Manganese	ug/g	2.050	363		390		370		532		459		451 D		449
Nickel	ug/g	1.710	13.3		12.6		12.3		21.4		23.3		24.7 D		23.0
Potassium	ug/g	100.000	1630		1320		2450		3220		4360 G		4540 D		5780
Sodium	ug/g	100.000	533		461		489		789		563 G		626 D		601
Thallium	ug/g	6.623	10.3	LT	6.62	LT	6.62		12.8	LT	6.62		11.9 D		10.5
Vanadium	ug/g	3.390	16.6		12.8		13.6		22.8		27.8		29.8 D		27.8
Zinc	ug/g	8.030	44.1		46.4		46.3		80.4		91.0		88.8 D		99.8
Semivolatiles (LM18)															
Laboratory Id Number			STSSA*58		STSSA*55		STSSA*56		STSSA*57		STSSA*63		STSSA*64		STSSA*65
Parameter	Units	RL													
Acenaphthene	ug/g	0.036	LT 0.200	LT	0.0360	LT	0.0360	LT	0.0360	LT	0.0360	LT	0.0360 D		0.220
Anthracene	ug/g	0.033	LT 0.200	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330 D		0.240
Benzo(a)anthracene	ug/g	0.170	LT 0.800	LT	0.170	LT	0.170	LT	0.170	LT	0.170	LT	0.170 D		0.700

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID				SB-37-001A		SB-37-002A		SB-37-003A		SB-37-004A		SB-37-005A		SB-37-005A		SB-37-006A
Field Sample Number				SAIC01		SAIC01		SAIC01		SAIC01		SAIC01		SAIC02		SAIC01
Site Type				BORE		BORE		BORE		BORE		BORE		BORE		BORE
Collection Date				9/23/94		9/23/94		9/23/94		9/23/94		9/24/94		9/24/94		9/24/94
Depth (ft)				0.00		0.00		0.00		0.00		0.00		0.00		0.00
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Benzo(a)pyrene	ug/g	0.250	LT	1.00	LT	0.250	LT	0.250	LT	0.250	LT	0.250	LT	0.250 D		0.590
Benzo(b)fluoranthene	ug/g	0.210	LT	1.00	LT	0.210	LT	0.210	LT	0.210	LT	0.210	LT	0.210 D		0.650
Benzo(g,h,i)perylene	ug/g	0.250	LT	1.00	LT	0.250	LT	0.250	LT	0.250	LT	0.250	LT	0.250 D		0.320
Benzo(k)fluoranthene	ug/g	0.066	LT	0.300	LT	0.0660	LT	0.0660	LT	0.0660	LT	0.0660	LT	0.0660 D		0.420
Chrysene	ug/g	0.120	LT	0.600	LT	0.120	LT	0.120	LT	0.120	LT	0.120	LT	0.120 D		0.960
Dibenzofuran	ug/g	0.035	LT	0.200	LT	0.0350	LT	0.0350	LT	0.0350	LT	0.0350	LT	0.0350 D		0.0640
Fluoranthene	ug/g	0.068	LT	0.300	LT	0.0680	LT	0.0680	LT	0.0680	LT	0.0680	LT	0.0680 D		1.80
Fluorene	ug/g	0.033	LT	0.200	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330 D		0.140
Indeno(1,2,3-cd)pyrene	ug/g	0.290	LT	1.00	LT	0.290	LT	0.290	LT	0.290	LT	0.290	LT	0.290 D		0.310
Phenanthrene	ug/g	0.033	LT	0.200	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330 D		1.00
Pyrene	ug/g	0.033	LT	0.200	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330 D		1.60

Boolean Codes:
- LT - Less than the certified reporting limit
- ND - Not detected

Footnotes:
- CRL - Certified reporting limits
- ID - Identification
- N/A - Not applicable
- TICs - Tentatively Identified Compound

Flagging Codes:
- D - Duplicate analysis.
- G - Analyte found in rinse blank as well as in sample.

Created on: 12/13/00

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-007A		SB-37-007A		SB-37-008A		SB-37-009A		SB-37-010A	
Field Sample Number			SAIC01		SAIC02		SAIC01		SAIC01		SAIC01	
Site Type			BORE		BORE		BORE		BORE		BORE	
Collection Date			9/24/94		9/24/94		9/24/94		9/24/94		9/24/94	
Depth (ft)			0.00		0.00		0.00		0.00		0.00	
Associated Field QC Sample - Site Id												
Associated Field QC Sample - Field Sample No.												
Associated Field QC Sample - Site Id												
Associated Field QC Sample - Field Sample No.												
Metals (JD17)												
Laboratory Id Number			STSSA*61		STSSA*62		STSSA*59		STSSA*60			
Parameter	Units	RL										
Lead	ug/g	0.177	16.0		15.0 D		12.0		10.6		N/A	
Metals (JD19)												
Laboratory Id Number			STSSA*61		STSSA*62		STSSA*59		STSSA*60		STSSA*66	
Parameter	Units	RL										
Arsenic	ug/g	0.25	4.16		2.68 D		9.16		3.44		10.0	
Metals (JS16)												
Laboratory Id Number			STSSA*61		STSSA*62		STSSA*59		STSSA*60		STSSA*66	
Parameter	Units	RL										
Aluminum	ug/g	2.350	5690		4050 D		3550 G		1770 G		8680	
Barium	ug/g	5.180	162		152 D		78.0		43.5		175	
Beryllium	ug/g	0.500	LT 0.500	LT	0.500 D	LT	0.500	LT	0.500	LT	0.500	
Cadmium	ug/g	0.700	LT 0.700	LT	0.700 D	LT	0.700	LT	0.700	LT	0.700	
Calcium	ug/g	100.000	49900		48200 D		8640 G		140000 G		92000 G	
Chromium	ug/g	4.050	6.81	LT	4.05 D		5.04 G		5.30 G		28.9 G	
Cobalt	ug/g	1.420	4.57		4.42 D		3.35		1.82		3.76	
Copper	ug/g	0.965	11.8		10.3 D		10.3		9.18		29.5	
Iron	ug/g	3.680	6480		4150 D		6560		4130 G		10100	
Lead	ug/g		N/A		N/A		N/A		N/A		20.8	
Magnesium	ug/g	100.000	8300		7060 D		6510 G		17500 G		12600 G	
Manganese	ug/g	2.050	523		525 D		294		220		323	
Nickel	ug/g	1.710	10.6		7.79 D		9.33		7.92		22.0	
Potassium	ug/g	100.000	2930		2330 D		984 G		413 G		2220 G	
Sodium	ug/g	100.000	461		427 D		411 G		406 G		455 G	
Thallium	ug/g	6.623	LT 6.62	LT	6.62 D	LT	6.62		10.4	LT	6.62	
Vanadium	ug/g	3.390	11.5		8.67 D		12.1		8.42		17.3	
Zinc	ug/g	8.030	36.4		26.7 D		31.9		31.7		60.2	
Semivolatiles (LM18)												
Laboratory Id Number			STSSA*61		STSSA*62		STSSA*59		STSSA*60		STSSA*66	
Parameter	Units	RL										
Acenaphthene	ug/g	0.036	LT 0.0360	LT	0.0360 D	LT	0.0360	LT	0.0360	LT	0.0360	
Anthracene	ug/g	0.033	LT 0.0330	LT	0.0330 D	LT	0.0330	LT	0.0330	LT	0.0330	
Benzo(a)anthracene	ug/g	0.170	LT 0.170	LT	0.170 D	LT	0.170	LT	0.170	LT	0.170	

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID				SB-37-007A		SB-37-007A		SB-37-008A		SB-37-009A		SB-37-010A
Field Sample Number				SAIC01		SAIC02		SAIC01		SAIC01		SAIC01
Site Type				BORE		BORE		BORE		BORE		BORE
Collection Date				9/24/94		9/24/94		9/24/94		9/24/94		9/24/94
Depth (ft)				0.00		0.00		0.00		0.00		0.00
Associated Field QC Sample - Site Id												
Associated Field QC Sample - Field Sample No.												
Associated Field QC Sample - Site Id												
Associated Field QC Sample - Field Sample No.												
Benzo(a)pyrene	ug/g	0.250	LT	0.250	LT	0.250 D	LT	0.250	LT	0.250	LT	0.250
Benzo(b)fluoranthene	ug/g	0.210	LT	0.210	LT	0.210 D	LT	0.210	LT	0.210	LT	0.210
Benzo(g,h,i)perylene	ug/g	0.250	LT	0.250	LT	0.250 D	LT	0.250	LT	0.250	LT	0.250
Benzo(k)fluoranthene	ug/g	0.066	LT	0.0660	LT	0.0660 D	LT	0.0660	LT	0.0660	LT	0.0660
Chrysene	ug/g	0.120	LT	0.120	LT	0.120 D	LT	0.120	LT	0.120	LT	0.120
Dibenzofuran	ug/g	0.035	LT	0.0350	LT	0.0350 D	LT	0.0350	LT	0.0350	LT	0.0350
Fluoranthene	ug/g	0.068	LT	0.0680	LT	0.0680 D	LT	0.0680	LT	0.0680	LT	0.0680
Fluorene	ug/g	0.033	LT	0.0330	LT	0.0330 D	LT	0.0330	LT	0.0330	LT	0.0330
Indeno(1,2,3-cd)pyrene	ug/g	0.290	LT	0.290	LT	0.290 D	LT	0.290	LT	0.290	LT	0.290
Phenanthrene	ug/g	0.033	LT	0.0330	LT	0.0330 D	LT	0.0330	LT	0.0330	LT	0.0330
Pyrene	ug/g	0.033	LT	0.0330	LT	0.0330 D	LT	0.0330	LT	0.0330	LT	0.0330

Created on: 12/13/00

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-010A	SB-37-010B	TP-37-001A	TP-37-001B	TP-37-001C
Field Sample Number			SAIC01	SAIC02	SAIC01	SAIC02	SAIC03
Site Type			BORE	BORE	BORE	BORE	BORE
Collection Date			9/24/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)			0	3	0.5	1.5	0.5
Associated Field QC Sample - Site ID							
Associated Field QC Sample - Field Sample No.							
Associated Field QC Sample - Site ID							
Associated Field QC Sample - Field Sample No.							
METALS/SOIL/GFAA (µg/g)							
Laboratory ID Number			STSSA*66	STSSA*77	STSSA*78	STSSA*79	STSSA*82
Parameter	Units	CRL					
Arsenic	µg/g	0.25	10**	8.1**	4.2**	9.1**	3.6**
Selenium	µg/g	0.25	LT 0.25**	LT 0.25**	LT 0.25**	LT 0.25**	1.31**
Lead	µg/g	0.177	NF	13**	NF	19**	NF
METALS/SOIL/ICP (µg/g)							
Laboratory ID Number			STSSA*66	STSSA*77	STSSA*78	STSSA*79	STSSA*82
Parameter	Units	CRL					
Aluminum	µg/g	2.95	8680**	16700**	15100**	6990**	10800**
Barium	µg/g	5.18	175**	134**	254**	130**	751**
Beryllium	µg/g	0.5	LT 0.5**	0.807**	0.846**	LT 0.5**	1.16**
Calcium	µg/g	100	92000** G	97000**	61000**	100000**	55600**
Cadmium	µg/g	0.7	LT 0.7**	LT 0.7**	LT 0.7**	LT 0.7**	LT 0.7**
Cobalt	µg/g	1.42	3.76**	5.88**	2.24**	2.93**	2.33**
Chromium	µg/g	4.05	28.9** G	14.1**	18.5**	16.5**	13.1**
Copper	µg/g	0.985	29.5**	12.2**	47.9**	12.7**	19.6**
Iron	µg/g	3.68	10100**	13900**	11500**	8960**	15600**
Lead	µg/g	10.5	20.8**	NF	204**	NF	105**
Potassium	µg/g	100	2220** G	4040**	825**	1630**	601**
Magnesium	µg/g	100	12600** G	11000**	5400**	11200**	11000**
Manganese	µg/g	2.05	323**	374**	178**	248**	77.1**
Sodium	µg/g	100	455** G	676**	2470**	576**	1570**
Nickel	µg/g	1.71	22**	15.6**	11.2**	13.3**	9.22**
Thallium	µg/g	6.623	LT 6.62**	LT 6.62**	LT 6.62**	8.9**	LT 6.62**
Vanadium	µg/g	3.39	17.3**	21.3**	33.8**	16.2**	21.8**
Zinc	µg/g	8.03	60.2**	47.5**	76.9**	43.5**	29.8**
CYANIDE/SOIL/TECHNICON (µg/g)							
Laboratory ID Number			STSSA*66	STSSA*77	STSSA*78	STSSA*79	STSSA*82
Parameter	Units	CRL					
Cyanide	µg/g	0.92	LT 0.92**	LT 0.92**	LT 0.92**	LT 0.92**	1.27**

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID	SB-37-010A	SB-37-010B	TP-37-001A	TP-37-001B	TP-37-001C
Field Sample Number	SAIC01	SAIC02	SAIC01	SAIC02	SAIC03
Site Type	BORE	BORE	BORE	BORE	BORE
Collection Date	9/24/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)	0	3	0.5	1.5	0.5
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					

SEMIVOLATILES/SOIL/GCMS (µg/g)

Laboratory ID Number			STSSA*66	STSSA*77	STSSA*78	STSSA*79	STSSA*82
Parameter	Units	CRL					
2-Methylnaphthalene	µg/g	0.049	LT 0.049**	LT 0.049**	LT 0.049**	LT 0.049**	LT 0.049**
Acenaphthene	µg/g	0.036	LT 0.036**	LT 0.036**	LT 0.036**	LT 0.036**	LT 0.036**
Anthracene	µg/g	0.033	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**
Benzo(a)anthracene	µg/g	0.17	LT 0.17**	LT 0.17**	LT 0.17**	LT 0.17**	LT 0.17**
Benzo(a)pyrene	µg/g	0.25	LT 0.25**	LT 0.25**	LT 0.25**	LT 0.25**	LT 0.25**
Benzo(b)fluoranthene	µg/g	0.21	LT 0.21**	LT 0.21**	LT 0.21**	LT 0.21**	LT 0.21**
Benzo(g,h,i)perylene	µg/g	0.25	LT 0.25**	LT 0.25**	LT 0.25**	LT 0.25**	LT 0.25**
Benzo(k)fluoranthene	µg/g	0.066	LT 0.066**	LT 0.066**	LT 0.066**	LT 0.066**	LT 0.066**
Chrysene	µg/g	0.12	LT 0.12**	LT 0.12**	LT 0.12**	LT 0.12**	LT 0.12**
Dibenzofuran	µg/g	0.035	LT 0.035**	LT 0.035**	LT 0.035**	LT 0.035**	LT 0.035**
di-N-Butyl Phthalate	µg/g	0.061	LT 0.061**	LT 0.061**	LT 0.061**	LT 0.061**	LT 0.061**
Fluoranthene	µg/g	0.068	LT 0.068**	LT 0.068**	LT 0.068**	LT 0.068**	LT 0.068**
Fluorene	µg/g	0.033	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**
Indeno(1,2,3-cd)pyrene	µg/g	0.29	LT 0.29**	LT 0.29**	LT 0.29**	LT 0.29**	LT 0.29**
Naphthalene	µg/g	0.037	LT 0.037**	LT 0.037**	LT 0.037**	LT 0.037**	0.066**
Phenanthrene	µg/g	0.033	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**
Pyrene	µg/g	0.033	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**	LT 0.033**
TICs	µg/g		4 (2.1)	1 (4.0)	1 (1.0)	2 (2.0)	3 (2.4)

EXPLOSIVES/SOIL/HPLC (µg/g)

Laboratory ID Number			STSSA*66	STSSA*77	STSSA*78	STSSA*79	STSSA*82
Parameter	Units	CRL					
1,3,5-Trinitrobenzene	µg/g	0.488	LT 0.488**	LT 0.488**	LT 0.488**	LT 0.488**	LT 0.488**
1,3-Dinitrobenzene	µg/g	0.496	LT 0.496**	LT 0.496**	LT 0.496**	LT 0.496**	LT 0.496**
2,4,6-Trinitrotoluene	µg/g	0.456	LT 0.456**	LT 0.456**	LT 0.456**	LT 0.456**	LT 0.456**
2,4-Dinitrotoluene	µg/g	0.424	LT 0.424**	LT 0.424**	LT 0.424**	LT 0.424**	LT 0.424**
2,6-Dinitrotoluene	µg/g	0.524	LT 0.524**	LT 0.524**	LT 0.524**	LT 0.524**	LT 0.524**
Cyclotetramethylenetetranitra	µg/g	0.666	LT 0.666**	LT 0.666**	LT 0.666**	LT 0.666**	LT 0.666**
Nitrobenzene	µg/g	2.41	LT 2.41**	LT 2.41**	LT 2.41**	LT 2.41**	LT 2.41**
Hexahydro-1,3,5-trinitro-1,3,	µg/g	0.587	LT 0.587**	LT 0.587**	LT 0.587**	LT 0.587**	LT 0.587**
N-Methyl-N,2,4,6-tetranitroan	µg/g	0.731	LT 0.731**	LT 0.731**	LT 0.731**	LT 0.731**	LT 0.731**

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			TP-37-001D	TP-37-002A	TP-37-002B	TP-37-002C	TP-37-002D
Field Sample Number			SAIC04	SAIC01	SAIC02	SAIC03	SAIC04
Site Type			BORE	BORE	BORE	BORE	BORE
Collection Date			10/4/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)			1.2	0.5	1	0.5	1
Associated Field QC Sample - Site ID							
Associated Field QC Sample - Field Sample No.							
Associated Field QC Sample - Site ID							
Associated Field QC Sample - Field Sample No.							
METALS/SOIL/GFAA (µg/g)							
Laboratory ID Number			STSSA*83	STSSA*84	STSSA*85	STSSA*86	STSSA*87
Parameter	Units	CRL					
Arsenic	µg/g	0.25	12**	5.2**	10**	9.3**	9.6**
Selenium	µg/g	0.25 LT	0.25**	0.369**	0.642**	1.1**	LT 0.25**
Lead	µg/g	0.177	16**	NF	NF	NF	15**
METALS/SOIL/ICP (µg/g)							
Laboratory ID Number			STSSA*83	STSSA*84	STSSA*85	STSSA*86	STSSA*87
Parameter	Units	CRL					
Aluminum	µg/g	2.35	5300**	7210**	6990**	4800**	4440**
Barium	µg/g	5.18	79.5**	288**	256**	178**	92.9**
Beryllium	µg/g	0.5 LT	0.5**	0.5** LT	0.5** LT	0.5** LT	0.5** LT
Calcium	µg/g	100	82000**	73000**	100000**	110000**	120000**
Cadmium	µg/g	0.7 LT	0.7**	0.7** LT	1.44** LT	0.7** LT	0.7** LT
Cobalt	µg/g	1.42	3.4**	3.22**	3.57**	2.33**	2.78**
Chromium	µg/g	4.05	10.7**	23.6**	43**	17.4**	11.9**
Copper	µg/g	0.985	9.35**	22.2**	24.4**	19.4**	10.5**
Iron	µg/g	3.68	8870**	10400**	8990**	7760**	7540**
Lead	µg/g	10.5	NF	46.3**	20.4**	47**	NF
Potassium	µg/g	100	1330**	1170**	1540**	794**	972**
Magnesium	µg/g	100	11700**	9620**	9900**	9210**	16200**
Manganese	µg/g	2.05	303**	239**	261**	216**	345**
Sodium	µg/g	100	497**	798**	558**	584**	415**
Nickel	µg/g	1.71	15.5**	11.8**	14.9**	11.3**	11.4**
Thallium	µg/g	6.823	10**	6.62** LT	6.62** LT	6.62**	11.4**
Vanadium	µg/g	3.39	16.3**	17.9**	16**	13.3**	12.8**
Zinc	µg/g	8.03	50.5**	45.4**	51.9**	43.5**	38.5**
CYANIDE/SOIL/TECHNICON (µg/g)							
Laboratory ID Number			STSSA*83	STSSA*84	STSSA*85	STSSA*86	STSSA*87
Parameter	Units	CRL					
Cyanide	µg/g	0.92 LT	0.92**	0.92** LT	0.92** LT	0.92** LT	3.7** LT

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID	TP-37-001D	TP-37-002A	TP-37-002B	TP-37-002C	TP-37-002D
Field Sample Number	SAIC04	SAIC01	SAIC02	SAIC03	SAIC04
Site Type	BORE	BORE	BORE	BORE	BORE
Collection Date	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)	1.2	0.5	1	0.5	1
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					

SEMIVOLATILES/SOIL/GCMS (µg/g)

Laboratory ID Number			STSSA*83		STSSA*84		STSSA*85		STSSA*86		STSSA*87	
Parameter	Units	CRL										
2-Methylnaphthalene	µg/g	0.049	LT	0.049**		0.071**	LT	0.049**	LT	0.049**	LT	0.049**
Acenaphthene	µg/g	0.036	LT	0.036**	LT	0.036**	LT	0.036**	LT	0.036**	LT	0.036**
Anthracene	µg/g	0.033	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**
Benzo(a)anthracene	µg/g	0.17	LT	0.17**	LT	0.17**	LT	0.17**	LT	0.17**	LT	0.17**
Benzo(a)pyrene	µg/g	0.25	LT	0.25**	LT	0.25**	LT	0.25**	LT	0.25**	LT	0.25**
Benzo(b)fluoranthene	µg/g	0.21	LT	0.21**	LT	0.21**	LT	0.21**	LT	0.21**	LT	0.21**
Benzo(g,h,i)perylene	µg/g	0.25	LT	0.25**	LT	0.25**	LT	0.25**	LT	0.25**	LT	0.25**
Benzo(k)fluoranthene	µg/g	0.066	LT	0.066**	LT	0.066**	LT	0.066**		0.077**	LT	0.066**
Chrysene	µg/g	0.12	LT	0.12**	LT	0.12**	LT	0.12**	LT	0.12**	LT	0.12**
Dibenzofuran	µg/g	0.035	LT	0.035**	LT	0.035**	LT	0.035**	LT	0.035**	LT	0.035**
di-N-Butyl Phthalate	µg/g	0.061	LT	0.061**	LT	0.061**	LT	0.061**	LT	0.061**	LT	0.061**
Fluoranthene	µg/g	0.066	LT	0.066**	LT	0.066**	LT	0.066**	LT	0.066**	LT	0.066**
Fluorene	µg/g	0.033	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**
Indeno(1,2,3-cd)pyrene	µg/g	0.29	LT	0.29**	LT	0.29**	LT	0.29**	LT	0.29**	LT	0.29**
Naphthalene	µg/g	0.037	LT	0.037**		0.054**	LT	0.037**	LT	0.037**	LT	0.037**
Phenanthrene	µg/g	0.033	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**	LT	0.033**
Pyrene	µg/g	0.033	LT	0.033**	LT	0.033**		0.05**	LT	0.033**	LT	0.033**
TICs	µg/g			3 (4.3)		4 (2.8)		3 (5.4)		2 (1.7)		1 (0.8)

EXPLOSIVES/SOIL/HPLC (µg/g)

Laboratory ID Number			STSSA*83		STSSA*84		STSSA*85		STSSA*86		STSSA*87	
Parameter	Units	CRL										
1,3,5-Trinitrobenzene	µg/g	0.488	LT	0.488**	LT	0.488**	LT	0.488**	LT	0.488**	LT	0.488**
1,3-Dinitrobenzene	µg/g	0.496	LT	0.496**	LT	0.496**	LT	0.496**	LT	0.496**	LT	0.496**
2,4,6-Trinitrotoluene	µg/g	0.456	LT	0.456**	LT	0.456**	LT	0.456**	LT	0.456**	LT	0.456**
2,4-Dinitrotoluene	µg/g	0.424	LT	0.424**	LT	0.424**	LT	0.424**	LT	0.424**	LT	0.424**
2,6-Dinitrotoluene	µg/g	0.524	LT	0.524**	LT	0.524**	LT	0.524**	LT	0.524**	LT	0.524**
Cyclotetramethylenetetranitra	µg/g	0.666	LT	0.666**	LT	0.666**	LT	0.666**	LT	0.666**	LT	0.666**
Nitrobenzene	µg/g	2.41	LT	2.41**	LT	2.41**	LT	2.41**	LT	2.41**	LT	2.41**
Hexahydro-1,3,5-trinitro-1,3,	µg/g	0.587	LT	0.587**	LT	0.587**	LT	0.587**	LT	0.587**	LT	0.587**
N-Methyl-N,2,4,6-tetranitroan	µg/g	0.731	LT	0.731**	LT	0.731**	LT	0.731**	LT	0.731**	LT	0.731**

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-001B		SB-37-002B		SB-37-003B		SB-37-004B		SB-37-005B		SB-37-006B		SB-37-007B
Field Sample Number			SAIC02		SAIC02		SAIC02		SAIC02		SAIC02		SAIC02		SAIC02
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE
Collection Date			10/4/94		10/4/94		10/4/94		10/4/94		10/4/94		10/4/94		10/4/94
Depth (ft)			3.00		3.00		3.00		3.00		3.00		3.00		3.00
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Metals (JD15)															
Laboratory Id Number			STSSA*67		STSSA*68		STSSA*69		STSSA*70		STSSA*71		STSSA*72		STSSA*74
Parameter	Units	RL													
Selenium	ug/g	0.25	LT 0.250		LT 0.250		LT 0.250		LT 0.250		0.435		LT 0.250		LT 0.250
Metals (JD17)															
Laboratory Id Number			STSSA*67		STSSA*68		STSSA*69		STSSA*70		STSSA*71		STSSA*72		STSSA*74
Parameter	Units	RL													
Lead	ug/g	0.177	15.0		8.57		4.75		11.0		9.73		21.2		13.0
Metals (JD19)															
Laboratory Id Number			STSSA*67		STSSA*68		STSSA*69		STSSA*70		STSSA*71		STSSA*72		STSSA*74
Parameter	Units	RL													
Arsenic	ug/g	0.25	13.0		14.0		17.0		28.0		16.0		49.0		12.0
Metals (JS16)															
Laboratory Id Number			STSSA*67		STSSA*68		STSSA*69		STSSA*70		STSSA*71		STSSA*72		STSSA*74
Parameter	Units	RL													
Aluminum	ug/g	2.350	10200		8390		2530		4740		4110		22300		12200
Barium	ug/g	5.180	315		101		42.5		63.3		77.7		319		147
Beryllium	ug/g	0.500	LT 0.500		LT 0.500		LT 0.500		LT 0.500		LT 0.500		LT 0.500		0.631
Cadmium	ug/g	0.700	1.58		LT 0.700		LT 0.700		LT 0.700		LT 0.700		LT 0.700		LT 0.700
Calcium	ug/g	100.000	89000		140000		160000		140000		170000		550000		79000
Chromium	ug/g	4.050	42.1		11.2		6.52		8.02		8.15		32.3		14.5
Cobalt	ug/g	1.420	4.38		4.35		1.83		3.17		2.92		12.5		5.51
Copper	ug/g	0.965	29.4		8.39		5.97		9.40		37.5		35.8		13.3
Iron	ug/g	3.680	11100		9130		4710		7620		7940		33500		12900
Lead	ug/g		N/A		N/A		N/A		N/A		N/A		N/A		N/A
Magnesium	ug/g	100.000	10800		6590		3110		7340		15600		34100		16400
Manganese	ug/g	2.050	305		249		100		271		238		1020		581
Nickel	ug/g	1.710	20.1		13.3		8.40		12.0		12.6		51.1		17.3
Potassium	ug/g	100.000	1920		1360		496		944		832		4550		3390
Sodium	ug/g	100.000	1800		1160		480		482		484		1760		1010
Thallium	ug/g	6.623	LT 6.62		LT 6.62		LT 6.62		LT 6.62		LT 6.62		LT 6.62		10.7
Vanadium	ug/g	3.390	22.9		18.1		9.49		14.1		14.6		57.6		20.0
Zinc	ug/g	8.030	58.2		33.9		21.9		33.7		53.1		145		56.9

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID	SB-37-001B	SB-37-002B	SB-37-003B	SB-37-004B	SB-37-005B	SB-37-006B	SB-37-007B
Field Sample Number	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02
Site Type	BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Associated Field QC Sample - Site Id							
Associated Field QC Sample - Field Sample No.							
Associated Field QC Sample - Site Id							
Associated Field QC Sample - Field Sample No.							

Semivolatiles (LM18)

Laboratory Id Number			STSSA*67	STSSA*68	STSSA*69	STSSA*70	STSSA*71	STSSA*72	STSSA*74
Parameter	Units	RL							
Pyrene	ug/g	0.033	LT 0.0330	LT 0.0330	LT 0.0330	LT 0.0330	LT 0.0330	LT 0.0330	LT 0.0330
di-N-Butyl Phthalate	ug/g	0.061	LT 0.0610	LT 0.0610	LT 0.0610	LT 0.0610	**0.0830**	LT 0.0610	LT 0.0610

Boolean Codes:
- LT - Less than the certified reporting limit
- ND - Not detected

Footnotes:
- CRL - Certified reporting limits
- ID - Identification
- N/A - Not applicable
- TICs - Tentatively Identified Compound

Created on: 12/13/00

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-008B	SB-37-009B	SB-37-010B	TP-37-001B	TP-37-001D	TP-37-002B	TP-37-002D
Field Sample Number			SAIC02	SAIC02	SAIC02	SAIC02	SAIC04	SAIC02	SAIC04
Site Type			BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date			10/4/94	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94	10/4/94
Depth (ft)			3.00	3.00	3.00	1.50	1.20	1.00	1.00
Associated Field QC Sample - Site Id									
Associated Field QC Sample - Field Sample No.									
Associated Field QC Sample - Site Id									
Associated Field QC Sample - Field Sample No.									
Metals (JD15)									
Laboratory Id Number			STSSA*75	STSSA*76	STSSA*77	STSSA*79	STSSA*83	STSSA*85	STSSA*87
Parameter	Units	RL							
Selenium	ug/g	0.25	LT 0.250	LT 0.250	LT 0.250	LT 0.250	LT 0.250	**0.642**	LT 0.250
Metals (JD17)									
Laboratory Id Number			STSSA*75	STSSA*76	STSSA*77	STSSA*79	STSSA*83		STSSA*87
Parameter	Units	RL							
Lead	ug/g	0.177	**10.3**	**12.0**	**13.0**	**19.0**	**16.0**	N/A	**15.0**
Metals (JD19)									
Laboratory Id Number			STSSA*75	STSSA*76	STSSA*77	STSSA*79	STSSA*83	STSSA*85	STSSA*87
Parameter	Units	RL							
Arsenic	ug/g	0.25	**13.0**	**14.0**	**8.10**	**9.10**	**12.0**	**10.0**	**9.60**
Metals (JS16)									
Laboratory Id Number			STSSA*75	STSSA*76	STSSA*77	STSSA*79	STSSA*83	STSSA*85	STSSA*87
Parameter	Units	RL							
Aluminum	ug/g	2.350	**9890**	**7680**	**16700**	**6990**	**5300**	**6990**	**4440**
Barium	ug/g	5.180	**121**	**74.9**	**134**	**130**	**79.5**	**258**	**92.9**
Beryllium	ug/g	0.500	LT 0.500	LT 0.500	**0.807**	LT 0.500	LT 0.500	LT 0.500	LT 0.500
Cadmium	ug/g	0.700	LT 0.700	LT 0.700	LT 0.700	LT 0.700	LT 0.700	**1.44**	LT 0.700
Calcium	ug/g	100.000	**65000**	**130000**	**97000**	**100000**	**82000**	**100000**	**120000**
Chromium	ug/g	4.050	**10.8**	**9.39**	**14.1**	**16.5**	**10.7**	**43.0**	**11.9**
Cobalt	ug/g	1.420	**5.17**	**3.58**	**5.68**	**2.93**	**3.40**	**3.57**	**2.78**
Copper	ug/g	0.965	**9.67**	**9.40**	**12.2**	**12.7**	**9.35**	**24.4**	**10.5**
Iron	ug/g	3.680	**11400**	**9550**	**13900**	**8960**	**8870**	**8990**	**7540**
Lead	ug/g		N/A	N/A	N/A	N/A	N/A	**20.4**	N/A
Magnesium	ug/g	100.000	**6990**	**16100**	**11000**	**11200**	**11700**	**9900**	**16200**
Manganese	ug/g	2.050	**330**	**302**	**374**	**248**	**303**	**261**	**345**
Nickel	ug/g	1.710	**14.2**	**12.2**	**15.6**	**13.3**	**15.5**	**14.9**	**11.4**
Potassium	ug/g	100.000	**1910**	**1840**	**4040**	**1630**	**1330**	**1540**	**972**
Sodium	ug/g	100.000	**590**	**490**	**676**	**576**	**497**	**558**	**415**
Thallium	ug/g	6.623	LT 6.62	LT 6.62	LT 6.62	**8.90**	**10.0**	LT 6.62	**11.4**
Vanadium	ug/g	3.390	**20.6**	**16.4**	**21.3**	**16.2**	**16.3**	**16.0**	**12.8**
Zinc	ug/g	8.030	**38.4**	**39.1**	**47.5**	**43.5**	**50.5**	**51.9**	**38.5**

Table 10-5. Data Summary Table: Soil - SWMU 37 - Pit Floor (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-008B		SB-37-009B		SB-37-010B		TP-37-001B		TP-37-001D		TP-37-002B		TP-37-002D
Field Sample Number			SAIC02		SAIC02		SAIC02		SAIC02		SAIC04		SAIC02		SAIC04
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE
Collection Date			10/4/94		10/4/94		10/4/94		10/4/94		10/4/94		10/4/94		10/4/94
Depth (ft)			3.00		3.00		3.00		1.50		1.20		1.00		1.00
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Associated Field QC Sample - Site Id															
Associated Field QC Sample - Field Sample No.															
Semivolatiles (LM18)															
Laboratory Id Number			STSSA*75		STSSA*76		STSSA*77		STSSA*79		STSSA*83		STSSA*85		STSSA*87
Parameter	Units	RL													
Pyrene	ug/g	0.033	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330	LT	0.0330		0.0500	LT	0.0330
di-N-Butyl Phthalate	ug/g	0.061	LT	0.0610	LT	0.0610	LT	0.0610	LT	0.0610	LT	0.0610	LT	0.0610	LT	0.0610

Created on: 12/13/00

Table 10-6. Summary of Chemicals Detected in Soils at SWMU 37 - Pit Floor
Deseret Chemical Depot, DCD, Tooele, Utah

Chemical	Units	Proportion of Detects All Samples[a]	Detects Minimum	Detects Maximum	95% UTL of Background Data Set		Proportion of Detected Results Greater Than Background UTL	Maximum Concentration Location	Maximum Concentration Depth	COPC?
Surface Soils										
Inorganics										
Aluminum	ug/g	8 / 10	4,270	19,800	24,256		0 / 8	SB-37-006A	0	No
Arsenic	ug/g	10 / 10	3.4	12	3.4	*	0 / 10	SB-37-005A	0	No
Barium	ug/g	10 / 10	44	181	423		0 / 10	SB-37-006A	0	No
Beryllium	ug/g	4 / 10	0.57	1.0	1.2		0 / 4	SB-37-006A	0	No
Cadmium	ug/g	4 / 10	1.1	1.4	21		0 / 4	SB-37-006A	0	No
Calcium	ug/g	6 / 10	49,900	120,000	250,000		0 / 6	SB-37-004A	0	No
Chromium	ug/g	6 / 10	6.8	23	56		0 / 6	SB-37-006A	0	No
Cobalt	ug/g	10 / 10	1.8	6.5	10		0 / 10	SB-37-005A	0	No
Copper	ug/g	10 / 10	9.2	30	162		0 / 10	SB-37-010A	0	No
Iron	ug/g	9 / 10	6,420	18,200	21,340		0 / 9	SB-37-006A	0	No
Lead	ug/g	10 / 10	11	34	401		0 / 10	SB-37-004A	0	No
Magnesium	ug/g	6 / 10	8,300	14,000	35,700		0 / 6	SB-37-006A	0	No
Manganese	ug/g	10 / 10	220	532	649		0 / 10	SB-37-004A	0	No
Nickel	ug/g	10 / 10	7.9	23	33		0 / 10	SB-37-005A	0	No
Potassium	ug/g	6 / 10	1,320	5,780	6,751		0 / 6	SB-37-006A	0	No
Sodium	ug/g	6 / 10	461	789	5,610		0 / 6	SB-37-004A	0	No
Thallium	ug/g	4 / 10	10	13	34		0 / 4	SB-37-004A	0	No
Vanadium	ug/g	10 / 10	8.4	28	55		0 / 10	SB-37-006A	0	No
Zinc	ug/g	10 / 10	32	100	385		0 / 10	SB-37-006A	0	No
Organics										
Acenaphthene	ug/g	1 / 10	0.22	0.22	0.0		1 / 1	SB-37-006A	0	Yes
Anthracene	ug/g	1 / 10	0.24	0.24	0.0		1 / 1	SB-37-006A	0	Yes
Benzo(a)anthracene	ug/g	1 / 10	0.70	0.70	0.0		1 / 1	SB-37-006A	0	Yes
Benzo(a)pyrene	ug/g	1 / 10	0.59	0.59	0.0		1 / 1	SB-37-006A	0	Yes
Benzo(b)fluoranthene	ug/g	1 / 10	0.65	0.65	0.0		1 / 1	SB-37-006A	0	Yes
Benzo(g,h,i)perylene	ug/g	1 / 10	0.32	0.32	0.0		1 / 1	SB-37-006A	0	Yes
Benzo(k)fluoranthene	ug/g	1 / 10	0.42	0.42	0.0		1 / 1	SB-37-006A	0	Yes
Chrysene	ug/g	1 / 10	0.96	0.96	0.0		1 / 1	SB-37-006A	0	Yes
Dibenzofuran	ug/g	1 / 10	0.064	0.064	0.0		1 / 1	SB-37-006A	0	Yes
Fluoranthene	ug/g	1 / 10	1.8	1.8	0.0		1 / 1	SB-37-006A	0	Yes
Fluorene	ug/g	1 / 10	0.14	0.14	0.0		1 / 1	SB-37-006A	0	Yes
Indeno(1,2,3-cd)pyrene	ug/g	1 / 10	0.31	0.31	0.0		1 / 1	SB-37-006A	0	Yes
Phenanthrene	ug/g	1 / 10	1.00	1.00	0.0		1 / 1	SB-37-006A	0	Yes
Pyrene	ug/g	1 / 10	1.6	1.6	0.0		1 / 1	SB-37-006A	0	Yes
Subsurface Soils										
Inorganics										
Aluminum	ug/g	14 / 14	2,530	22,300	24,256		0 / 14	SB-37-006B	3	No
Arsenic	ug/g	14 / 14	8.1	49	3.4	*	1 / 14	SB-37-006B	3	Yes
Barium	ug/g	14 / 14	43	319	423		0 / 14	SB-37-006B	3	No
Beryllium	ug/g	2 / 14	0.63	0.81	1.2		0 / 2	SB-37-010B	3	No
Cadmium	ug/g	2 / 14	1.4	1.6	21		0 / 2	SB-37-001B	3	No
Calcium	ug/g	14 / 14	65,000	550,000	250,000		1 / 14	SB-37-006B	3	Yes
Chromium	ug/g	14 / 14	6.5	43	56		0 / 14	TP-37-002B	1	No
Cobalt	ug/g	14 / 14	1.8	13	10		1 / 14	SB-37-006B	3	No
Copper	ug/g	14 / 14	6.0	38	162		0 / 14	SB-37-005B	3	No
Iron	ug/g	14 / 14	4,710	33,500	21,340		1 / 14	SB-37-006B	3	No
Lead	ug/g	14 / 14	4.8	21	401		0 / 14	SB-37-006B	3	No
Magnesium	ug/g	14 / 14	3,110	34,100	35,700		0 / 14	SB-37-006B	3	No
Manganese	ug/g	14 / 14	100	1,020	649		1 / 14	SB-37-006B	3	No
Nickel	ug/g	14 / 14	8.4	51	33		1 / 14	SB-37-006B	3	No
Potassium	ug/g	14 / 14	496	4,550	6,751		0 / 14	SB-37-006B	3	No
Selenium	ug/g	2 / 14	0.44	0.64	2.9		0 / 2	TP-37-002B	1	No
Sodium	ug/g	14 / 14	415	1,800	5,610		0 / 14	SB-37-001B	3	No
Thallium	ug/g	4 / 14	8.9	11	34		0 / 4	TP-37-002B	1	No
Vanadium	ug/g	14 / 14	9.5	58	55		1 / 14	SB-37-006B	3	No
Zinc	ug/g	14 / 14	22	145	385		0 / 14	SB-37-006B	3	No
Organics										
Pyrene	ug/g	1 / 14	0.050	0.050	0.0		1 / 1	TP-37-002B	1	Yes
di-N-Butyl Phthalate	ug/g	1 / 14	0.083	0.083	0.0		1 / 1	SB-37-005B	3	Yes

* 95% UTL is presented in log-space. In order to conduct an accurate comparison, take the natural log of the maximum concentration before comparing to the 95% UTL.

[a] For the proportion of detects, counts were based on the unaveraged data set.

[1] Surface samples are collected within the range of 0 to 0.5 feet BLS.

[2] Subsurface samples are collected within the range of >0.5 feet BLS.

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-11		SB-37-11		SB-37-12	SB-37-13	SB-37-14	SB-37-15	SB-37-15
Field Sample Number			SAIC01		SAIC01D		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01D
Site Type			BORE		BORE		BORE	BORE	BORE	BORE	BORE
Collection Date			2/17/99		2/17/99		2/17/99	2/17/99	2/17/99	2/17/99	2/17/99
Depth (ft)			0.00		0.00		0.00	0.00	0.00	0.00	0.00
Associated Field QC Sample - Site Id											
Associated Field QC Sample - Field Sample No.											
Associated Field QC Sample - Site Id											
Associated Field QC Sample - Field Sample No.											
Explosives (8330)											
Laboratory Id Number			99U00279		99U00280		99U00281	99U00282	99U00283	99U00284	99U00285
Parameter	Units	RL									
2,4,6-Trinitrotoluene	ug/g	0.2	LT 0.200		LT 0.200 D		LT 0.200	LT 0.200	LT 0.200	LT 0.200	LT 0.200 D
Metals (6010)											
Laboratory Id Number			99U00279		99U00280		99U00281	99U00282	99U00283	99U00284	99U00285
Parameter	Units	RL									
Aluminum	ug/g	20	35400		37700 D		15800	14700	12400	18500	21300 D
Antimony	ug/g	7	18.4		8.87 D	LT	6.00	8.78	LT 6.00	LT 6.00	LT 6.00 D
Arsenic	ug/g	0.5	15.8		15.9 D		12.7	11.6	13.0	18.7	9.58 D
Barium	ug/g	2	3880		5480 D		680	409	294	464	441 D
Beryllium	ug/g	0.5	LT 0.500		LT 0.500 D		0.630	0.660	0.574	0.827	0.935 D
Cadmium	ug/g	0.2	8.70		5.41 D		1.74	1.38	2.44	0.777	0.643 D
Calcium	ug/g	10	30600		32000 D		75100	81000	87400	64800	58600 D
Chromium	ug/g	1	58.5		58.2 D		21.4	23.6	19.0	23.6	25.9 D
Cobalt	ug/g	5	37.0		35.8 D		13.8	9.09	12.1	12.5	9.79 D
Copper	ug/g	2	2690		2800 D		225	198	159	120	114 D
Iron	ug/g	5	158000		145000 D		41200	24300	34700	37800	27600 D
Lead	ug/g	0.3	118		121 D		90.4	44.2	57.3	25.9	26.0 D
Magnesium	ug/g	10	7410		7410 D		16900	14300	14400	13100	13700 D
Manganese	ug/g	1	958		867 D		469	395	421	580	569 D
Nickel	ug/g	4	153		174 D		31.6	27.7	23.3	24.5	22.0 D
Potassium	ug/g	300	1810		1830 D		3420	3600	3010	6130	6910 D
Silver	ug/g	1	82.1		268 D	LT	10.0	LT 10.0	LT 10.0	LT 10.0	LT 10.0 D
Sodium	ug/g	20	146		144 D		333	302	238	407	466 D
Thallium	ug/g	1	3.15		2.30 D	LT	1.00	LT 1.00	LT 1.00	LT 1.00	LT 1.00 D
Vanadium	ug/g	5	LT 5.00		LT 5.00 D		21.9	22.9	19.8	25.4	30.3 D
Zinc	ug/g	2	113		110 D		192	133	142	90.3	87.6 D
Metals (7471)											
Laboratory Id Number			99U00279		99U00280		99U00281	99U00282	99U00283	99U00284	99U00285
Parameter	Units	RL									
Mercury	ug/g	0.0500	0.0555	U	LT 0.0500 D		LT 0.0500	LT 0.0500	LT 0.0500	LT 0.0500	LT 0.0500 D

Boolean Codes:
- LT - Less than the certified reporting limit
- ND - Not detected

Footnotes:
- CRL - Certified reporting limits
- ID - Identification
- N/A - Not applicable
- TICs - Tentatively Identified Compound

Flagging Codes:
- D - Duplicate analysis.
- J - Value is estimated.
- P - Results less than reporting limit but greater than instrumental detecti
- R - Non-target compound analyzed for but not detected (GC/MS methods).

Qualifiers.
- J - Analyte was positively identified; the associated numerical value is th
- R - Sample result is rejected due to serious deficiencies in the ability to
- U - Analyte was analyzed for, but was not detected above the reported sampl

Created on 12/13/00

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-16		SB-37-17		SB-37-18		SB-37-18		SB-37-19		SB-37-20		SB-37-20	
Field Sample Number			SAIC01		SAIC01		SAIC01		SAIC04D		SAIC01		SAIC01		SAIC01D	
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE	
Collection Date			2/17/99		2/17/99		2/17/99		1/26/00		2/17/99		2/17/99		2/17/99	
Depth (ft)			0.00		0.00		0.00		0.00		0.00		0.00		0.00	
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Explosives (8330)																
Laboratory Id Number			99U00286		99U00432		99U00288				99U00289		99U00290		99U00291	
Parameter	Units	RL														
2,4,6-Trinitrotoluene	ug/g	0.2	LT 0.200		LT 0.200		0.534		N/A		LT 0.200		LT 0.200		LT 0.200	D
Metals (6010)																
Laboratory Id Number			99U00286		99U00432		99U00288		00U00458		99U00289		99U00290		99U00291	
Parameter	Units	RL														
Aluminum	ug/g	20	18200		18700		18600		4850	D	23000		24000		28600	D
Antimony	ug/g	7	LT 6.00		LT 6.00	R	LT 6.00		LT 7.00	DR	LT 6.00		8.25		7.90	D
Arsenic	ug/g	0.5	14.4		12.0		8.30		10.8	D	12.6		14.6		14.0	D
Barium	ug/g	2	336		647	J	1460		134	D	3850		6800		11200	D
Beryllium	ug/g	0.5	0.772		0.741		0.752		0.305	JPD	LT 0.500		LT 0.500		LT 0.500	D
Cadmium	ug/g	0.2	1.14		0.865		0.457		0.568	D	11.5		6.44		4.28	D
Calcium	ug/g	10	60300		70500		70900		179000	D	53100		43300		41200	D
Chromium	ug/g	1	26.5		33.8	J	26.0		11.2	D	33.4		108		230	D
Cobalt	ug/g	5	20.2		5.87		13.7	LT	5.00	D	17.1		29.7		29.8	D
Copper	ug/g	2	190		177	J	308		96.3	D	787		1620		1310	D
Iron	ug/g	5	63200		35800		38100		7020	D	54500		130000		105000	D
Lead	ug/g	0.3	80.1		33.3		748		24.7	DJ	245		715		59.7	D
Magnesium	ug/g	10	12500		16100		23100		11600	D	44000		55100		38800	D
Manganese	ug/g	1	620		521		488		192	D	581		748		792	D
Nickel	ug/g	4	41.5		32.9	J	34.0		12.2	D	54.1		126		106	D
Potassium	ug/g	300	5050		5470		4820		1110	D	3530		2950		3480	D
Silver	ug/g	1	LT 10.0		2.18	LT	10.0		1.61	D	11.9	LT	10.0	LT	10.0	D
Sodium	ug/g	20	419		389		366		394	D	274		213		266	D
Thallium	ug/g	1	LT 1.00		LT 1.00	LT	1.00	LT	1.00	D	LT 1.00		2.55		2.96	D
Vanadium	ug/g	5	22.9		42.1		24.0		13.5	D	16.9		9.57		13.2	D
Zinc	ug/g	2	106		94.6		124		60.8	D	515		651		366	D
Metals (7471)																
Laboratory Id Number			99U00286		99U00432		99U00288		00U00458		99U00289		99U00290		99U00291	
Parameter	Units	RL														
Mercury	ug/g	0.0500	LT 0.0500		LT 0.0500		LT 0.0500	LT	0.0500	D	LT 0.0500		LT 0.0500		LT 0.0500	D

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID				SB-37-21	
Field Sample Number				SAIC01	
Site Type				BORE	
Collection Date				2/23/99	
Depth (ft)				0.00	
Associated Field QC Sample - Site Id					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site Id					
Associated Field QC Sample - Field Sample No.					
Explosives (8330)					
Laboratory Id Number				99U00420	
Parameter	Units	RL			
2,4,6-Trinitrotoluene	ug/g	0.2	LT	0.200	
Metals (6010)					
Laboratory Id Number				99U00420	
Parameter	Units	RL			
Aluminum	ug/g	20		**18600**	
Antimony	ug/g	7	LT	6.00	R
Arsenic	ug/g	0.5		**11.3**	
Barium	ug/g	2		**1100**	J
Beryllium	ug/g	0.5		**0.673**	
Cadmium	ug/g	0.2		**1.37**	
Calcium	ug/g	10		**65800**	
Chromium	ug/g	1		**31.0**	J
Cobalt	ug/g	5	LT	5.00	
Copper	ug/g	2		**316**	J
Iron	ug/g	5		**27300**	
Lead	ug/g	0.3		**62.6**	
Magnesium	ug/g	10		**19300**	
Manganese	ug/g	1		**477**	
Nickel	ug/g	4		**25.8**	J
Potassium	ug/g	300		**4370**	
Silver	ug/g	1		**13.6**	
Sodium	ug/g	20		**286**	
Thallium	ug/g	1		**1.42**	
Vanadium	ug/g	5		**35.4**	
Zinc	ug/g	2		**127**	
Metals (7471)					
Laboratory Id Number				99U00420	
Parameter	Units	RL			
Mercury	ug/g	0.0500	LT	0.0500	

Created on: 12/13/00

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-11		SB-37-11		SB-37-11		SB-37-12		SB-37-12		SB-37-12		SB-37-12	
Field Sample Number			SAIC02		SAIC03		SAIC03D		SAIC02		SAIC03		SAIC04		SAIC05	
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE	
Collection Date			2/22/99		2/22/99		2/22/99		2/22/99		2/23/99		1/26/00		1/26/00	
Depth (ft)			1.00		5.00		5.00		1.00		5.00		10.00		15.00	
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Metals (6010)																
Laboratory Id Number			99U00344		99U00345		99U00346		99U00347		99U00410		00U00453		00U00454	
Parameter	Units	RL														
Aluminum	ug/g	20	**63400**		**57100**		**42300** D		**18800**		**18400**		**5440**		**5720**	
Antimony	ug/g	7	**10.3**	LT	6.00	LT	**16.9** D	LT	6.00	LT	6.00	R LT	7.00	LT	7.00	R
Arsenic	ug/g	0.5	**25.6**		**15.8**		**16.8** D		**20.5**		**1.32**		**7.08**		**6.80**	
Barium	ug/g	2	**6910**		**3770**		**2960** D		**2300**		**2430**	J	**87.9**		**73.2**	
Beryllium	ug/g	0.5	LT 0.500	LT	0.500	LT	0.500 D	LT	0.500	LT	0.500		**0.535** JP		**0.331**	JP
Cadmium	ug/g	0.2	**20.8**		**6.68**		**5.55** D		**37.4**	LT	0.200		**0.483**		**0.729**	
Calcium	ug/g	10	**1900**		**43000**		**51300** D		**44400**		**79200**		**177000**		**158000**	
Chromium	ug/g	1	**103**		**58.9**		**54.1** D		**33.6**		**4.84**	J	**9.96**		**11.6**	
Cobalt	ug/g	5	**63.1**		**32.6**		**32.0** D		**43.2**	LT	5.00		**2.65** JP		**3.05**	JP
Copper	ug/g	2	**7190**		**3850**		**3440** D		**1280**		**1140**	J	**25.0**		**16.0**	
Iron	ug/g	5	**296000**		**144000**		**127000** D		**197000**		**1610**		**8740**		**7550**	
Lead	ug/g	0.3	**441**		**141**		**127** D		**421**		**963**		**17.1** J		**11.5**	
Magnesium	ug/g	10	**3050**		**5680**		**7420** D		**33500**		**268000**		**12800**		**8830**	
Manganese	ug/g	1	**1430**		**889**		**823** D		**1040**		**189**		**187**		**200**	
Nickel	ug/g	4	**374**		**208**		**188** D		**87.3**		**8.54**	J	**12.5**		**11.8**	
Potassium	ug/g	300	LT 300		**1840**		**2480** D		**2450**	LT	300		**1030**		**1120**	
Selenium	ug/g	0.5	LT 2.50	LT	2.50	LT	2.50 D	LT	2.50	LT	0.500	LT	0.500	LT	0.500	
Silver	ug/g	1	**310**		**153**		**114** D	LT	10.0		**25.8**	LT	1.00	LT	1.00	
Sodium	ug/g	20	**29.2**		**352**		**429** D		**580**		**57.8**		**718**		**873**	
Thallium	ug/g	1	**10.3**		**4.34**		**3.10** D		**7.62**	LT	1.00		**0.455** JP	LT	1.00	
Vanadium	ug/g	5	LT 5.00	LT	5.00		**7.35** D	LT	5.00	LT	5.00		**14.2**		**16.5**	
Zinc	ug/g	2	**700**		**164**		**153** D		**1770**		**43.2**		**48.7**		**45.8**	
Metals (7471)																
Laboratory Id Number			99U00344		99U00345		99U00346		99U00347		99U00410		00U00453		00U00454	
Parameter	Units	RL														
Mercury	ug/g	0.0500	LT 0.0500	LT	0.0500		**0.0535** DJP	LT	0.0500	LT	0.0500		**0.0597**	LT	0.0500	

Boolean Codes:
- LT - Less than the certified reporting limit
- ND - Not detected

Footnotes:
- CRL - Certified reporting limits
- ID - Identification
- N/A - Not applicable
- TICs - Tentatively Identified Compound

Flagging Codes:
- D - Duplicate analysis.
- J - Value is estimated.
- P - Results less than reporting limit but greater than instrumental detecti
- R - Non-target compound analyzed for but not detected (GC/MS methods).

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-13		SB-37-13		SB-37-14		SB-37-14		SB-37-15		SB-37-15		SB-37-15	
Field Sample Number			SAIC02		SAIC03		SAIC02		SAIC03		SAIC02		SAIC03		SAIC03D	
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE	
Collection Date			2/22/99		2/23/99		2/22/99		2/23/99		2/22/99		2/23/99		2/23/99	
Depth (ft)			1.00		5.00		1.00		5.00		1.00		6.50		6.50	
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Metals (6010)																
Laboratory Id Number			99U00348		99U00411		99U00349		99U00412		99U00423		99U00413		99U00414	
Parameter	Units	RL														
Aluminum	ug/g	20	11900		10600		16800		9680		17100		94200		23200 D	
Antimony	ug/g	7	6.86	LT	6.00	R	LT 6.00		LT 6.00	R	LT 6.00	R	12.5	J	LT 6.00 D	R
Arsenic	ug/g	0.5	13.8		8.12		13.7		13.1		12.9		21.6		36.7 D	
Barium	ug/g	2	283		195	J	310		149	J	502	J	14000	J	17600 D	J
Beryllium	ug/g	0.5	LT 0.500	LT	0.500		0.646	LT	0.500		0.615	LT	0.500	LT	0.500 D	
Cadmium	ug/g	0.2	1.02		0.753		3.13		0.689		3.03		4.02		6.14 D	
Calcium	ug/g	10	131000		148000		79100		126000		45900		8710		7820 D	
Chromium	ug/g	1	21.4		18.2	J	33.0		14.8	J	45.8	J	119	J	161 D	J
Cobalt	ug/g	5	6.04	LT	5.00		15.4	LT	5.00		9.94		19.3		26.4 D	
Copper	ug/g	2	56.1		79.8	J	231		33.2	J	383	J	9000	J	2240 D	J
Iron	ug/g	5	15800		14400		44500		11700		166000		151000		230000 D	
Lead	ug/g	0.3	32.6		26.2		808		17.6		47.8		134		70.6 D	
Magnesium	ug/g	10	12400		10500		16700		9230		11400		90600		76800 D	
Manganese	ug/g	1	291		261		449		261		878		2290		1620 D	
Nickel	ug/g	4	22.1		13.8	J	67.7		12.4	J	58.8	J	283	J	172 D	J
Potassium	ug/g	300	2470		2350		3440		1930		4480		458	LT	300 D	
Selenium	ug/g	0.5	LT 0.500	LT	0.500	LT	0.500	LT	0.500	LT	2.50	LT	2.50	LT	2.50 D	
Silver	ug/g	1	LT 10.0		1.44	LT	10.0		1.61	LT	2.66		32.8		15.8 D	
Sodium	ug/g	20	306		335		382		485		540		95.0		76.6 D	
Thallium	ug/g	1	LT 1.00	LT	1.00	LT	1.00	LT	1.00		10.8		14.1		16.5 D	
Vanadium	ug/g	5	23.9		25.1		24.3		26.9		37.4		14.0		16.7 D	
Zinc	ug/g	2	76.9		61.2		1360		53.9		166		63.3		49.8 D	
Metals (7471)																
Laboratory Id Number			99U00348		99U00411		99U00349		99U00412		99U00423		99U00413		99U00414	
Parameter	Units	RL														
Mercury	ug/g	0.0500	0.0548	LT	0.0500	LT	0.0500		0.0707	LT	0.0500	LT	0.0500	LT	0.0500 D	

Created on: 12/13/00

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-15		SB-37-15		SB-37-15		SB-37-16		SB-37-16		SB-37-16		SB-37-16	
Field Sample Number			SAIC04		SAIC04D		SAIC05		SAIC02		SAIC03		SAIC04		SAIC05	
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE	
Collection Date			1/25/00		1/25/00		1/25/00		2/22/99		2/23/99		1/25/00		1/25/00	
Depth (ft)			10.00		10.00		15.00		1.00		5.00		10.00		16.00	
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Metals (6010)																
Laboratory Id Number			00U00407		00U00408		00U00409		99U00424		99U00415		00U00410		00U00411	
Parameter	Units	RL														
Aluminum	ug/g	20	27800		48100 D		4170		16600		39400		11900		4190	
Antimony	ug/g	7	LT 7.00	UJ	LT 7.00	DUJ	LT 7.00	UJ	LT 6.00	R	8.84	J	LT 7.00	UJ	LT 7.00	UJ
Arsenic	ug/g	0.5	10.2	J	8.94	DJ	8.74	J	17.1		47.3		8.88	J	10.8	J
Barium	ug/g	2	6710	J	7520	DJ	375	J	460	J	17100	J	1550	J	279	J
Beryllium	ug/g	0.5	0.0568	JP	0.0857	DJP	0.294	JP	0.672	LT	0.500		0.243	JP	0.288	JP
Cadmium	ug/g	0.2	2.92	J	2.05	DJ	0.884	J	0.917		10.8		1.65	J	0.607	J
Calcium	ug/g	10	21300	J	16600	DJ	154000	J	51200		16300		108000	J	173000	J
Chromium	ug/g	1	47.2		79.2	D	11.1		32.2	J	162	J	20.5		10.4	
Cobalt	ug/g	5	13.7		18.6	D	2.55	JP	8.01		46.2		5.53		1.63	JP
Copper	ug/g	2	2280	J	3470	DJ	90.4	J	126	J	3180	J	535	J	44.5	J
Iron	ug/g	5	131000	J	147000	DJ	10100	J	88700		291000		43300	J	7750	J
Lead	ug/g	0.3	155	J	137	DJ	20.1	J	40.0		172		37.4	J	15.1	J
Magnesium	ug/g	10	50800		69800	D	16500		13900		86300		23200		9540	
Manganese	ug/g	1	889	J	2080	DJ	224	J	664		1540		351	J	261	
Nickel	ug/g	4	121	J	209	DJ	14.5	J	38.5	J	308	J	41.0	J	13.4	J
Potassium	ug/g	300	401		507	D	531		4800		827		1150		628	
Selenium	ug/g	0.5	1.46	JP	LT 2.50	D	LT 0.500		LT 2.50	LT	2.50		LT 1.00		LT 0.500	
Silver	ug/g	1	73.4	J	87.8	DJ	4.06	J	2.06		90.3		12.9	J	1.45	J
Sodium	ug/g	20	240	J	383	DJ	353	J	453		471		780	J	333	J
Thallium	ug/g	1	LT 5.00	J	LT 5.00	DUJ	0.851	J	4.12		21.9		LT 2.00	UJ	1.12	J
Vanadium	ug/g	5	9.30		25.9	D	12.1		34.1		17.6		13.7		14.2	
Zinc	ug/g	2	97.0		99.5	D	68.6		82.3		214		170		53.6	
Metals (7471)																
Laboratory Id Number			00U00407		00U00408		00U00409		99U00424		99U00415		00U00410		00U00411	
Parameter	Units	RL														
Mercury	ug/g	0.0500	LT 0.0500		LT 0.0500	D	LT 0.0500		LT 0.0500		LT 0.0500		0.106		LT 0.0500	

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-17			SB-37-17			SB-37-17			SB-37-17			SB-37-18			SB-37-18			SB-37-18	
Field Sample Number			SAIC02			SAIC03			SAIC04			SAIC05			SAIC02			SAIC03			SAIC04	
Site Type			BORE			BORE			BORE			BORE			BORE			BORE			BORE	
Collection Date			2/22/99			2/23/99			1/26/00			1/26/00			2/22/99			2/23/99			1/26/00	
Depth (ft)			1.00			5.00			10.00			15.00			1.00			5.00			10.00	
Associated Field QC Sample - Site Id																						
Associated Field QC Sample - Field Sample No.																						
Associated Field QC Sample - Site Id																						
Associated Field QC Sample - Field Sample No.																						
Metals (6010)																						
Laboratory Id Number			99U00425			99U00416			00U00455			00U00456			99U00426			99U00417			00U00457	
Parameter	Units	RL																				
Aluminum	ug/g	20		14500			99200			6750			5560			23400			18100			5150
Antimony	ug/g	7	LT	6.00	R	LT	6.00	R	LT	7.00		LT	7.00	R	LT	6.00	R	LT	6.00	R	LT	7.00
Arsenic	ug/g	0.5		11.1			14.3			9.41			9.25			11.0			54.4			9.96
Barium	ug/g	2		390	J		8400	J		81.2			206			1340	J		9400	J		409
Beryllium	ug/g	0.5		0.576		LT	0.500			0.354	JP		0.346	JP		0.784		LT	0.500			0.264	JP
Cadmium	ug/g	0.2		0.919			7.75			0.600			0.575			0.358			15.6			0.475
Calcium	ug/g	10		128000			8170			153000			163000			78600			19500			156000
Chromium	ug/g	1		25.9	J		102	J		13.6			11.6			24.6	J		84.3	J		13.3
Cobalt	ug/g	5	LT	5.00			14.1			3.00	JP		1.80	JP	LT	5.00			23.2			2.71	JP
Copper	ug/g	2		162	J		6010	J		17.4			76.5			402	J		1480	J		209
Iron	ug/g	5		33100			227000			7720			18700			19300			391000			18800
Lead	ug/g	0.3		27.0			91.1			8.86	J		18.3			26.5			130			20.1	J
Magnesium	ug/g	10		12300			58800			11800			8890			16100			53600			14800
Manganese	ug/g	1		402			1450			256			261			401			1410			242
Nickel	ug/g	4		26.2	J		254	J		11.9			14.9			35.1	J		166	J		26.5
Potassium	ug/g	300		3620			799			1440			1000			4640			972			910
Selenium	ug/g	0.5	LT	0.500		LT	2.50		LT	0.500		LT	0.500		LT	0.500		LT	2.50		LT	0.500
Silver	ug/g	1		6.66			104		LT	1.00			1.48			1.68			2.82			7.10	JP
Sodium	ug/g	20		368			850			535			278			700			379			326
Thallium	ug/g	1	LT	1.00			15.6			0.484	JP		0.506	JP	LT	1.00			22.7			0.478	JP
Vanadium	ug/g	5		34.4			14.1			17.8			13.7			42.7			12.1			14.3
Zinc	ug/g	2		77.7			135			41.1			44.2			67.2			151			52.9
Metals (7471)																						
Laboratory Id Number			99U00425			99U00416			00U00455			00U00456			99U00426			99U00417			00U00457	
Parameter	Units	RL																				
Mercury	ug/g	0.0500	LT	0.0500		LT	0.0500			0.0514	JP	LT	0.0500		LT	0.0500			0.0735			0.0553

Created on: 12/13/00

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID			SB-37-18		SB-37-19		SB-37-19		SB-37-19		SB-37-20		SB-37-20		SB-37-21	
Field Sample Number			SAIC05		SAIC02		SAIC03		SAIC04		SAIC02		SAIC03		SAIC02	
Site Type			BORE		BORE		BORE		BORE		BORE		BORE		BORE	
Collection Date			1/26/00		2/22/99		2/23/99		1/26/00		2/22/99		2/23/99		2/23/99	
Depth (ft)			15.00		1.00		5.00		10.00		1.00		5.00		1.00	
Associated Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Associated,Field QC Sample - Site Id																
Associated Field QC Sample - Field Sample No.																
Metals (6010)																
Laboratory Id Number			00U00459		99U00427		99U00418		00U00460		99U00428		99U00419		99U00421	
Parameter	Units	RL														
Aluminum	ug/g	20	5140		12900		78800		28500		33700		7240		7950	
Antimony	ug/g	7	LT 7.00	R	11.2	J	LT 6.00	R	LT 7.00		LT 6.00	R	LT 6.00	R	LT 6.00	R
Arsenic	ug/g	0.5	31.7		57.5		26.6		9.83		13.9		7.76		6.58	
Barium	ug/g	2	450		1950	J	14000	J	6780		23100	J	878	J	716	J
Beryllium	ug/g	0.5	0.292	JP	LT 0.500		LT 0.500		0.451	JP	LT 0.500		LT 0.500		LT 0.500	
Cadmium	ug/g	0.2	0.693		21.4		3.63		2.13		5.41		0.561		0.704	
Calcium	ug/g	10	150000		9360		318		47200		20500		177000		198000	
Chromium	ug/g	1	11.5		234	J	153	J	31.9		207	J	26.9	J	16.6	J
Cobalt	ug/g	5	3.21	JP	15.8		34.0		11.2		28.3		LT 5.00		LT 5.00	
Copper	ug/g	2	61.3		12500	J	2250	J	1080		1770	J	101	J	139	J
Iron	ug/g	5	8780		367000		157000		34400		168000		13200		19100	
Lead	ug/g	0.3	20.2		788		260		193	J	52.9		19.5		13.9	
Magnesium	ug/g	10	11500		11900		123000		76600		60400		15000		21500	
Manganese	ug/g	1	269		1380		1260		539		1220		308		247	
Nickel	ug/g	4	14.3		310	J	355	J	54.1		175	J	20.9	J	19.6	J
Potassium	ug/g	300	1070		530		LT 300		2960		809		1130		1450	
Selenium	ug/g	0.5	LT 0.500		LT 2.50		LT 2.50		LT 0.500		LT 2.50		LT 0.500		LT 0.500	
Silver	ug/g	1	LT 1.00		21.8		4.80		21.4		4.65		LT 1.00		1.48	
Sodium	ug/g	20	369		123		LT 20.0		264		86.2		105		145	
Thallium	ug/g	1	LT 1.00		16.1		9.17		0.931	JP	7.93		LT 1.00		1.09	
Vanadium	ug/g	5	15.0		LT 5.00		9.49		25.2		19.1		16.4		16.3	
Zinc	ug/g	2	50.4		1650		160		245		227		56.7		56.1	
Metals (7471)																
Laboratory Id Number			00U00459		99U00427		99U00418		00U00460		99U00428		99U00419		99U00421	
Parameter	Units	RL														
Mercury	ug/g	0.0500	LT 0.0500		LT 0.0500		LT 0.0500		LT 0.0500		LT 0.0500		0.0561		LT 0.0500	

Table 10-7. Data Summary Table: Soil - SWMU 37 - Slope (Continued)
Deseret Chemical Depot, Tooele, Utah

Site ID				SB-37-21	
Field Sample Number				SAIC03	
Site Type				BORE	
Collection Date				2/23/99	
Depth (ft)				5.00	
Associated Field QC Sample - Site Id					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site Id					
Associated Field QC Sample - Field Sample No.					
Metals (6010)					
Laboratory Id Number				99U00422	
Parameter	Units	RL			
Aluminum	ug/g	20		**5690**	
Antimony	ug/g	7	LT	6.00	R
Arsenic	ug/g	0.5		**6.72**	
Barium	ug/g	2		**41.0**	J
Beryllium	ug/g	0.5	LT	0.500	
Cadmium	ug/g	0.2		**0.463**	
Calcium	ug/g	10		**147000**	
Chromium	ug/g	1		**15.9**	J
Cobalt	ug/g	5	LT	5.00	
Copper	ug/g	2		**6.50**	J
Iron	ug/g	5		**6460**	
Lead	ug/g	0.3		**8.86**	
Magnesium	ug/g	10		**6510**	
Manganese	ug/g	1		**180**	
Nickel	ug/g	4		**11.2**	J
Potassium	ug/g	300		**1110**	
Selenium	ug/g	0.5	LT	0.500	
Silver	ug/g	1	LT	1.00	
Sodium	ug/g	20		**255**	
Thallium	ug/g	1	LT	1.00	
Vanadium	ug/g	5		**18.0**	
Zinc	ug/g	2		**37.9**	
Metals (7471)					
Laboratory Id Number				99U00422	
Parameter	Units	RL			
Mercury	ug/g	0.0500	LT	0.0500	

Created on: 12/13/00

Table 10-8. Summary of Chemicals Detected in Soils at SWMU 37 - Slope
Deseret Chemical Depot, DCD, Tooele, Utah

Chemical	Units	Proportion of Detects All Samples[a]	Detects Minimum	Detects Maximum	95% UTL of Background Data Set		Proportion of Detected Results Greater Than Background UTL	Maximum Concentration Location	Maximum Concentration Depth	COPC?
Surface Soils										
Inorganics										
Aluminum	ug/g	11 / 11	12,400	35,400	24,256		1 / 11	SB-37-11	0	Yes
Antimony	ug/g	3 / 9	8.3	16	12		1 / 3	SB-37-11	0	Yes
Arsenic	ug/g	11 / 11	6.3	19	3.4	*	0 / 11	SB-37-15	0	No
Barium	ug/g	11 / 11	294	6,800	423		8 / 11	SB-37-20	0	Yes
Beryllium	ug/g	8 / 11	0.57	0.83	1.2		0 / 8	SB-37-15	0	No
Cadmium	ug/g	11 / 11	0.46	12	21		0 / 11	SB-37-19	0	Yes
Calcium	ug/g	11 / 11	39,600	87,400	250,000		0 / 11	SB-37-14	0	No
Chromium	ug/g	11 / 11	19	109	56		2 / 11	SB-37-20	0	Yes
Cobalt	ug/g	10 / 11	6.0	37	10		8 / 10	SB-37-11	0	Yes
Copper	ug/g	11 / 11	120	2,690	162		9 / 11	SB-37-11	0	Yes
Iron	ug/g	11 / 11	24,300	158,000	21,340		11 / 11	SB-37-11	0	Yes
Lead	ug/g	11 / 11	26	748	401		2 / 11	SB-37-18	0	Yes
Magnesium	ug/g	11 / 11	7,410	55,100	35,700		2 / 11	SB-37-20	0	Yes
Manganese	ug/g	11 / 11	395	958	649		2 / 11	SB-37-11	0	Yes
Mercury	ug/g	1 / 11	0.056	0.056	0.36		0 / 1	SB-37-11	0	No
Nickel	ug/g	11 / 11	23	153	33		5 / 11	SB-37-11	0	Yes
Potassium	ug/g	11 / 11	1,810	6,130	6,751		0 / 11	SB-37-15	0	No
Silver	ug/g	4 / 11	2.2	82	0.47	*	4 / 4	SB-37-11	0	Yes
Sodium	ug/g	11 / 11	146	419	5,610		0 / 11	SB-37-16	0	No
Thallium	ug/g	3 / 11	1.4	3.2	34		0 / 3	SB-37-11	0	No
Vanadium	ug/g	10 / 11	9.6	42	55		0 / 10	SB-37-17	0	No
Zinc	ug/g	11 / 11	90	651	385		2 / 11	SB-37-20	0	Yes
Organics										
2,4,6-Trinitrotoluene	ug/g	1 / 11	0.53	0.53	0.0		1 / 1	SB-37-18	0	Yes
Subsurface Soils										
Inorganics										
Aluminum	ug/g	33 / 33	4,170	99,200	24,256		9 / 33	SB-37-17	5	No
Antimony	ug/g	5 / 19	6.9	13	12		1 / 5	SB-37-15	6.5	Yes
Arsenic	ug/g	33 / 33	1.3	58	3.4	*	4 / 33	SB-37-19	1	No
Barium	ug/g	33 / 33	41	23,100	423		20 / 33	SB-37-20	1	Yes
Beryllium	ug/g	16 / 33	0.057	0.78	1.2		0 / 16	SB-37-18	1	No
Cadmium	ug/g	32 / 33	0.36	37	21		2 / 32	SB-37-12	1	Yes
Calcium	ug/g	33 / 33	318	198,000	250,000		0 / 33	SB-37-21	1	No
Chromium	ug/g	33 / 33	4.8	234	56		9 / 33	SB-37-19	1	No
Cobalt	ug/g	25 / 33	1.6	63	10		13 / 25	SB-37-11	1	No
Copper	ug/g	33 / 33	6.5	12,500	162		18 / 33	SB-37-19	1	Yes
Iron	ug/g	33 / 33	1,610	391,000	21,340		17 / 33	SB-37-18	5	Yes
Lead	ug/g	33 / 33	8.9	963	401		5 / 33	SB-37-12	5	Yes
Magnesium	ug/g	33 / 33	3,050	268,000	35,700		9 / 33	SB-37-12	5	Yes
Manganese	ug/g	33 / 33	180	2,290	649		13 / 33	SB-37-15	6.5	Yes
Mercury	ug/g	8 / 33	0.051	0.11	0.36		0 / 8	SB-37-16	10	No
Nickel	ug/g	33 / 33	8.5	374	33		17 / 33	SB-37-11	1	Yes
Potassium	ug/g	30 / 33	401	4,800	6,751		0 / 30	SB-37-16	1	No
Selenium	ug/g	1 / 33	1.5	1.5	2.9		0 / 1	SB-37-15	10	No
Silver	ug/g	24 / 33	1.4	310	0.47	*	20 / 24	SB-37-11	1	Yes
Sodium	ug/g	32 / 33	29	873	5,610		0 / 32	SB-37-12	15	No
Thallium	ug/g	20 / 33	0.46	23	34		0 / 20	SB-37-18	5	No
Vanadium	ug/g	28 / 33	9.3	43	55		0 / 28	SB-37-18	1	No
Zinc	ug/g	33 / 33	38	1,770	385		4 / 33	SB-37-12	1	Yes

* 95% UTL is presented in log-space. In order to conduct an accurate comparison, take the natural log of the maximum concentration before comparing to the 95% UTL.

[a] For the proportion of detects, counts were based on the unaveraged data set.

[1] Surface samples are collected within the range of 0 to 0.5 feet BLS.

[2] Subsurface samples are collected within the range of >0.5 feet BLS.

Table 10-9. Chemicals of Potential Concern in Soil at SWMU 37
Pit Floor
Deseret Chemical Depot, Tooele, Utah

Metals	VOCs/SVOCs
Surface Soil (0 to 0.5 feet BLS)	
	Acenaphthene
	Anthracene
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(g,h,i)perylene
	Benzo(k)fluoranthene
	Chrysene
	Dibenzofuran
	Fluoranthene
	Fluorene
	Indeno(1,2,3-cd)pyrene
	Phenanthrene
	Pyrene
Subsurface Soil (0.5 to 15 feet BLS)	
Arsenic	Pyrene
Calcium	di-N-Butyl Phthalate

Table 10-10. Chemicals of Potential Concern in Soil at SWMU 37
Slope
Deseret Chemical Depot, Tooele, Utah

Metals	Explosives
Surface Soil (0 to 0.5 feet BLS)	
Aluminum	2,4,6-Trinitrotoluene
Antimony	
Barium	
Cadmium	
Chromium	
Cobalt	
Copper	
Iron	
Lead	
Magnesium	
Manganese	
Nickel	
Silver	
Zinc	
Subsurface Soil (0.5 to 15 feet BLS)	
Antimony	
Barium	
Cadmium	
Copper	
Iron	
Lead	
Magnesium	
Manganese	
Nickel	
Silver	
Zinc	

Table 10-11. RME Risk Characterization Summary: SWMU 37 - Pit Floor
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	Current Land Use				Future Land Use															
		Noncancer HI		Cancer Risk		Noncancer HI								Cancer Risk							
		Depot Worker		Depot Worker		Resident Child		Resident Adult		Depot Worker		Construction Worker		Resident Integrated		Depot Worker		Construction Worker			
Surface Soil (0 to 0.5 ft BLS)	Ingestion	2E-06	B	2E-08	B	1E-03	B	1E-04	B	9E-05	B	2E-05	B	5E-06	E	1E-06	B	2E-07	B		
	Dermal Contact	2E-06	B	2E-07	B	2E-04	B	1E-04	B	1E-04	B	2E-06	B	2E-05	E	8E-06	B	3E-07	B		
	Inhalation (Dust)	0E+00	B	2E-12	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	2E-10	B	1E-10	B	5E-12	B		
	Inhalation (Volatiles)	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B		
Subsurface Soil (>0.5 to 15 ft BLS)	Ingestion	NA		NA		9E-01	B	9E-02	B	NA		6E-02	B	5E-05	E	NA		2E-06	B		
	Dermal Contact	NA		NA		3E-01	B	2E-01	B	NA		2E-02	B	4E-05	E	NA		8E-07	B		
	Inhalation (Dust)	NA		NA		0E+00	B	0E+00	B	NA		0E+00	B	5E-08	B	NA		1E-09	B		
	Inhalation (Volatiles)	NA		NA		0E+00	B	0E+00	B	NA		0E+00	B	0E+00	B	NA		0E+00	B		
Surface Soil																					
Combined Hazard Index (HI):		4E-06	B			1E-03	B	3E-04	B	2E-04	B	2E-05	B								
Combined Cancer Risk:				2E-07	B									2E-05	E	9E-06	B	5E-07	B		
Subsurface Soil																					
Combined Hazard Index (HI):		NA				1E+00	B	3E-01	B	NA		9E-02	B								
Combined Cancer Risk:				NA										8E-05	E	NA		3E-06	B		

NA - pathway not evaluated
0E+00 - pathway evaluated but no risks could be calculated due to lack of EPA-approved toxicity values
B - HI ≤ 1 or ELCR ≤ 10^{-6} for the residential scenario; HI ≤ 1 or ELCR ≤ 10^{-4} for the worker scenarios
E - HI > 1 or ELCR > 10^{-6} for the residential scenario; HI > 1 or ELCR > 10^{-4} for the worker scenarios
Integrated receptor combines both child and adult exposures

Table 10-12. RME Risk Characterization Summary for Produce and Beef: SWMU 37 - Pit Floor
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	Future Land Use					
		Noncancer HI				Cancer Risk	
		Resident Child		Resident Adult		Resident Child	
Produce Surface Soil (0 to 0.5 ft BLS)	Leafy Vegetable Ingestion	2E-05	B	7E-06	B	7E-11	B
	Tuberous Vegetable Ingestion	3E-02	B	1E-02	B	8E-05	E
	Fruit Ingestion	4E-03	B	1E-03	B	2E-12	B
Produce Subsurface Soil (>0.5 to 15 ft BLS)	Leafy Vegetable Ingestion	3E+00	E	9E-01	B	3E-04	E
	Tuberous Vegetable Ingestion	1E+00	B	3E-01	B	9E-05	E
	Fruit Ingestion	2E-01	B	8E-02	B	2E-05	E
Beef	Ingestion	4E-03	B	1E-03	B	3E-05	E
Produce (Surface Soil) and Beef							
Combined Hazard Index (HI):		4E-02	B	1E-02	B		
Combined Cancer Risk:						1E-04	E
Produce (Subsurface Soil) and Beef							
Combined Hazard Index (HI):		4E+00	E	1E+00	B		
Combined Cancer Risk:						4E-04	E

NA - pathway not evaluated
0E+00 - pathway evaluated but no risks could be calculated due to lack of EPA-approved toxicity values
B - HI ≤ 1 or ELCR ≤ 10^{-6} for the residential scenario; HI ≤ 1 or ELCR ≤ 10^{-4} for the worker scenarios
E - HI > 1 or ELCR > 10^{-6} for the residential scenario; HI > 1 or ELCR > 10^{-4} for the worker scenarios
Integrated receptor combines both child and adult exposures

Table 10-13. Chemicals of Concern for RME Risks at SWMU 37 - Pit Floor
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	COC[a]	% of Total HI	% of Total Cancer Risk	Current Land Use		Future Land Use						
					Noncancer HI: Depot Worker	Cancer Risk: Depot Worker	Noncancer HI				Cancer Risk		
							Resident Child	Resident Adult	Depot Worker	Construction Worker	Resident Integrated	Depot Worker	Construction Worker
Surface Soil (0 to 0.5 ft BLS)	Ingestion	Benzo(a)pyrene		77%							4E-06		
	Dermal Contact	Benzo(a)pyrene		77%							1E-06		
		Benzo(a)anthracene		8%							1E-06		
		Benzo(b)fluoranthene		8%							1E-06		
	Inhalation (Dust)												
	Inhalation (Volatiles)												
Subsurface Soil (>0.5 to 15 ft BLS)	Ingestion	Arsenic		100%							5E-05		
	Dermal Contact	Arsenic		100%							4E-05		
	Inhalation (Dust)												
	Inhalation (Volatiles)												

[a] COCs are chemicals which contribute to a pathway with HI > 1 and ELCR > 10^{-4} for the residential scenario and HI > 1 and ELCR > 10^{-4} for the worker scenarios
A blank space indicates a pathway not analyzed or an analyte which is not a COC for that pathway
Integrated receptor combines both child and adult exposures

Table 10-14. Chemicals of Concern for Produce and Beef RME Risks at SWMU 37 - Pit Floor
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	COC[a]	% of Total HI	% of Total Cancer Risk	Future Land Use		
					Noncancer HI		
					Resident Child	Resident Adult	Resident Integrated
Produce (Surface Soil)	Leafy Vegetable Ingestion						
	Tuberous Vegetable Ingestion	Benzo(a)anthracene		12%			9E-06
		Benzo(a)pyrene		80%			6E-05
		Benzo(b)fluoranthene		5%			4E-06
		Indeno(1,2,3-cd)pyrene		2%			2E-06
	Fruit Ingestion						
Produce (Subsurface Soil)	Leafy Vegetable Ingestion	Arsenic	100%	100%	3E+00	9E-01	3E-04
	Tuberous Vegetable Ingestion	Arsenic	100%	100%	1E+00	3E-01	9E-05
	Fruit Ingestion	Arsenic		100%			2E-05
Beef	Ingestion	Benzo(a)pyrene		54%			2E-05
		Benzo(b)fluoranthene		17%			5E-06
		Indeno(1,2,3-cd)pyrene		24%			8E-06

[a] COCs are chemicals which contribute to a pathway with HI > 1 and ELCR > 10^{-6} for the residential scenario and HI > 1 and ELCR > 10^{-4} for the worker scenarios
A blank space indicates a pathway not analyzed or an analyte which is not a COC for that pathway
Integrated receptor combines both child and adult exposures

Table 10-15. RME Risk Characterization Summary: SWMU 37 - Slope
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	Current Land Use		Future Land Use											
		Noncancer HI	Cancer Risk	Noncancer HI						Cancer Risk					
		Depot Worker	Depot Worker	Resident Child		Resident Adult		Depot Worker		Construction Worker		Resident Integrated		Depot Worker		Construction Worker	
Surface Soil (0 to 0.5 ft BLS)	Ingestion	1E-02 B	4E-11 B	7E+00	E	7E-01	B	5E-01	B	5E-01	B	9E-09	B	2E-09	B	4E-10	B
	Dermal Contact	4E-04 B	0E+00 B	4E-02	B	3E-02	B	2E-02	B	4E-03	B	0E+00	B	0E+00	B	0E+00	B
	Inhalation (Dust)	5E-04 B	6E-10 B	8E-02	B	3E-02	B	2E-02	B	4E-03	B	6E-08	B	3E-08	B	1E-09	B
	Inhalation (Volatiles)	0E+00 B	0E+00 B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B	0E+00	B
Subsurface Soil (>0.5 to 15 ft BLS)	Ingestion	NA	NA	2E+01	E	2E+00	E	NA		1E+00	B	0E+00	B	NA		0E+00	B
	Dermal Contact	NA	NA	4E-02	B	3E-02	B	NA		4E-03	B	0E+00	B	NA		0E+00	B
	Inhalation (Dust)	NA	NA	1E-01	B	5E-02	B	NA		4E-03	B	1E-08	B	NA		2E-10	B
	Inhalation (Volatiles)	NA	NA	0E+00	B	0E+00	B	NA		0E+00	B	0E+00	B	NA		0E+00	B
Surface Soil															
Combined Hazard Index (HI):		1E-02 B		7E+00	E	8E-01	B	5E-01	B	5E-01	B				
Combined Cancer Risk:			6E-10 B									7E-08	B	3E-08	B	2E-09	B
Subsurface Soil															
Combined Hazard Index (HI):		NA		2E+01	E	2E+00	E	NA		1E+00	B				
Combined Cancer Risk:			NA									1E-08	B	NA		2E-10	B

NA - pathway not evaluated
0E+00 - pathway evaluated but no risks could be calculated due to lack of EPA-approved toxicity values
B - HI ≤ 1 or ELCR ≤ 10^{-6} for the residential scenario; HI ≤ 1 or ELCR ≤ 10^{-4} for the worker scenarios
E - HI > 1 or ELCR > 10^{-6} for the residential scenario; HI > 1 or ELCR > 10^{-4} for the worker scenarios
Integrated receptor combines both child and adult exposures

Table 10-16. RME Risk Characterization Summary for Produce and Beef: SWMU 37 - Slope
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	Future Land Use					
		Noncancer HI				Cancer Risk	
		Resident Child		Resident Adult		Resident Child	
Produce Surface Soil (0 to 0.5 ft BLS)	Leafy Vegetable Ingestion	6E+01	E	2E+01	E	8E-08	B
	Tuberous Vegetable Ingestion	3E+01	E	1E+01	E	2E-06	E
	Fruit Ingestion	2E+01	E	8E+00	E	2E-07	B
Produce Subsurface Soil (>0.5 to 15 ft BLS)	Leafy Vegetable Ingestion	2E+02	E	7E+01	E	0E+00	B
	Tuberous Vegetable Ingestion	2E+02	E	5E+01	E	0E+00	B
	Fruit Ingestion	1E+02	E	5E+01	E	0E+00	B
Beef	Ingestion	9E+00	E	3E+00	E	2E-12	B
Produce (Surface Soil) and Beef							
Combined Hazard Index (HI):		1E+02	E	4E+01	E		
Combined Cancer Risk:						3E-06	E
Produce (Subsurface Soil) and Beef							
Combined Hazard Index (HI):		5E+02	E	2E+02	E		
Combined Cancer Risk:						2E-12	B

NA - pathway not evaluated
0E+00 - pathway evaluated but no risks could be calculated due to lack of EPA-approved toxicity values
B - HI ≤ 1 or ELCR ≤ 10^{-6} for the residential scenario; HI ≤ 1 or ELCR ≤ 10^{-4} for the worker scenarios
E - HI > 1 or ELCR > 10^{-6} for the residential scenario; HI > 1 or ELCR > 10^{-4} for the worker scenarios
Integrated receptor combines both child and adult exposures

Table 10-17. Chemicals of Concern for RME Risks at SWMU 37 - Slope
Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	COC[a]	% of Total HI	% of Total Cancer Risk	Current Land Use		Future Land Use						
					Noncancer HI: Depot Worker	Cancer Risk: Depot Worker	Noncancer HI				Cancer Risk		
							Resident Child	Resident Adult	Depot Worker	Construction Worker	Resident Integrated	Depot Worker	Construction Worker
Surface Soil (0 to 0.5 ft BLS)	Ingestion Dermal Contact Inhalation (Dust) Inhalation (Volatiles)	Iron	58%				4E+00	4E-01					
Subsurface Soil (>0.5 to 15 ft BLS)	Ingestion Dermal Contact Inhalation (Dust) Inhalation (Volatiles)	Barium Copper Iron	15% 20% 58%				3E+00 4E+00 1E+01	3E-01 4E-01 1E+00					

[a] COCs are chemicals which contribute to a pathway with HI > 1 and ELCR > 10^{-4} for the residential scenario and HI > 1 and ELCR > 10^{-4} for the worker scenarios
A blank space indicates a pathway not analyzed or an analyte which is not a COC for that pathway
Integrated receptor combines both child and adult exposures

Table 10-18. Chemicals of Concern for Produce and Beef RME Risks at SWMU 37 - Slope Group 3 Phase II RFI, DCD, Tooele, Utah

Medium	Exposure Route	COC[a]	% of Total HI	% of Total Cancer Risk	Future Land Use		
					Noncancer HI		
					Resident Child	Resident Adult	Resident Integrated
Produce (Surface Soil)	Leafy Vegetable Ingestion	Barium	25%		1E+01	4E+00	
		Cadmium	7%		4E+00	1E+00	
		Copper	32%		2E+01	6E+00	
		Iron	2%		1E+00	4E-01	
		Manganese	32%		2E+01	6E+00	
	Tuberous Vegetable Ingestion	Barium	7%		2E+00	7E-01	
		Cadmium	4%		1E+00	4E-01	
		Copper	58%		2E+01	6E+00	
		Iron	2%		6E-01	2E-01	
		Manganese	25%		8E+00	2E+00	
		2,4,6-Trinitrotoluene	3%	100%	8E-01	3E-01	2E-06
	Fruit Ingestion	Barium	9%		2E+00	7E-01	
		Cadmium	6%		2E+00	5E-01	
		Copper	71%		2E+01	6E+00	
		Iron	2%		5E-01	2E-01	
		Manganese	10%		2E+00	8E-01	
Produce (Subsurface Soil)	Leafy Vegetable Ingestion	Barium	19%		4E+01	1E+01	
		Cadmium	2%		4E+00	1E+00	
		Copper	65%		1E+02	4E+01	
		Iron	2%		4E+00	1E+00	
		Manganese	12%		2E+01	8E+00	
	Tuberous Vegetable Ingestion	Barium	4%		6E+00	2E+00	
		Cadmium	1%		1E+00	4E-01	
		Copper	87%		1E+02	4E+01	
		Iron	1%		2E+00	5E-01	
		Manganese	7%		1E+01	3E+00	
	Fruit Ingestion	Barium	4%		6E+00	2E+00	
		Cadmium	1%		2E+00	5E-01	
		Copper	91%		1E+02	4E+01	
		Iron	1%		2E+00	5E-01	
		Manganese	2%		3E+00	1E+00	
Beef	Ingestion	Copper	21%		2E+00	7E-01	
		Iron	72%		7E+00	2E+00	

[a] COCs are chemicals which contribute to a pathway with HI > 1 and ELCR > 10^{-6} for the residential scenario and HI > 1 and ELCR > 10^{-4} for the worker scenarios
A blank space indicates a pathway not analyzed or an analyte which is not a COC for that pathway
Integrated receptor combines both child and adult exposures

Table 10-19. Occurrence, Distribution, and Selection of Ecological Chemicals of Potential Concern (ecoCOPCs) for Surface Soils (0-0.5 ft BLS) at SWMU 37 - Pit Floor
Deseret Chemical Depot, Tooele, Utah

Run Time: 12:23:29 PM
Run Date: 12/1/00
Exposure Unit: 37__SS2

Chemical	Frequency of Detection [a]	Number of Samples in Mean [b]	Range of Detection Limits	Range of Detected Concentrations	Units	Location of Maximum Concentration	Arithmetic Mean [b]	Site EPC [b,c]	Concentration Used for Screening [d]	Ecological Toxicity Screening Value [e]	Exceeds Ecological Screening Value Y/N [f]	Background Screening Status [g]	ecoCOPC Y/N [h]
Aluminum	8 / 10	10	1,770 - 3,550	4,270 - 19,800	ug/g	SB-37-006A	7,708	11,197	19,800	NA	--	[<bk]	N
Arsenic	10 / 10	10	-- - --	3.4 - 12	ug/g	SB-37-005A	7.9	11	12	5.7	Y	[<bk]	N
Barium	10 / 10	10	-- - --	44 - 181	ug/g	SB-37-006A	137	163	181	1.0	Y	[<bk]	N
Beryllium	4 / 10	10	0.50 - 0.50	0.57 - 1.0	ug/g	SB-37-006A	0.50	0.86	1.0	1.1	N	[<bk]	N
Cadmium	4 / 10	10	0.70 - 0.70	1.1 - 1.4	ug/g	SB-37-006A	0.71	1.2	1.4	0.0022	Y	[<bk]	N
Calcium	6 / 10	10	8,640 - 140,000	49,900 - 120,000	ug/g	SB-37-004A	67,622	87,778	120,000	NA	--	[<bk]	N
Chromium	6 / 10	10	5.0 - 29	6.8 - 23	ug/g	SB-37-006A	10	13	23	0.40	Y	[<bk]	N
Cobalt	10 / 10	10	-- - --	1.8 - 6.5	ug/g	SB-37-005A	4.5	5.4	6.5	0.14	Y	[<bk]	N
Copper	10 / 10	10	-- - --	9.2 - 30	ug/g	SB-37-010A	18	22	30	0.31	Y	[<bk]	N
Iron	9 / 10	10	4,130 - 4,130	6,420 - 18,200	ug/g	SB-37-006A	9,284	12,126	18,200	NA	--	[<bk]	N
Lead	10 / 10	10	-- - --	11 - 34	ug/g	SB-37-004A	21	26	34	0.054	Y	[<bk]	N
Magnesium	6 / 10	10	6,510 - 17,500	8,300 - 14,000	ug/g	SB-37-006A	9,161	11,081	14,000	NA	--	[<bk]	N
Manganese	10 / 10	10	-- - --	220 - 532	ug/g	SB-37-004A	392	450	532	NA	--	[<bk]	N
Nickel	10 / 10	10	-- - --	7.9 - 23	ug/g	SB-37-005A	16	19	23	14	Y	[<bk]	N
Potassium	6 / 10	10	413 - 4,360	1,320 - 5,780	ug/g	SB-37-006A	2,132	3,070	5,780	NA	--	[<bk]	N
Sodium	6 / 10	10	406 - 563	461 - 789	ug/g	SB-37-004A	425	538	789	NA	--	[<bk]	N
Thallium	4 / 10	10	6.6 - 6.6	10 - 13	ug/g	SB-37-004A	6.4	11	13	0.057	Y	[<bk]	N
Vanadium	10 / 10	10	-- - --	8.4 - 28	ug/g	SB-37-006A	17	21	28	1.6	Y	[<bk]	N
Zinc	10 / 10	10	-- - --	32 - 100	ug/g	SB-37-006A	57	71	100	6.6	Y	[<bk]	N
Acenaphthene	1 / 10	10	0.036 - 0.20	0.22 - 0.22	ug/g	SB-37-006A	0.046	0.10	0.22	NA	--	--	Y
Anthracene	1 / 10	10	0.033 - 0.20	0.24 - 0.24	ug/g	SB-37-006A	0.047	0.11	0.24	1,480	N	--	N
Benzo(a)anthracene	1 / 10	10	0.17 - 0.80	0.70 - 0.70	ug/g	SB-37-006A	0.18	0.33	0.70	5.2	N	--	N
Benzo(a)pyrene	1 / 10	10	0.25 - 1.00	0.59 - 0.59	ug/g	SB-37-006A	0.21	0.33	0.59	1.5	N	--	N
Benzo(b)fluoranthene	1 / 10	10	0.21 - 1.00	0.65 - 0.65	ug/g	SB-37-006A	0.20	0.35	0.65	60	N	--	N
Benzo(g,h,i)perylene	1 / 10	10	0.25 - 1.00	0.32 - 0.32	ug/g	SB-37-006A	0.18	0.26	0.32	119	N	--	N
Benzo(k)fluoranthene	1 / 10	10	0.066 - 0.30	0.42 - 0.42	ug/g	SB-37-006A	0.083	0.17	0.42	148	N	--	N
Chrysene	1 / 10	10	0.12 - 0.60	0.96 - 0.96	ug/g	SB-37-006A	0.17	0.39	0.96	4.7	N	--	N
Dibenzofuran	1 / 10	10	0.035 - 0.20	0.064 - 0.064	ug/g	SB-37-006A	0.030	0.050	0.064	NA	--	--	Y
Fluoranthene	1 / 10	10	0.068 - 0.30	1.8 - 1.8	ug/g	SB-37-006A	0.22	0.67	1.8	122	N	--	N
Fluorene	1 / 10	10	0.033 - 0.20	0.14 - 0.14	ug/g	SB-37-006A	0.037	0.075	0.14	122	N	--	N
Indeno(1,2,3-cd)pyrene	1 / 10	10	0.29 - 1.00	0.31 - 0.31	ug/g	SB-37-006A	0.20	0.27	0.31	109	N	--	N
Phenanthrene	1 / 10	10	0.033 - 0.20	1.00 - 1.00	ug/g	SB-37-006A	0.12	0.44	1.00	46	N	--	N
Pyrene	1 / 10	10	0.033 - 0.20	1.6 - 1.6	ug/g	SB-37-006A	0.18	0.77	1.6	79	N	--	N

-- Not applicable (e.g., background comparison not conducted for organic compounds, or screening values not available)

[a] For the Frequency of Detection, counts were based on the unaveraged data set.

[b] Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[c] The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC (denoted by a "#" next to the EPC).

[d] The maximum detected concentration at the site was used for the screen.

[e] Ecological toxicity screening value is the EPA Region V RCRA ecological data quality level (EDQL). See Section 4.2.3.3 for further discussion.

[f] Maximum detected concentration compared to the screening value.

[g] For inorganics, if the analysis of variance determines that the site data are from the same population as the background data, [<bk] appears in the column. If not, "Above" appears in the column.

[h] If the maximum concentration was above the screening value and the site concentration was determined to be above background by ANOVA, the chemical was identified as an ecoCOPC. If only one value was available (screening or background) and the site maximum exceeded that value or if the site concentration was determined to be above background by ANOVA, the chemical was retained as an ecoCOPC. If neither a screening value nor background concentration was available, the chemical was selected as an ecoCOPC.

NA = Not Available.

Table 10-20. Occurrence, Distribution, and Selection of Ecological Chemicals of Potential Concern (ecoCOPCs) for Subsurface Soils (>0.5-15 ft BLS) at SWMU 37 - Pit Floor
Deseret Chemical Depot, Tooele, Utah

Run Time: 12:23:29 PM
Run Date: 12/1/00
Exposure Unit: 37__SS2

Chemical	Frequency of Detection [a]	Number of Samples in Mean [b]	Range of Detection Limits	Range of Detected Concentrations	Units	Location of Maximum Concentration	Arithmetic Mean [b]	Site EPC [b,c]	Concentration Used for Screening [d]	Ecological Toxicity Screening Value [e]	Exceeds Ecological Screening Value Y/N [f]	Background Screening Status [g]	ecoCOPC Y/N [h]
Aluminum	14 / 14	14	-- - --	2,530 - 22,300	ug/g	SB-37-006B	8,747	12,589	22,300	NA	--	[<bk]	N
Arsenic	14 / 14	14	-- - --	8.1 - 49	ug/g	SB-37-006B	16	21	49	5.7	Y	Above	Y
Barium	14 / 14	14	-- - --	43 - 319	ug/g	SB-37-006B	140	203	319	1.0	Y	[<bk]	N
Beryllium	2 / 14	14	0.50 - 0.50	0.63 - 0.81	ug/g	SB-37-010B	0.32	0.39	0.81	1.1	N	[<bk]	N
Cadmium	2 / 14	14	0.70 - 0.70	1.4 - 1.6	ug/g	SB-37-001B	0.52	0.68	1.6	0.0022	Y	[<bk]	N
Calcium	14 / 14	14	-- - --	65,000 - 550,000	ug/g	SB-37-006B	144,429	188,900	550,000	NA	--	Above	Y
Chromium	14 / 14	14	-- - --	6.5 - 43	ug/g	TP-37-002B	17	25	43	0.40	Y	[<bk]	N
Cobalt	14 / 14	14	-- - --	1.8 - 13	ug/g	SB-37-006B	4.4	5.7	13	0.14	Y	[<bk]	N
Copper	14 / 14	14	-- - --	6.0 - 38	ug/g	SB-37-005B	16	23	38	0.31	Y	[<bk]	N
Iron	14 / 14	14	-- - --	4,710 - 33,500	ug/g	SB-37-006B	11,151	14,078	33,500	NA	--	[<bk]	N
Lead	14 / 14	14	-- - --	4.8 - 21	ug/g	SB-37-006B	13	16	21	0.054	Y	[<bk]	N
Magnesium	14 / 14	14	-- - --	3,110 - 34,100	ug/g	SB-37-006B	12,645	17,993	34,100	NA	--	[<bk]	N
Manganese	14 / 14	14	-- - --	100 - 1,020	ug/g	SB-37-006B	352	473	1,020	NA	--	[<bk]	N
Nickel	14 / 14	14	-- - --	8.4 - 51	ug/g	SB-37-006B	17	20	51	14	Y	[<bk]	N
Potassium	14 / 14	14	-- - --	496 - 4,550	ug/g	SB-37-006B	1,911	2,844	4,550	NA	--	[<bk]	N
Selenium	2 / 14	14	0.25 - 0.25	0.44 - 0.64	ug/g	TP-37-002B	0.18	0.24	0.64	0.028	Y	[<bk]	N
Sodium	14 / 14	14	-- - --	415 - 1,800	ug/g	SB-37-001B	784	1,036	1,800	NA	--	[<bk]	N
Thallium	4 / 14	14	6.6 - 6.6	8.9 - 11	ug/g	TP-37-002D	5.3	7.2	11	0.057	Y	[<bk]	N
Vanadium	14 / 14	14	-- - --	9.5 - 58	ug/g	SB-37-006B	20	24	58	1.6	Y	[<bk]	N
Zinc	14 / 14	14	-- - --	22 - 145	ug/g	SB-37-006B	51	64	145	6.6	Y	[<bk]	N
Pyrene	1 / 14	14	0.033 - 0.033	0.050 - 0.050	ug/g	TP-37-002B	0.019	0.022	0.050	79	N	--	N
di-N-Butyl Phthalate	1 / 14	14	0.061 - 0.061	0.083 - 0.083	ug/g	SB-37-005B	0.034	0.039	0.083	0.15	N	--	N

-- Not applicable (e.g., background comparison not conducted for organic compounds, or screening values not available)

[a] For the Frequency of Detection, counts were based on the unaveraged data set.

[b] Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[c] The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC (denoted by a "#" next to the EPC).

[d] The maximum detected concentration at the site was used for the screen.

[e] Ecological toxicity screening value is the EPA Region V RCRA ecological data quality level (EDQL). See Section 4.2.3.3 for further discussion.

[f] Maximum detected concentration compared to the screening value.

[g] For inorganics, if the analysis of variance determines that the site data are from the same population as the background data, [<bk] appears in the column. If not, "Above" appears in the column.

[h] If the maximum concentration was above the screening value and the site concentration was determined to be above background by ANOVA, the chemical was identified as an ecoCOPC. If only one value was available (screening or background) and the site maximum exceeded that value or if the site concentration was determined to be above background by ANOVA, the chemical was retained as an ecoCOPC. If neither a screening value nor background concentration was available, the chemical was selected as an ecoCOPC.

NA = Not Available.

Table 10-21. Occurrence, Distribution, and Selection of Ecological Chemicals of Potential Concern (ecoCOPCs) for Surface Soils (0-0.5 ft BLS) at SWMU 37 - Slope
Deseret Chemical Depot, Tooele, Utah

Run Time: 12:27:14 PM
Run Date: 12/1/00
Exposure Unit: 37__SS3

Chemical	Frequency of Detection [a]	Number of Samples in Mean [b]	Range of Detection Limits	Range of Detected Concentrations	Units	Location of Maximum Concentration	Arithmetic Mean [b]	Site EPC [b,c]	Concentration Used for Screening [d]	Ecological Toxicity Screening Value [e]	Exceeds Ecological Screening Value Y/N [f]	Background Screening Status [g]	ecoCOPC Y/N [h]
Aluminum	11 / 11	11	-- - --	12,400 - 35,400	ug/g	SB-37-11	19,836	23,502	35,400	NA	--	Above	Y
Antimony	3 / 9	9	6.0 - 6.0	8.3 - 16	ug/g	SB-37-11	5.7	10	16	0.14	Y	Above	Y
Arsenic	11 / 11	11	-- - --	6.3 - 19	ug/g	SB-37-15	13	15	19	5.7	Y	[<bk]	N
Barium	11 / 11	11	-- - --	294 - 6,800	ug/g	SB-37-20	1,811	5,572	6,800	1.0	Y	Above	Y
Beryllium	8 / 11	11	0.50 - 0.50	0.57 - 0.83	ug/g	SB-37-15	0.58	0.83 #	0.83	1.1	N	[<bk]	N
Cadmium	11 / 11	11	-- - --	0.46 - 12	ug/g	SB-37-19	3.3	9.6	12	0.0022	Y	Above	Y
Calcium	11 / 11	11	-- - --	39,600 - 87,400	ug/g	SB-37-14	64,709	72,823	87,400	NA	--	[<bk]	N
Chromium	11 / 11	11	-- - --	19 - 109	ug/g	SB-37-20	37	51	109	0.40	Y	Above	Y
Cobalt	10 / 11	11	5.0 - 5.0	6.0 - 37	ug/g	SB-37-11	16	21	37	0.14	Y	Above	Y
Copper	11 / 11	11	-- - --	120 - 2,690	ug/g	SB-37-11	617	1,549	2,690	0.31	Y	Above	Y
Iron	11 / 11	11	-- - --	24,300 - 158,000	ug/g	SB-37-11	58,627	90,113	158,000	NA	--	Above	Y
Lead	11 / 11	11	-- - --	26 - 748	ug/g	SB-37-18	202	651	748	0.054	Y	Above	Y
Magnesium	11 / 11	11	-- - --	7,410 - 55,100	ug/g	SB-37-20	21,474	32,320	55,100	NA	--	Above	Y
Manganese	11 / 11	11	-- - --	395 - 958	ug/g	SB-37-11	569	658	958	NA	--	Above	Y
Mercury	1 / 11	11	0.050 - 0.050	0.056 - 0.056	ug/g	SB-37-11	0.028	0.032	0.056	0.100	N	[<bk]	N
Nickel	11 / 11	11	-- - --	23 - 153	ug/g	SB-37-11	52	83	153	14	Y	Above	Y
Potassium	11 / 11	11	-- - --	1,810 - 6,130	ug/g	SB-37-15	4,096	4,846	6,130	NA	--	[<bk]	N
Silver	4 / 11	11	10.0 - 10.0	2.2 - 82	ug/g	SB-37-11	13	26	82	4.0	Y	Above	Y
Sodium	11 / 11	11	-- - --	146 - 419	ug/g	SB-37-16	307	354	419	NA	--	[<bk]	N
Thallium	3 / 11	11	1.00 - 1.00	1.4 - 3.2	ug/g	SB-37-11	1.0	1.7	3.2	0.057	Y	[<bk]	N
Vanadium	10 / 11	11	5.0 - 5.0	9.6 - 42	ug/g	SB-37-17	22	28	42	1.6	Y	[<bk]	N
Zinc	11 / 11	11	-- - --	90 - 651	ug/g	SB-37-20	208	335	651	6.6	Y	Above	Y
2,4,6-Trinitrotoluene	1 / 11	11	0.20 - 0.20	0.53 - 0.53	ug/g	SB-37-18	0.14	0.19	0.53	NA	--	--	Y

-- Not applicable (e.g., background comparison not conducted for organic compounds, or screening values not available)

[a] For the Frequency of Detection, counts were based on the unaveraged data set.

[b] Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[c] The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC (denoted by a "#" next to the EPC).

[d] The maximum detected concentration at the site was used for the screen.

[e] Ecological toxicity screening value is the EPA Region V RCRA ecological data quality level (EDQL). See Section 4.2.3.3 for further discussion.

[f] Maximum detected concentration compared to the screening value.

[g] For inorganics, if the analysis of variance determines that the site data are from the same population as the background data, [<bk] appears in the column. If not, "Above" appears in the column.

[h] If the maximum concentration was above the screening value and the site concentration was determined to be above background by ANOVA, the chemical was identified as an ecoCOPC. If only one value was available (screening or background) and the site maximum exceeded that value or if the site concentration was determined to be above background by ANOVA, the chemical was retained as an ecoCOPC. If neither a screening value nor background concentration was available, the chemical was selected as an ecoCOPC.

NA = Not Available.

Table 10-22. Occurrence, Distribution, and Selection of Ecological Chemicals of Potential Concern (ecoCOPCs) for Subsurface Soils (>0.5-15 ft BLS) at SWMU 37 - Slope
Deseret Chemical Depot, Tooele, Utah

Run Time: 12:27:14 PM
Run Date: 12/1/00
Exposure Unit: 37_SS3

Chemical	Frequency of Detection [a]	Number of Samples in Mean [b]	Range of Detection Limits	Range of Detected Concentrations	Units	Location of Maximum Concentration	Arithmetic Mean [b]	Site EPC [b,c]	Concentration Used for Screening [d]	Ecological Toxicity Screening Value [e]	Exceeds Ecological Screening Value Y/N [f]	Background Screening Status [g]	ecoCOPC Y/N [h]
Aluminum	33 / 33	33	-- - --	4,170 - 99,200	ug/g	SB-37-17	23,812	34,312	99,200	NA	--	[<bk]	N
Antimony	5 / 19	19	6.0 - 7.0	6.9 - 13	ug/g	SB-37-15	5.1	6.4	13	0.14	Y	Above	Y
Arsenic	33 / 33	33	-- - --	1.3 - 58	ug/g	SB-37-19	16	22	58	5.7	Y	[<bk]	N
Barium	33 / 33	33	-- - --	41 - 23,100	ug/g	SB-37-20	3,807	15,459	23,100	1.0	Y	Above	Y
Beryllium	16 / 33	33	0.50 - 0.50	0.057 - 0.78	ug/g	SB-37-18	0.33	0.39	0.78	1.1	N	[<bk]	N
Cadmium	32 / 33	33	0.20 - 0.20	0.36 - 37	ug/g	SB-37-12	4.8	9.7	37	0.0022	Y	Above	Y
Calcium	33 / 33	33	-- - --	318 - 198,000	ug/g	SB-37-21	91,565	198,000 #	198,000	NA	--	[<bk]	N
Chromium	33 / 33	33	-- - --	4.8 - 234	ug/g	SB-37-19	52	80	234	0.40	Y	[<bk]	N
Cobalt	25 / 33	33	5.0 - 5.0	1.6 - 63	ug/g	SB-37-11	13	22	63	0.14	Y	[<bk]	N
Copper	33 / 33	33	-- - --	6.5 - 12,500	ug/g	SB-37-19	1,691	11,635	12,500	0.31	Y	Above	Y
Iron	33 / 33	33	-- - --	1,610 - 391,000	ug/g	SB-37-18	94,537	254,397	391,000	NA	--	Above	Y
Lead	33 / 33	33	-- - --	8.9 - 963	ug/g	SB-37-12	157	315	963	0.054	Y	Above	Y
Magnesium	33 / 33	33	-- - --	3,050 - 268,000	ug/g	SB-37-12	35,928	51,398	268,000	NA	--	Above	Y
Manganese	33 / 33	33	-- - --	180 - 2,290	ug/g	SB-37-15	670	910	2,290	NA	--	Above	Y
Mercury	8 / 33	33	0.050 - 0.050	0.051 - 0.11	ug/g	SB-37-16	0.035	0.040	0.11	0.100	Y	[<bk]	N
Nickel	33 / 33	33	-- - --	8.5 - 374	ug/g	SB-37-11	97	184	374	14	Y	Above	Y
Potassium	30 / 33	33	300 - 300	401 - 4,800	ug/g	SB-37-16	1,600	2,532	4,800	NA	--	[<bk]	N
Selenium	1 / 33	33	0.50 - 2.5	1.5 - 1.5	ug/g	SB-37-15	0.66	0.90	1.5	0.028	Y	[<bk]	N
Silver	24 / 33	33	1.00 - 10.0	1.4 - 310	ug/g	SB-37-11	27	85	310	4.0	Y	Above	Y
Sodium	32 / 33	33	20 - 20	29 - 873	ug/g	SB-37-12	369	438	873	NA	--	[<bk]	N
Thallium	20 / 33	33	1.00 - 5.0	0.46 - 23	ug/g	SB-37-18	4.8	11	23	0.057	Y	[<bk]	N
Vanadium	28 / 33	33	5.0 - 5.0	9.3 - 43	ug/g	SB-37-18	17	26	43	1.6	Y	[<bk]	N
Zinc	33 / 33	33	-- - --	38 - 1,770	ug/g	SB-37-12	251	325	1,770	6.6	Y	Above	Y

-- Not applicable (e.g., background comparison not conducted for organic compounds, or screening values not available)

[a] For the Frequency of Detection, counts were based on the unaveraged data set.

[b] Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[c] The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC (denoted by a "#" next to the EPC).

[d] The maximum detected concentration at the site was used for the screen.

[e] Ecological toxicity screening value is the EPA Region V RCRA ecological data quality level (EDQL). See Section 4.2.3.3 for further discussion.

[f] Maximum detected concentration compared to the screening value.

[g] For inorganics, if the analysis of variance determines that the site data are from the same population as the background data, [<bk] appears in the column. If not, "Above" appears in the column.

[h] If the maximum concentration was above the screening value and the site concentration was determined to be above background by ANOVA, the chemical was identified as an ecoCOPC. If only one value was available (screening or background) and the site maximum exceeded that value or if the site concentration was determined to be above background by ANOVA, the chemical was retained as an ecoCOPC. If neither a screening value nor background concentration was available, the chemical was selected as an ecoCOPC.

NA = Not Available.

Table 10-23. Summary of HQs at or Above 1 for EcoCOPCs at the SWMU 37 Pit Floor and SWMU 37 Slope Deseret Chemical Depot, Tooele, Utah

HQ	SWMU 37 Pit Floor		SWMU 37 Slope	
	Surface Soil	Subsurface Soil	Surface Soil	Subsurface Soil
>100			Aluminum 470 (plants) 1,315 (rabbits) Copper 116 (plants) Silver 293 (rabbits)	Barium 115 (rabbits)
10-100		Arsenic 20 (rabbits)	Antimony 57 (rabbits) Barium 11 (plants) 41 (rabbits) Chromium 51 (plants) Copper 15 (plants) Lead 13 (plants) Silver 13 (plants) 92 (rabbits)	Antimony 36 (rabbits) Barium 31 (plants) Copper 39 (rabbits) Silver 42 (plants)
1-10		Arsenic 2.1 (plants)	Antimony 2.1 (plants) Cadmium 2.4 (plants) 1.7 (rabbits) Cobalt 1.1 (plants) Copper 5.2 (rabbits) Lead 1.6 (rabbits) Manganese 1.3 (plants) Nickel 2.8 (plants) Zinc 6.7 (plants)	Antimony 1.3 (plants) Cadmium 2.4 (plants) 1.7 (rabbits) Lead 6.3 (plants) Manganese 1.8 (plants) Nickel 6.2 (plants) Zinc 6.5 (plants)