

**Characterization Data Summary  
IHSS Group 000-1**

**December 2002**

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## **Enclosure**

Compact Disc - IHSS Group 000-1 Raw Data

## ACRONYMS

AL	action level
AR	Administrative Record
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
DQA	Data Quality Assessment
DQO	Data Quality Objective
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Procedure
HPGe	high-purity germanium detector
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L.L.C.
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
mg/kg	milligram per kilogram
N/A	not applicable
ND	not detected
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
pCi/g	picocurie per gram
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RIN	report identification number
RL	reporting limit
SAP	Sampling and Analysis Plan
SD	standard deviation
SEP	Solar Evaporation Ponds
SOR	sum of ratio
SVOC	semi-volatile organic compound
µg/kg	microgram per kilogram
VOC	volatile organic compound
V&V	verification and validation

## **1.0 INTRODUCTION**

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 000-1 at the Rocky Flats Environmental Technology Site (RFETS) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2001) and IASAP Addendum #IA-03-02 (DOE 2002a).

The IHSSs included in this report are listed in Table 1 and shown on Figure 1.

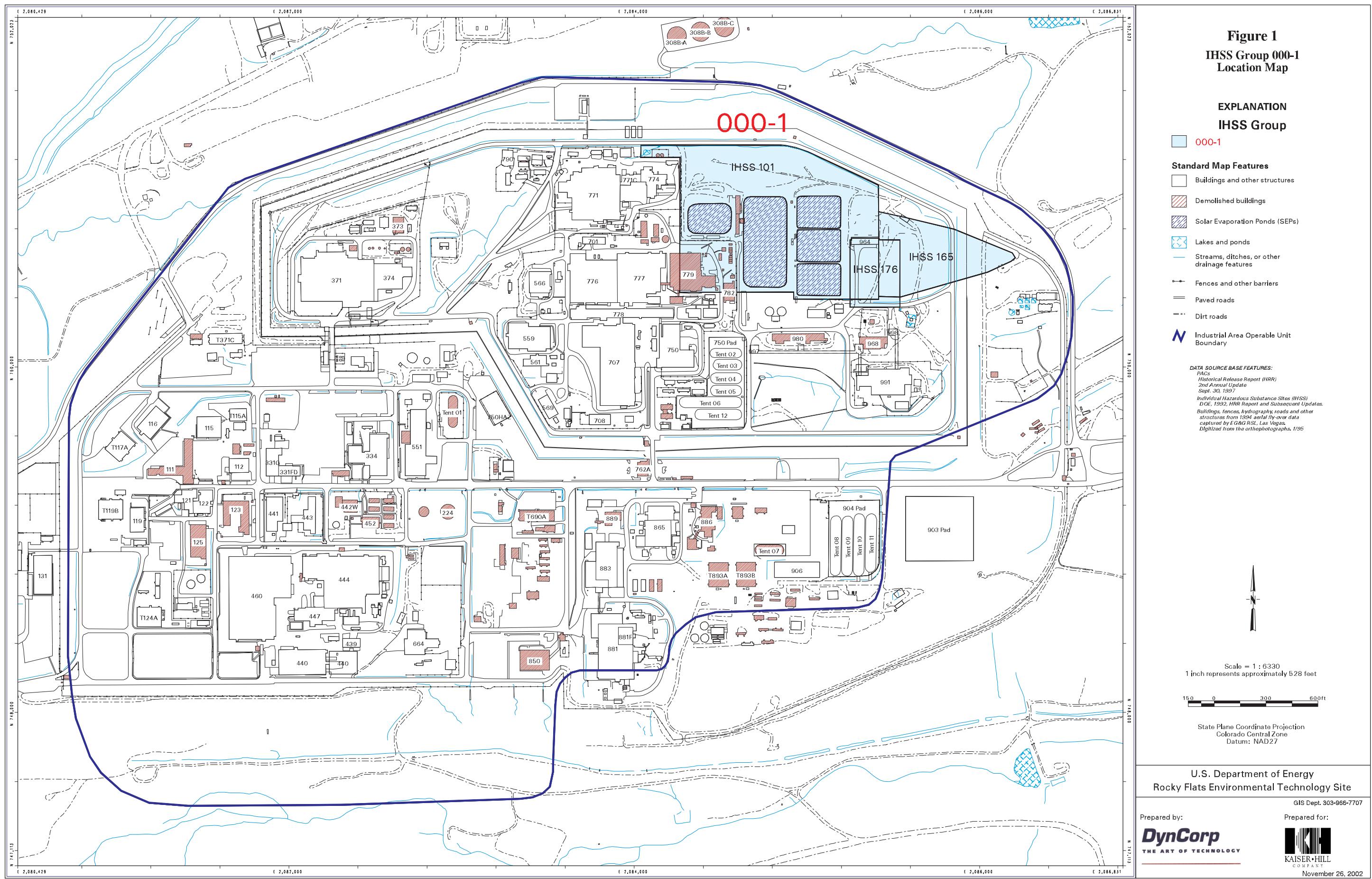
**Table 1**  
**IHSS Group 000-1 Description**

IHSS Group	IHSS/PAC/UBC Site
000-1	IHSS 000-101 – Solar Evaporation Ponds (SEP) (area north of IHSS 175)
	IHSS 900-165 – Triangle Area
	IHSS 900-176 – S&W Contractor Yard

## **2.0 SITE CHARACTERIZATION**

IHSS Group 000-1 information consists of historical knowledge (DOE 1992-2001) and 77 additional sampling locations with specifications as described in IASAP Addendum #IA-03-02 (DOE 2002a). The sampling specifications for the characterization samples collected are listed in Table 2. The location of these samples and analytical results greater than background mean plus two standard deviations or reporting limits are presented in Figure 2 and Table 3. A summary of the analytical results is presented in Table 4. Deviations from planned sampling specifications are presented in Table 5. A summary of validated analytical records is presented in Table 6. The raw data are enclosed on a compact disc.

Analytical results indicate that benzo(a)pyrene is slightly above the RFCA Tier II action level (AL) in one location in IHSS 900-165 and arsenic is above the RFCA Tier II AL in all three IHSSs, but less than the laboratory reporting limit (RL). All other contaminant concentrations are less than RFCA Tier II ALs.



## **Figure 1**

### **IHSS Group 000-1 Location Map**

## **EXPLANATION IHSS Group**

000-1

## Standard Map Features

-  Buildings and other structures
  -  Demolished buildings
  -  Solar Evaporation Ponds (SEPs)
  -  Lakes and ponds
  -  Streams, ditches, or other drainage features
  -  Fences and other barriers
  -  Paved roads
  -  Dirt roads

**DATA SOURCE BASE FEATURES:**  
**PACs**  
*Historical Release Report (HRR)*  
*2nd Annual Update*  
*Sept. 30, 1997*

Sept. 30, 1997  
Individual Hazardous Substance Sites (IHSS)  
DOE, 1992, HRR Report and Subsequent Updates.  
Buildings, fences, hydrography, roads and other  
structures from 1994 aerial fly-over data  
captured by EG&G RSL, Las Vegas.  
Digitized from the orthophotographs. 1/95

Scale = 1 : 6330

State Plane Coordinate Projection  
Colorado Central Zone  
Datum: NAD27

U.S. Department of Energy  
Rocky Flats Environmental Technology Site

Prepared for:

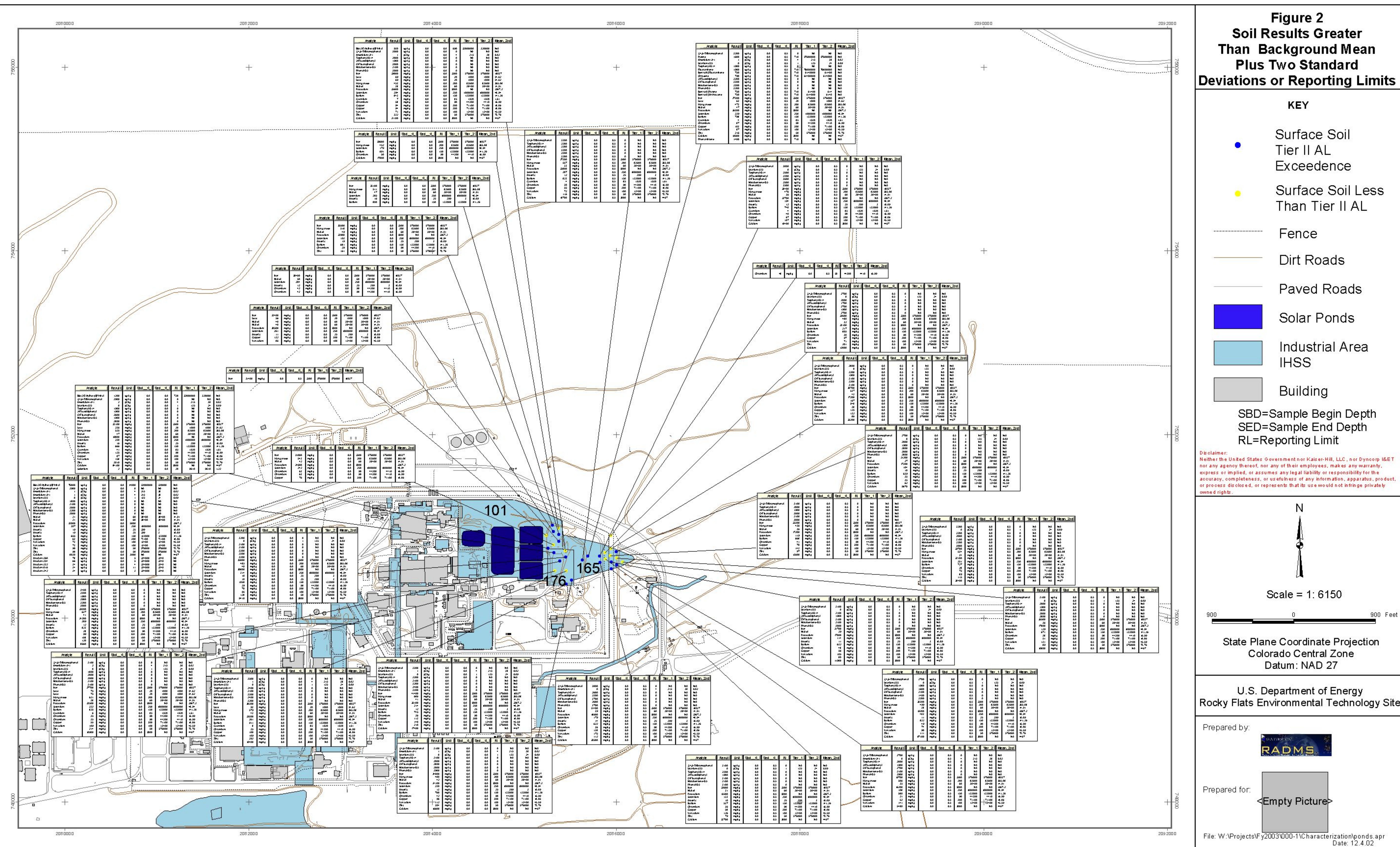
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November 26, 2002 NT

**Figure 2**  
**Soil Results Greater Than Background Mean Plus Two Standard Deviations or Reporting Limits**



**Table 2**  
**IHSS Group 000-1 Characterization Sampling Specifications**

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
000-1	IHSS 101, Solar Evaporation Ponds (SEP)	CM47-A003	2085314.67	750929.01	Surface Soil	0-0.5'	Metals	6200	6010
		CM47-A004	2085314.67	750785.06	Surface Soil	0-0.5'	Metals	6200	6010
		CM48-A008	2085305.15	751001.59	Surface Soil	0-0.5'	Metals	6200	6010
		CN47-A000	2085374.16	750899.27	Surface Soil	0-0.5'	Metals	6200	6010
		CN47-A001	2085375.35	750825.51	Surface Soil	0-0.5'	Metals	6200	6010
		CN48-A000	2085369.40	750968.27	Surface Soil	0-0.5'	Metals	6200	6010
	IHSS 900-165, Triangle Area	CO46-A000	2085633.51	750622.07	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CO46-A000	2085633.51	750622.07	Surface Soil	0-0.5'	Metals	6200	6010
		CO46-A000	2085633.51	750622.07	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CO46-A001	2085695.38	750660.14	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CO46-A001	2085695.38	750660.14	Surface Soil	0-0.5'	Metals	6200	6010
		CO46-A001	2085695.38	750660.14	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A000	2085821.49	750662.52	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A000	2085821.49	750662.52	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A000	2085821.49	750662.52	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A001	2085826.25	750589.95	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A001	2085826.25	750589.95	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A001	2085826.25	750589.95	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ45-A000	2085951.17	750524.51	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ45-A000	2085951.17	750524.51	Surface Soil	0-0.5'	Metals	6200	6010
		CQ45-A000	2085951.17	750524.51	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A002	2085884.54	750630.40	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A002	2085884.54	750630.40	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A002	2085884.54	750630.40	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A003	2085879.78	750701.78	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A003	2085879.78	750701.78	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A003	2085879.78	750701.78	Surface Soil	0-0.5'	SVOCs	N/A	8270

*Characterization Data Summary IHSS Group 000-I*

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CQ46-A000	2085945.22	750742.23	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A000	2085945.22	750742.23	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A000	2085945.22	750742.23	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A001	2085940.46	750668.47	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A001	2085940.46	750668.47	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A001	2085940.46	750668.47	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A002	2085949.98	750598.27	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A002	2085949.98	750598.27	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A002	2085949.98	750598.27	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A003	2086011.84	750563.77	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A003	2086011.84	750563.77	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A003	2086011.84	750563.77	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A004	2086008.27	750639.91	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A004	2086008.27	750639.91	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A004	2086008.27	750639.91	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A005	2086003.51	750708.92	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A005	2086003.51	750708.92	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A005	2086003.51	750708.92	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A006	2086073.71	750599.46	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A006	2086073.71	750599.46	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A006	2086073.71	750599.46	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CM46-A001	2085253.99	750748.18	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CM46-A001	2085253.99	750748.18	Surface Soil	0-0.5'	Metals	6200	6010
		CM46-A001	2085253.99	750748.18	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CM46-A001	2085253.99	750748.18	Surface Soil	0-0.5'	PCBs	N/A	8082
		CM46-A002	2085319.43	750713.68	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CM46-A002	2085319.43	750713.68	Surface Soil	0-0.5'	Metals	6200	6010
		CM46-A002	2085319.43	750713.68	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CM46-A002	2085319.43	750713.68	Surface Soil	0-0.5'	PCBs	N/A	8082

*Characterization Data Summary IHSS Group 000-I*

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
IHSS 900-176, S&W Contractor Yard	CM45-A001	2085330.14	750497.15	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085330.14	750497.15	Surface Soil	0-0.5'	Metals	6200	6010	
		2085330.14	750497.15	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085457.47	750357.95	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085457.44	750357.95	Surface Soil	0-0.5'	Metals	6200	6010	
		2085457.44	750357.95	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085444.35	750722.00	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085444.35	750722.00	Surface Soil	0-0.5'	Metals	6200	6010	
		2085444.35	750722.00	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085450.30	750649.43	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085450.30	750649.43	Surface Soil	0-0.5'	Metals	6200	6010	
		2085450.30	750649.43	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085387.24	750607.79	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085387.24	750607.79	Surface Soil	0-0.5'	Metals	6200	6010	
		2085387.24	750607.79	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085455.06	750503.10	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085455.06	750503.10	Surface Soil	0-0.5'	Metals	6200	6010	
		2085455.06	750503.10	Surface Soil	0-0.5'	SVOCs	N/A	8270	
		2085516.92	750398.40	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec	
		2085516.92	750398.40	Surface Soil	0-0.5'	Metals	6200	6010	
		2085516.92	750398.40	Surface Soil	0-0.5'	SVOCs	N/A	8270	

N/A = not applicable

**Table 3****IHSS Group 000-1 Soil Results Greater than Background Mean Plus Two Standard Deviations or Reporting Limits**

IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-176	CN46-000	2085444.40	750722.10	Bis(2-Ethylhexyl)Phthalate	0	0	930.00	690	32000000	320000	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	Bis(2-Ethylhexyl)Phthalate	0	0	1200.00	720	32000000	320000	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	Bis(2-Ethylhexyl)Phthalate	0	0	75000.00	14000	32000000	320000	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	Aroclor 1254	0	0	66.00	4.5	2240.00	224000.00	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	Aroclor 1260	0	0	78.00	5	2240.00	224000.00	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	2,4,6-Tribromophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	2,4,6-Tribromophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	2,4,6-Tribromophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-003	2086011.80	750563.80	2,4,6-Tribromophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-000	2085945.10	750742.30	2,4,6-Tribromophenol	0	0.5	2800.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	2,4,6-Tribromophenol	0	0	2900.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	2,4,6-Tribromophenol	0	0	2900.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	2,4,6-Tribromophenol	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	2,4,6-Tribromophenol	0	0	3100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	2,4,6-Tribromophenol	0	0	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	2,4,6-Tribromophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	2,4,6-Tribromophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	2,4,6-Tribromophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	2,4,6-Tribromophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	2,4,6-Tribromophenol	0	0	3200.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	2,4,6-Tribromophenol	0	0.5	3200.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-004	2086008.20	750640.00	2,4,6-Tribromophenol	0	0.5	3200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	2,4,6-Tribromophenol	0	0	3300.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	2,4,6-Tribromophenol	0	0.5	3300.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	2,4,6-Tribromophenol	0	0	3400.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	2,4,6-Tribromophenol	0	0	3500.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	2,4,6-Tribromophenol	0	0.5	3800.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	2,4,6-Tribromophenol	0	0.5	3800.00	0	N/A	N/A	N/A	ug/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CO46-001	2085695.30	750660.20	Pyrene	0	0.5	1600.00	710	57600000	57600000	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	Americium-241	0	0.5	0.20	4	215	38	0.02	pCi/g
900-165	CP46-002	2085884.50	750630.40	Americium-241	0	0.5	0.30	4	215	38	0.02	pCi/g
900-165	CO46-001	2085695.30	750660.20	Americium-241	0	0.5	0.53	4	215	38	0.02	pCi/g
900-176	CM46-002	2085319.50	750699.70	Americium-241	0	0	0.83	4	215	38	0.02	pCi/g
900-176	CN46-000	2085444.40	750722.10	Americium-241	0	0	0.83	4	215	38	0.02	pCi/g
900-176	CM46-002	2085319.50	750699.70	Americium-241	0	0	0.83	4	215	38	0.02	pCi/g
900-176	CN44-000	2085457.40	750357.90	Americium-241	0	0	0.91	4	215	38	0.02	pCi/g
900-176	CN45-000	2085455.00	750503.10	Americium-241	0	0	1.30	4	215	38	0.02	pCi/g
900-176	CN45-001	2085516.80	750398.20	Americium-241	0	0	1.30	4	215	38	0.02	pCi/g
900-176	CM46-001	2085254.10	750748.30	Americium-241	0	0	1.50	4	215	38	0.02	pCi/g
900-176	CM45-001	2085330.10	750502.20	Americium-241	0	0	2.00	4	215	38	0.02	pCi/g
900-176	CM45-001	2085330.10	750502.20	Uranium-235	0	0	0.10	1	135	24	0.09	pCi/g
900-176	CN46-001	2085450.20	750649.50	Uranium-235	0	0	0.10	1	135	24	0.09	pCi/g
900-165	CO46-001	2085695.30	750660.20	Uranium-235	0	0.5	0.10	1	135	24	0.09	pCi/g
900-176	CN45-001	2085516.80	750398.20	Uranium-235	0	0	0.11	1	135	24	0.09	pCi/g
900-165	CQ46-003	2086011.80	750563.80	Uranium-235	0	0.5	0.15	1	135	24	0.09	pCi/g
900-165	CP46-000	2085821.50	750662.60	Uranium-235	0	0.5	0.16	1	135	24	0.09	pCi/g
900-165	CQ46-005	2086003.60	750708.90	Uranium-235	0	0.5	0.16	1	135	24	0.09	pCi/g
900-176	CM46-001	2085254.10	750748.30	Uranium-235	0	0	0.17	1	135	24	0.09	pCi/g
900-165	CP46-003	2085879.70	750701.80	Uranium-235	0	0.5	0.18	1	135	24	0.09	pCi/g
900-165	CQ45-000	2085951.20	750524.50	Uranium-235	0	0.5	0.18	1	135	24	0.09	pCi/g
900-165	CQ46-000	2085945.10	750742.30	Uranium-235	0	0.5	0.19	1	135	24	0.09	pCi/g
900-165	CQ46-002	2085950.00	750598.30	Uranium-235	0	0.5	0.19	1	135	24	0.09	pCi/g
900-165	CQ46-006	2086073.80	750599.60	Uranium-235	0	0.5	0.20	1	135	24	0.09	pCi/g
900-176	CN45-000	2085455.00	750503.10	Uranium-235	0	0	0.22	1	135	24	0.09	pCi/g
900-176	CN44-000	2085457.40	750357.90	Uranium-235	0	0	0.23	1	135	24	0.09	pCi/g
900-165	CQ46-004	2086008.20	750640.00	Uranium-235	0	0.5	0.23	1	135	24	0.09	pCi/g
900-176	CM46-002	2085319.50	750699.70	Uranium-235	0	0	0.25	1	135	24	0.09	pCi/g
900-176	CM46-002	2085319.50	750699.70	Terphenyl-D14	0	0	1800.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	Terphenyl-D14	0	0	1800.00	0	N/A	N/A	N/A	ug/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-176	CM46-001	2085254.10	750748.30	Terphenyl-D14	0	0	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Terphenyl-D14	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-003	2086011.80	750563.80	Terphenyl-D14	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	Terphenyl-D14	0	0	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	Terphenyl-D14	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	Terphenyl-D14	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	Terphenyl-D14	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	Terphenyl-D14	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	Terphenyl-D14	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	Terphenyl-D14	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	Terphenyl-D14	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	Terphenyl-D14	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	Terphenyl-D14	0	0	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	Terphenyl-D14	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-000	2085945.10	750742.30	Terphenyl-D14	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-004	2086008.20	750640.00	Terphenyl-D14	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	Terphenyl-D14	0	0	2300.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	Terphenyl-D14	0	0.5	2300.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	Terphenyl-D14	0	0	2400.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	Terphenyl-D14	0	0.5	2500.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	Terphenyl-D14	0	0.5	2600.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Fluoranthene	0	0.5	1900.00	710	76800000	76800000	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Benzo(K)Fluoranthene	0	0.5	750.00	710	6140000	61400	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Chrysene	0	0.5	790.00	710	61400000	614000	N/A	ug/kg
900-165	CQ46-003	2086011.80	750563.80	2-Fluorobiphenyl	0	0.5	1600.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	2-Fluorobiphenyl	0	0.5	1700.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	2-Fluorobiphenyl	0	0	1900.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	2-Fluorobiphenyl	0	0	1900.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	2-Fluorobiphenyl	0	0	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-000	2085945.10	750742.30	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	2-Fluorobiphenyl	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	2-Fluorobiphenyl	0	0	2000.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	2-Fluorobiphenyl	0	0	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-004	2086008.20	750640.00	2-Fluorobiphenyl	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	2-Fluorobiphenyl	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	2-Fluorobiphenyl	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	2-Fluorobiphenyl	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	2-Fluorobiphenyl	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	2-Fluorobiphenyl	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	2-Fluorobiphenyl	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	2-Fluorobiphenyl	0	0.5	2300.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	2-Fluorobiphenyl	0	0.5	2300.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-003	2086011.80	750563.80	O-Fluorophenol	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	O-Fluorophenol	0	0	2600.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	O-Fluorophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	O-Fluorophenol	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	O-Fluorophenol	0	0	2800.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	O-Fluorophenol	0	0.5	2800.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	O-Fluorophenol	0	0.5	2800.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	O-Fluorophenol	0	0	2900.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	O-Fluorophenol	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	O-Fluorophenol	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	O-Fluorophenol	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	O-Fluorophenol	0	0.5	3000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-000	2085945.10	750742.30	O-Fluorophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	O-Fluorophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	O-Fluorophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-004	2086008.20	750640.00	O-Fluorophenol	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	O-Fluorophenol	0	0	3200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	O-Fluorophenol	0	0	3300.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	O-Fluorophenol	0	0	3300.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	O-Fluorophenol	0	0.5	3300.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	O-Fluorophenol	0	0.5	3300.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	O-Fluorophenol	0	0.5	3600.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	O-Fluorophenol	0	0.5	3700.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-003	2086011.80	750563.80	Nitrobenzene-D5	0	0.5	1400.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	Nitrobenzene-D5	0	0	1900.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	Nitrobenzene-D5	0	0.5	1900.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	Nitrobenzene-D5	0	0	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	Nitrobenzene-D5	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	Nitrobenzene-D5	0	0.5	2000.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	Nitrobenzene-D5	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	Nitrobenzene-D5	0	0	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	Nitrobenzene-D5	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	Nitrobenzene-D5	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	Nitrobenzene-D5	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	Nitrobenzene-D5	0	0.5	2100.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	Nitrobenzene-D5	0	0	2200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	Nitrobenzene-D5	0	0	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-000	2085945.10	750742.30	Nitrobenzene-D5	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-004	2086008.20	750640.00	Nitrobenzene-D5	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	Nitrobenzene-D5	0	0	2300.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	Nitrobenzene-D5	0	0.5	2300.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Nitrobenzene-D5	0	0.5	2300.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	Nitrobenzene-D5	0	0	2400.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	Nitrobenzene-D5	0	0	2400.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	Nitrobenzene-D5	0	0.5	2500.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	Nitrobenzene-D5	0	0.5	2600.00	0	N/A	N/A	N/A	ug/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-003	2086011.80	750563.80	Phenol-D5	0	0.5	2200.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-003	2085879.70	750701.80	Phenol-D5	0	0.5	2700.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-001	2085254.10	750748.30	Phenol-D5	0	0	2800.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-005	2086003.60	750708.90	Phenol-D5	0	0.5	2800.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-006	2086073.80	750599.60	Phenol-D5	0	0.5	2800.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-001	2085516.80	750398.20	Phenol-D5	0	0	2900.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	Phenol-D5	0	0.5	2900.00	0	N/A	N/A	N/A	ug/kg
900-176	CM46-002	2085319.50	750699.70	Phenol-D5	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-002	2085387.30	750607.80	Phenol-D5	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-000	2085444.40	750722.10	Phenol-D5	0	0	3000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-001	2085940.50	750668.40	Phenol-D5	0	0.5	3000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-002	2085950.00	750598.30	Phenol-D5	0	0.5	3000.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-004	2086008.20	750640.00	Phenol-D5	0	0.5	3000.00	0	N/A	N/A	N/A	ug/kg
900-176	CM45-001	2085330.10	750502.20	Phenol-D5	0	0	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ46-000	2085945.10	750742.30	Phenol-D5	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-165	CQ45-000	2085951.20	750524.50	Phenol-D5	0	0.5	3100.00	0	N/A	N/A	N/A	ug/kg
900-176	CN45-000	2085455.00	750503.10	Phenol-D5	0	0	3200.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-000	2085633.50	750622.10	Phenol-D5	0	0.5	3200.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Phenol-D5	0	0.5	3200.00	0	N/A	N/A	N/A	ug/kg
900-176	CN46-001	2085450.20	750649.50	Phenol-D5	0	0	3300.00	0	N/A	N/A	N/A	ug/kg
900-176	CN44-000	2085457.40	750357.90	Phenol-D5	0	0	3300.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-000	2085821.50	750662.60	Phenol-D5	0	0.5	3500.00	0	N/A	N/A	N/A	ug/kg
900-165	CP46-001	2085826.20	750589.90	Phenol-D5	0	0.5	3700.00	0	N/A	N/A	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Benzo(A)Pyrene	0	0.5	750.00	710	61400	614	N/A	ug/kg
900-165	CO46-001	2085695.30	750660.20	Benzo(A)Anthracene	0	0.5	750.00	710	614000	6140	N/A	ug/kg
900-165	CP46-002	2085884.50	750630.40	Iron	0	0.5	19700.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Iron	0	0.5	21200.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Iron	0	0.5	21700.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Iron	0	0.5	22600.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Iron	0	0.5	25300.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Iron	0	0.5	26500.00	2500	576000	576000	18037.00	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CO46-000	2085633.50	750622.10	Iron	0	0.5	27300.00	2500	576000	576000	18037.00	mg/kg
900-165	CO46-001	2085695.30	750660.20	Iron	0	0.5	27300.00	2500	576000	576000	18037.00	mg/kg
900-176	CM45-001	2085330.10	750502.20	Iron	0	0	27700.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Iron	0	0.5	28300.00	2500	576000	576000	18037.00	mg/kg
900-165	CP46-000	2085821.50	750662.60	Iron	0	0.5	28400.00	2500	576000	576000	18037.00	mg/kg
900-176	CN46-000	2085444.40	750722.10	Iron	0	0	29000.00	2500	576000	576000	18037.00	mg/kg
900-176	CN46-002	2085387.30	750607.80	Iron	0	0	29300.00	2500	576000	576000	18037.00	mg/kg
900-165	CP46-003	2085879.70	750701.80	Iron	0	0.5	29500.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Iron	0	0.5	29700.00	2500	576000	576000	18037.00	mg/kg
000-101	CM47-003	2085314.60	750929.10	Iron	0	0	30400.00	2500	576000	576000	18037.00	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Iron	0	0.5	30700.00	2500	576000	576000	18037.00	mg/kg
000-101	CM47-004	2085314.60	750788.20	Iron	0	0	31000.00	2500	576000	576000	18037.00	mg/kg
900-1310	CM47-001	2085234.21	750889.92	Iron	0	0.5	31400.00	2500	576000	576000	18037.00	mg/kg
900-165	CP46-001	2085826.20	750589.90	Iron	0	0.5	31400.00	2500	576000	576000	18037.00	mg/kg
900-176	CM46-001	2085254.10	750748.30	Iron	0	0	33100.00	2500	576000	576000	18037.00	mg/kg
000-101	CN47-001	2085375.30	750825.60	Iron	0	0	33400.00	2500	576000	576000	18037.00	mg/kg
900-176	CN45-001	2085516.80	750398.20	Iron	0	0	34000.00	2500	576000	576000	18037.00	mg/kg
900-176	CN46-001	2085450.20	750649.50	Iron	0	0	35000.00	2500	576000	576000	18037.00	mg/kg
000-101	CN47-000	2085374.20	750899.30	Iron	0	0	35100.00	2500	576000	576000	18037.00	mg/kg
000-101	CM48-008	2085305.10	751001.60	Iron	0	0	35500.00	2500	576000	576000	18037.00	mg/kg
900-176	CN45-000	2085455.00	750503.10	Iron	0	0	38300.00	2500	576000	576000	18037.00	mg/kg
000-101	CN48-000	2085369.50	750968.40	Iron	0	0	39600.00	2500	576000	576000	18037.00	mg/kg
900-176	CN44-000	2085457.40	750357.90	Iron	0	0	41400.00	2500	576000	576000	18037.00	mg/kg
000-101	CN47-001	2085375.30	750825.60	Lead	0	0	56.20	20	1000	1000	54.62	mg/kg
900-165	CO46-001	2085695.30	750660.20	Lead	0	0.5	63.20	20	1000	1000	54.62	mg/kg
900-176	CN46-000	2085444.40	750722.10	Lead	0	0	68.60	20	1000	1000	54.62	mg/kg
900-176	CN46-000	2085444.40	750722.10	Lead	0	0	68.60	20	1000	1000	54.62	mg/kg
900-176	CM45-001	2085330.10	750502.20	Lead	0	0	75.10	20	1000	1000	54.62	mg/kg
900-176	CM45-001	2085330.10	750502.20	Lead	0	0	75.10	20	1000	1000	54.62	mg/kg
900-176	CN45-000	2085455.00	750503.10	Lead	0	0	92.70	20	1000	1000	54.62	mg/kg
900-176	CM46-001	2085254.10	750748.30	Lead	0	0	236.00	20	1000	1000	54.62	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-001	2085940.50	750668.40	Manganese	0	0.5	436.00	200	83600	83600	365.08	mg/kg
000-101	CN48-000	2085369.50	750968.40	Manganese	0	0	452.00	200	83600	83600	365.08	mg/kg
900-176	CN46-000	2085444.40	750722.10	Manganese	0	0	453.00	200	83600	83600	365.08	mg/kg
900-165	CO46-001	2085695.30	750660.20	Manganese	0	0.5	473.00	200	83600	83600	365.08	mg/kg
900-165	CP46-000	2085821.50	750662.60	Manganese	0	0.5	476.00	200	83600	83600	365.08	mg/kg
900-176	CN45-001	2085516.80	750398.20	Manganese	0	0	480.00	200	83600	83600	365.08	mg/kg
900-165	CP46-003	2085879.70	750701.80	Manganese	0	0.5	480.00	200	83600	83600	365.08	mg/kg
900-176	CN46-001	2085450.20	750649.50	Manganese	0	0	485.00	200	83600	83600	365.08	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Manganese	0	0.5	499.00	200	83600	83600	365.08	mg/kg
900-165	CP46-002	2085884.50	750630.40	Manganese	0	0.5	506.00	200	83600	83600	365.08	mg/kg
000-101	CN47-000	2085374.20	750899.30	Manganese	0	0	511.00	200	83600	83600	365.08	mg/kg
000-101	CM48-008	2085305.10	751001.60	Manganese	0	0	518.00	200	83600	83600	365.08	mg/kg
900-176	CM46-001	2085254.10	750748.30	Manganese	0	0	525.00	200	83600	83600	365.08	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Manganese	0	0.5	534.00	200	83600	83600	365.08	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Manganese	0	0.5	537.00	200	83600	83600	365.08	mg/kg
000-101	CM47-004	2085314.60	750788.20	Manganese	0	0	543.00	200	83600	83600	365.08	mg/kg
900-165	CO46-000	2085633.50	750622.10	Manganese	0	0.5	557.00	200	83600	83600	365.08	mg/kg
900-176	CN45-000	2085455.00	750503.10	Manganese	0	0	579.00	200	83600	83600	365.08	mg/kg
900-176	CM45-001	2085330.10	750502.20	Manganese	0	0	621.00	200	83600	83600	365.08	mg/kg
900-176	CN46-002	2085387.30	750607.80	Manganese	0	0	637.00	200	83600	83600	365.08	mg/kg
900-176	CN44-000	2085457.40	750357.90	Manganese	0	0	686.00	200	83600	83600	365.08	mg/kg
900-176	CM46-002	2085319.50	750699.70	Nickel	0	0	20.90	60	38400	38400	14.91	mg/kg
900-176	CM46-002	2085319.50	750699.70	Nickel	0	0	20.90	60	38400	38400	14.91	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Nickel	0	0.5	27.40	60	38400	38400	14.91	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Nickel	0	0.5	29.20	60	38400	38400	14.91	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Nickel	0	0.5	30.50	60	38400	38400	14.91	mg/kg
900-165	CP46-003	2085879.70	750701.80	Nickel	0	0.5	32.10	60	38400	38400	14.91	mg/kg
900-165	CO46-000	2085633.50	750622.10	Nickel	0	0.5	33.40	60	38400	38400	14.91	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Nickel	0	0.5	34.10	60	38400	38400	14.91	mg/kg
900-165	CP46-002	2085884.50	750630.40	Nickel	0	0.5	35.00	60	38400	38400	14.91	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Nickel	0	0.5	35.50	60	38400	38400	14.91	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-001	2085940.50	750668.40	Nickel	0	0.5	35.70	60	38400	38400	14.91	mg/kg
900-165	CP46-000	2085821.50	750662.60	Nickel	0	0.5	36.40	60	38400	38400	14.91	mg/kg
900-176	CM45-001	2085330.10	750502.20	Nickel	0	0	37.60	60	38400	38400	14.91	mg/kg
900-176	CN46-000	2085444.40	750722.10	Nickel	0	0	38.00	60	38400	38400	14.91	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Nickel	0	0.5	38.10	60	38400	38400	14.91	mg/kg
900-165	CP46-001	2085826.20	750589.90	Nickel	0	0.5	39.30	60	38400	38400	14.91	mg/kg
000-101	CN47-001	2085375.30	750825.60	Nickel	0	0	39.80	60	38400	38400	14.91	mg/kg
000-101	CN47-001	2085375.30	750825.60	Nickel	0	0	39.80	60	38400	38400	14.91	mg/kg
900-176	CN46-001	2085450.20	750649.50	Nickel	0	0	40.00	60	38400	38400	14.91	mg/kg
900-176	CN46-002	2085387.30	750607.80	Nickel	0	0	40.70	60	38400	38400	14.91	mg/kg
900-176	CN44-000	2085457.40	750357.90	Nickel	0	0	41.40	60	38400	38400	14.91	mg/kg
900-176	CN45-001	2085516.80	750398.20	Nickel	0	0	41.50	60	38400	38400	14.91	mg/kg
000-101	CM47-004	2085314.60	750788.20	Nickel	0	0	42.20	60	38400	38400	14.91	mg/kg
900-176	CN45-000	2085455.00	750503.10	Nickel	0	0	42.60	60	38400	38400	14.91	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Nickel	0	0.5	43.10	60	38400	38400	14.91	mg/kg
900-176	CM46-001	2085254.10	750748.30	Nickel	0	0	46.90	60	38400	38400	14.91	mg/kg
000-101	CN47-000	2085374.20	750899.30	Nickel	0	0	47.20	60	38400	38400	14.91	mg/kg
900-165	CO46-001	2085695.30	750660.20	Nickel	0	0.5	47.30	60	38400	38400	14.91	mg/kg
000-101	CM48-008	2085305.10	751001.60	Nickel	0	0	48.60	60	38400	38400	14.91	mg/kg
000-101	CM47-003	2085314.60	750929.10	Nickel	0	0	49.60	60	38400	38400	14.91	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Potassium	0	0.5	15500.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CP46-002	2085884.50	750630.40	Potassium	0	0.5	16200.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Potassium	0	0.5	17000.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Potassium	0	0.5	17200.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Potassium	0	0.5	17200.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Potassium	0	0.5	17300.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Potassium	0	0.5	17800.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CP46-001	2085826.20	750589.90	Potassium	0	0.5	18600.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CM46-001	2085254.10	750748.30	Potassium	0	0	19000.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Potassium	0	0.5	19200.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Potassium	0	0.5	22100.00	5000	N/A	N/A	2967.20	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CP46-000	2085821.50	750662.60	Potassium	0	0.5	22700.00	5000	N/A	N/A	2967.20	mg/kg
000-101	CM48-008	2085305.10	751001.60	Potassium	0	0	22900.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CP46-003	2085879.70	750701.80	Potassium	0	0.5	23100.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CM45-001	2085330.10	750502.20	Potassium	0	0	23500.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN45-001	2085516.80	750398.20	Potassium	0	0	24100.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN46-002	2085387.30	750607.80	Potassium	0	0	24200.00	5000	N/A	N/A	2967.20	mg/kg
000-101	CM47-004	2085314.60	750788.20	Potassium	0	0	24600.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN46-000	2085444.40	750722.10	Potassium	0	0	25600.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CO46-000	2085633.50	750622.10	Potassium	0	0.5	25800.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN44-000	2085457.40	750357.90	Potassium	0	0	26100.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CO46-001	2085695.30	750660.20	Potassium	0	0.5	26300.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN45-000	2085455.00	750503.10	Potassium	0	0	29300.00	5000	N/A	N/A	2967.20	mg/kg
000-101	CN47-001	2085375.30	750825.60	Potassium	0	0	30500.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CN46-001	2085450.20	750649.50	Potassium	0	0	30800.00	5000	N/A	N/A	2967.20	mg/kg
900-176	CM46-002	2085319.50	750699.70	Potassium	0	0	33000.00	5000	N/A	N/A	2967.20	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Strontium	0	0.5	104.00	250	1000000	1000000	48.94	mg/kg
900-165	CP46-002	2085884.50	750630.40	Strontium	0	0.5	108.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Strontium	0	0.5	114.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Strontium	0	0.5	119.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Strontium	0	0.5	129.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Strontium	0	0.5	133.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Strontium	0	0.5	167.00	250	1000000	1000000	48.94	mg/kg
000-101	CN48-000	2085369.50	750968.40	Strontium	0	0	179.00	250	1000000	1000000	48.94	mg/kg
900-165	CP46-001	2085826.20	750589.90	Strontium	0	0.5	179.00	250	1000000	1000000	48.94	mg/kg
000-101	CM48-008	2085305.10	751001.60	Strontium	0	0	192.00	250	1000000	1000000	48.94	mg/kg
900-165	CP46-000	2085821.50	750662.60	Strontium	0	0.5	194.00	250	1000000	1000000	48.94	mg/kg
000-101	CM47-003	2085314.60	750929.10	Strontium	0	0	204.00	250	1000000	1000000	48.94	mg/kg
000-101	CN47-000	2085374.20	750899.30	Strontium	0	0	205.00	250	1000000	1000000	48.94	mg/kg
900-165	CO46-000	2085633.50	750622.10	Strontium	0	0.5	207.00	250	1000000	1000000	48.94	mg/kg
900-176	CN46-002	2085387.30	750607.80	Strontium	0	0	209.00	250	1000000	1000000	48.94	mg/kg
900-176	CN44-000	2085457.40	750357.90	Strontium	0	0	214.00	250	1000000	1000000	48.94	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CP46-003	2085879.70	750701.80	Strontium	0	0.5	217.00	250	1000000	1000000	48.94	mg/kg
900-176	CM45-001	2085330.10	750502.20	Strontium	0	0	222.00	250	1000000	1000000	48.94	mg/kg
900-165	CO46-001	2085695.30	750660.20	Strontium	0	0.5	229.00	250	1000000	1000000	48.94	mg/kg
900-176	CM46-001	2085254.10	750748.30	Strontium	0	0	230.00	250	1000000	1000000	48.94	mg/kg
900-176	CN45-001	2085516.80	750398.20	Strontium	0	0	230.00	250	1000000	1000000	48.94	mg/kg
000-101	CM47-004	2085314.60	750788.20	Strontium	0	0	242.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Strontium	0	0.5	251.00	250	1000000	1000000	48.94	mg/kg
000-101	CN47-001	2085375.30	750825.60	Strontium	0	0	261.00	250	1000000	1000000	48.94	mg/kg
900-176	CN45-000	2085455.00	750503.10	Strontium	0	0	261.00	250	1000000	1000000	48.94	mg/kg
900-176	CN46-000	2085444.40	750722.10	Strontium	0	0	294.00	250	1000000	1000000	48.94	mg/kg
900-176	CM46-002	2085319.50	750699.70	Strontium	0	0	307.00	250	1000000	1000000	48.94	mg/kg
900-176	CN46-001	2085450.20	750649.50	Strontium	0	0	314.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Strontium	0	0.5	483.00	250	1000000	1000000	48.94	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Arsenic	0	0.5	10.10	25	299	2.99	10.09	mg/kg
900-176	CN46-001	2085450.20	750649.50	Arsenic	0	0	10.20	25	299	2.99	10.09	mg/kg
900-176	CN46-001	2085450.20	750649.50	Arsenic	0	0	10.20	25	299	2.99	10.09	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Arsenic	0	0.5	10.30	25	299	2.99	10.09	mg/kg
000-101	CN47-001	2085375.30	750825.60	Arsenic	0	0	10.50	25	299	2.99	10.09	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Arsenic	0	0.5	10.90	25	299	2.99	10.09	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Arsenic	0	0.5	11.40	25	299	2.99	10.09	mg/kg
900-165	CO46-000	2085633.50	750622.10	Arsenic	0	0.5	11.80	25	299	2.99	10.09	mg/kg
900-176	CN44-000	2085457.40	750357.90	Arsenic	0	0	11.90	25	299	2.99	10.09	mg/kg
000-101	CM47-003	2085314.60	750929.10	Arsenic	0	0	12.00	25	299	2.99	10.09	mg/kg
900-176	CN46-002	2085387.30	750607.80	Arsenic	0	0	12.00	25	299	2.99	10.09	mg/kg
900-165	CP46-000	2085821.50	750662.60	Arsenic	0	0.5	12.40	25	299	2.99	10.09	mg/kg
900-176	CN45-001	2085516.80	750398.20	Arsenic	0	0	13.10	25	299	2.99	10.09	mg/kg
900-165	CP46-001	2085826.20	750589.90	Arsenic	0	0.5	13.90	25	299	2.99	10.09	mg/kg
900-176	CM46-001	2085254.10	750748.30	Arsenic	0	0	15.60	25	299	2.99	10.09	mg/kg
000-101	CN47-000	2085374.20	750899.30	Arsenic	0	0	16.00	25	299	2.99	10.09	mg/kg
900-176	CM46-002	2085319.50	750699.70	Arsenic	0	0	18.90	25	299	2.99	10.09	mg/kg
900-176	CM46-002	2085319.50	750699.70	Arsenic	0	0	18.90	25	299	2.99	10.09	mg/kg

*Characterization Data Summary IHSS Group 000-1*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
000-101	CM48-008	2085305.10	751001.60	Arsenic	0	0	19.30	25	299	2.99	10.09	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Barium	0	0.5	537.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Barium	0	0.5	548.00	150	133000	133000	141.26	mg/kg
900-165	CP46-002	2085884.50	750630.40	Barium	0	0.5	580.00	150	133000	133000	141.26	mg/kg
900-165	CP46-001	2085826.20	750589.90	Barium	0	0.5	622.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Barium	0	0.5	632.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Barium	0	0.5	639.00	150	133000	133000	141.26	mg/kg
900-176	CM46-002	2085319.50	750699.70	Barium	0	0	655.00	150	133000	133000	141.26	mg/kg
900-176	CM46-001	2085254.10	750748.30	Barium	0	0	666.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Barium	0	0.5	668.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Barium	0	0.5	671.00	150	133000	133000	141.26	mg/kg
000-101	CM48-008	2085305.10	751001.60	Barium	0	0	681.00	150	133000	133000	141.26	mg/kg
000-101	CN48-000	2085369.50	750968.40	Barium	0	0	691.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Barium	0	0.5	727.00	150	133000	133000	141.26	mg/kg
900-176	CN44-000	2085457.40	750357.90	Barium	0	0	745.00	150	133000	133000	141.26	mg/kg
900-165	CP46-000	2085821.50	750662.60	Barium	0	0.5	748.00	150	133000	133000	141.26	mg/kg
900-176	CN45-001	2085516.80	750398.20	Barium	0	0	760.00	150	133000	133000	141.26	mg/kg
900-165	CO46-001	2085695.30	750660.20	Barium	0	0.5	798.00	150	133000	133000	141.26	mg/kg
000-101	CN47-000	2085374.20	750899.30	Barium	0	0	800.00	150	133000	133000	141.26	mg/kg
900-165	CP46-003	2085879.70	750701.80	Barium	0	0.5	805.00	150	133000	133000	141.26	mg/kg
900-176	CN46-002	2085387.30	750607.80	Barium	0	0	823.00	150	133000	133000	141.26	mg/kg
900-165	CO46-000	2085633.50	750622.10	Barium	0	0.5	823.00	150	133000	133000	141.26	mg/kg
900-176	CM45-001	2085330.10	750502.20	Barium	0	0	825.00	150	133000	133000	141.26	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Barium	0	0.5	832.00	150	133000	133000	141.26	mg/kg
900-176	CN46-000	2085444.40	750722.10	Barium	0	0	843.00	150	133000	133000	141.26	mg/kg
900-176	CN45-000	2085455.00	750503.10	Barium	0	0	911.00	150	133000	133000	141.26	mg/kg
900-176	CN46-001	2085450.20	750649.50	Barium	0	0	1050.00	150	133000	133000	141.26	mg/kg
900-165	CP46-000	2085821.50	750662.60	Cadmium	0	0.5	3.93	85	1920	1920	1.61	mg/kg
900-165	CO46-001	2085695.30	750660.20	Cadmium	0	0.5	4.19	85	1920	1920	1.61	mg/kg
900-165	CO46-000	2085633.50	750622.10	Cadmium	0	0.5	4.41	85	1920	1920	1.61	mg/kg
900-176	CM45-001	2085330.10	750502.20	Cadmium	0	0	6.03	85	1920	1920	1.61	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-176	CN46-000	2085444.40	750722.10	Cadmium	0	0	6.67	85	1920	1920	1.61	mg/kg
900-176	CN45-000	2085455.00	750503.10	Cadmium	0	0	8.36	85	1920	1920	1.61	mg/kg
900-176	CM46-001	2085254.10	750748.30	Cadmium	0	0	41.40	85	1920	1920	1.61	mg/kg
900-165	CP46-002	2085884.50	750630.40	Chromium	0	0.5	21.00	90	44300	4410	16.99	mg/kg
900-176	CN46-002	2085387.30	750607.80	Chromium	0	0	27.60	90	44300	4410	16.99	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Chromium	0	0.5	28.30	90	44300	4410	16.99	mg/kg
000-101	CM48-008	2085305.10	751001.60	Chromium	0	0	28.80	90	44300	4410	16.99	mg/kg
900-176	CN46-001	2085450.20	750649.50	Chromium	0	0	28.80	90	44300	4410	16.99	mg/kg
900-165	CP46-003	2085879.70	750701.80	Chromium	0	0.5	29.80	90	44300	4410	16.99	mg/kg
900-165	CO46-000	2085633.50	750622.10	Chromium	0	0.5	30.00	90	44300	4410	16.99	mg/kg
900-176	CN45-000	2085455.00	750503.10	Chromium	0	0	35.20	90	44300	4410	16.99	mg/kg
900-176	CM45-001	2085330.10	750502.20	Chromium	0	0	35.30	90	44300	4410	16.99	mg/kg
900-176	CM45-001	2085330.10	750502.20	Chromium	0	0	35.30	90	44300	4410	16.99	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Chromium	0	0.5	35.40	90	44300	4410	16.99	mg/kg
900-176	CN44-000	2085457.40	750357.90	Chromium	0	0	35.60	90	44300	4410	16.99	mg/kg
900-165	CP46-001	2085826.20	750589.90	Chromium	0	0.5	35.80	90	44300	4410	16.99	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Chromium	0	0.5	36.20	90	44300	4410	16.99	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Chromium	0	0.5	37.50	90	44300	4410	16.99	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Chromium	0	0.5	38.40	90	44300	4410	16.99	mg/kg
900-165	CP46-000	2085821.50	750662.60	Chromium	0	0.5	39.60	90	44300	4410	16.99	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Chromium	0	0.5	40.50	90	44300	4410	16.99	mg/kg
900-176	CN45-001	2085516.80	750398.20	Chromium	0	0	41.60	90	44300	4410	16.99	mg/kg
000-101	CM47-003	2085314.60	750929.10	Chromium	0	0	42.30	90	44300	4410	16.99	mg/kg
000-101	CM47-003	2085314.60	750929.10	Chromium	0	0	42.30	90	44300	4410	16.99	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Chromium	0	0.5	47.90	90	44300	4410	16.99	mg/kg
000-101	CQ47-000	2085944.60	750887.84	Chromium	0	0.5	48.00	90	44300	4410	16.99	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Chromium	0	0.5	48.90	90	44300	4410	16.99	mg/kg
000-101	CN48-000	2085369.50	750968.40	Chromium	0	0	50.00	90	44300	4410	16.99	mg/kg
900-176	CN46-000	2085444.40	750722.10	Chromium	0	0	57.60	90	44300	4410	16.99	mg/kg
000-101	CM47-004	2085314.60	750788.20	Chromium	0	0	63.30	90	44300	4410	16.99	mg/kg
000-101	CM47-004	2085314.60	750788.20	Chromium	0	0	63.30	90	44300	4410	16.99	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CO46-001	2085695.30	750660.20	Chromium	0	0.5	86.50	90	44300	4410	16.99	mg/kg
900-176	CM46-001	2085254.10	750748.30	Chromium	0	0	125.00	90	44300	4410	16.99	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Copper	0	0.5	34.70	300	71100	71100	18.06	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Copper	0	0.5	51.00	300	71100	71100	18.06	mg/kg
900-165	CP46-002	2085884.50	750630.40	Copper	0	0.5	52.30	300	71100	71100	18.06	mg/kg
900-165	CO46-000	2085633.50	750622.10	Copper	0	0.5	54.90	300	71100	71100	18.06	mg/kg
900-176	CM45-001	2085330.10	750502.20	Copper	0	0	55.00	300	71100	71100	18.06	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Copper	0	0.5	55.60	300	71100	71100	18.06	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Copper	0	0.5	58.30	300	71100	71100	18.06	mg/kg
900-176	CM46-002	2085319.50	750699.70	Copper	0	0	62.50	300	71100	71100	18.06	mg/kg
900-165	CP46-000	2085821.50	750662.60	Copper	0	0.5	67.40	300	71100	71100	18.06	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Copper	0	0.5	69.60	300	71100	71100	18.06	mg/kg
900-176	CN46-001	2085450.20	750649.50	Copper	0	0	70.40	300	71100	71100	18.06	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Copper	0	0.5	74.30	300	71100	71100	18.06	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Copper	0	0.5	74.50	300	71100	71100	18.06	mg/kg
000-101	CM47-004	2085314.60	750788.20	Copper	0	0	76.20	300	71100	71100	18.06	mg/kg
900-176	CM46-001	2085254.10	750748.30	Copper	0	0	86.50	300	71100	71100	18.06	mg/kg
900-176	CN46-000	2085444.40	750722.10	Copper	0	0	94.10	300	71100	71100	18.06	mg/kg
900-176	CN46-000	2085444.40	750722.10	Copper	0	0	94.10	300	71100	71100	18.06	mg/kg
900-176	CN45-001	2085516.80	750398.20	Copper	0	0	95.90	300	71100	71100	18.06	mg/kg
900-165	CP46-003	2085879.70	750701.80	Copper	0	0.5	96.90	300	71100	71100	18.06	mg/kg
900-176	CN46-002	2085387.30	750607.80	Copper	0	0	98.80	300	71100	71100	18.06	mg/kg
900-176	CN45-000	2085455.00	750503.10	Copper	0	0	99.80	300	71100	71100	18.06	mg/kg
900-165	CO46-001	2085695.30	750660.20	Copper	0	0.5	103.00	300	71100	71100	18.06	mg/kg
900-176	CN44-000	2085457.40	750357.90	Copper	0	0	113.00	300	71100	71100	18.06	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Copper	0	0.5	125.00	300	71100	71100	18.06	mg/kg
000-101	CN47-001	2085375.30	750825.60	Copper	0	0	132.00	300	71100	71100	18.06	mg/kg
900-165	CP46-001	2085826.20	750589.90	Copper	0	0.5	138.00	300	71100	71100	18.06	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Vanadium	0	0.5	61.70	100	13400	13400	45.59	mg/kg
900-176	CN46-000	2085444.40	750722.10	Vanadium	0	0	70.80	100	13400	13400	45.59	mg/kg
900-165	CP46-003	2085879.70	750701.80	Vanadium	0	0.5	70.90	100	13400	13400	45.59	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CO46-000	2085633.50	750622.10	Vanadium	0	0.5	71.80	100	13400	13400	45.59	mg/kg
900-176	CM46-002	2085319.50	750699.70	Vanadium	0	0	73.10	100	13400	13400	45.59	mg/kg
900-176	CM46-002	2085319.50	750699.70	Vanadium	0	0	73.10	100	13400	13400	45.59	mg/kg
000-101	CN47-001	2085375.30	750825.60	Vanadium	0	0	86.20	100	13400	13400	45.59	mg/kg
900-165	CO46-001	2085695.30	750660.20	Vanadium	0	0.5	87.30	100	13400	13400	45.59	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Vanadium	0	0.5	89.00	100	13400	13400	45.59	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Vanadium	0	0.5	89.60	100	13400	13400	45.59	mg/kg
900-176	CN46-001	2085450.20	750649.50	Vanadium	0	0	95.20	100	13400	13400	45.59	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Vanadium	0	0.5	105.00	100	13400	13400	45.59	mg/kg
900-165	CP46-000	2085821.50	750662.60	Vanadium	0	0.5	107.00	100	13400	13400	45.59	mg/kg
900-176	CN46-002	2085387.30	750607.80	Vanadium	0	0	108.00	100	13400	13400	45.59	mg/kg
900-176	CM45-001	2085330.10	750502.20	Vanadium	0	0	109.00	100	13400	13400	45.59	mg/kg
900-176	CN45-000	2085455.00	750503.10	Vanadium	0	0	109.00	100	13400	13400	45.59	mg/kg
900-176	CN45-001	2085516.80	750398.20	Vanadium	0	0	112.00	100	13400	13400	45.59	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Vanadium	0	0.5	126.00	100	13400	13400	45.59	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Vanadium	0	0.5	131.00	100	13400	13400	45.59	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Vanadium	0	0.5	132.00	100	13400	13400	45.59	mg/kg
900-176	CN44-000	2085457.40	750357.90	Vanadium	0	0	140.00	100	13400	13400	45.59	mg/kg
900-165	CP46-002	2085884.50	750630.40	Vanadium	0	0.5	141.00	100	13400	13400	45.59	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Vanadium	0	0.5	143.00	100	13400	13400	45.59	mg/kg
900-176	CM46-001	2085254.10	750748.30	Vanadium	0	0	158.00	100	13400	13400	45.59	mg/kg
900-165	CP46-001	2085826.20	750589.90	Vanadium	0	0.5	175.00	100	13400	13400	45.59	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Zinc	0	0.5	79.20	50	576000	576000	73.76	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Zinc	0	0.5	80.40	50	576000	576000	73.76	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Zinc	0	0.5	86.40	50	576000	576000	73.76	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Zinc	0	0.5	88.60	50	576000	576000	73.76	mg/kg
900-176	CM46-002	2085319.50	750699.70	Zinc	0	0	89.60	50	576000	576000	73.76	mg/kg
900-176	CM46-002	2085319.50	750699.70	Zinc	0	0	89.60	50	576000	576000	73.76	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Zinc	0	0.5	96.60	50	576000	576000	73.76	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Zinc	0	0.5	111.00	50	576000	576000	73.76	mg/kg
900-165	CP46-001	2085826.20	750589.90	Zinc	0	0.5	112.00	50	576000	576000	73.76	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-165	CQ46-004	2086008.20	750640.00	Zinc	0	0.5	115.00	50	576000	576000	73.76	mg/kg
900-165	CO46-000	2085633.50	750622.10	Zinc	0	0.5	116.00	50	576000	576000	73.76	mg/kg
900-176	CN46-002	2085387.30	750607.80	Zinc	0	0	120.00	50	576000	576000	73.76	mg/kg
900-176	CN46-001	2085450.20	750649.50	Zinc	0	0	128.00	50	576000	576000	73.76	mg/kg
000-101	CM48-008	2085305.10	751001.60	Zinc	0	0	161.00	50	576000	576000	73.76	mg/kg
900-165	CP46-003	2085879.70	750701.80	Zinc	0	0.5	201.00	50	576000	576000	73.76	mg/kg
900-176	CN44-000	2085457.40	750357.90	Zinc	0	0	210.00	50	576000	576000	73.76	mg/kg
900-176	CM45-001	2085330.10	750502.20	Zinc	0	0	214.00	50	576000	576000	73.76	mg/kg
900-165	CO46-001	2085695.30	750660.20	Zinc	0	0.5	216.00	50	576000	576000	73.76	mg/kg
900-176	CN45-000	2085455.00	750503.10	Zinc	0	0	292.00	50	576000	576000	73.76	mg/kg
900-176	CN45-001	2085516.80	750398.20	Zinc	0	0	304.00	50	576000	576000	73.76	mg/kg
900-176	CN46-000	2085444.40	750722.10	Zinc	0	0	332.00	50	576000	576000	73.76	mg/kg
900-176	CM46-001	2085254.10	750748.30	Zinc	0	0	3010.00	50	576000	576000	73.76	mg/kg
900-165	CP46-002	2085884.50	750630.40	Calcium	0	0.5	5480.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CM46-002	2085319.50	750699.70	Calcium	0	0	8030.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CN46-002	2085387.30	750607.80	Calcium	0	0	8660.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CN46-001	2085450.20	750649.50	Calcium	0	0	9410.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-005	2086003.60	750708.90	Calcium	0	0.5	9670.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CN45-000	2085455.00	750503.10	Calcium	0	0	10400.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CP46-000	2085821.50	750662.60	Calcium	0	0.5	10400.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CO46-000	2085633.50	750622.10	Calcium	0	0.5	10700.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-006	2086073.80	750599.60	Calcium	0	0.5	10800.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CM45-001	2085330.10	750502.20	Calcium	0	0	10900.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-002	2085950.00	750598.30	Calcium	0	0.5	11900.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CP46-003	2085879.70	750701.80	Calcium	0	0.5	12000.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-001	2085940.50	750668.40	Calcium	0	0.5	13600.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CN45-001	2085516.80	750398.20	Calcium	0	0	16600.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CN44-000	2085457.40	750357.90	Calcium	0	0	17400.00	3000	N/A	N/A	4467.00	mg/kg
000-101	CN48-000	2085369.50	750968.40	Calcium	0	0	17800.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CO46-001	2085695.30	750660.20	Calcium	0	0.5	19500.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CP46-001	2085826.20	750589.90	Calcium	0	0.5	20500.00	3000	N/A	N/A	4467.00	mg/kg

*Characterization Data Summary IHSS Group 000-I*

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IHSS	Location	Easting	Northing	Analyte	Depth Start (feet)	Depth End (feet)	Result	Reporting Limit	Tier I Action Level	Tier II Action Level	Background +2SD	Unit
900-176	CN46-000	2085444.40	750722.10	Calcium	0	0	21100.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-000	2085945.10	750742.30	Calcium	0	0.5	26200.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-004	2086008.20	750640.00	Calcium	0	0.5	28400.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ45-000	2085951.20	750524.50	Calcium	0	0.5	33700.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CM46-001	2085254.10	750748.30	Calcium	0	0	84100.00	3000	N/A	N/A	4467.00	mg/kg
900-165	CQ46-003	2086011.80	750563.80	Calcium	0	0.5	87100.00	3000	N/A	N/A	4467.00	mg/kg
900-176	CM46-001	2085254.10	750748.30	Selenium	0	0	1.96	20	9610	9610	1.22	mg/kg
900-165	CO46-001	2085695.30	750660.20	Phenanthrene	0	0.5	1400.00	710	N/A	N/A	N/A	ug/kg

N/A = not applicable

SD = standard deviation

**Table 4**  
**IHSS Group 000-1 Summary of Analytical Results**

Analyte	Total Number Samples Analyzed	Detection Frequency	Maximum Concentration	Average Concentration	Unit	Tier I Action Level	Tier II Action Level	Background Mean+2SD
4-Nitroaniline	37	0.00	2000.00	724.64	ug/kg	N/A	N/A	N/A
4-Nitrophenol	37	0.00	2000.00	838.11	ug/kg	15400000	15400000	N/A
Radium-226	23	100.00	4.20	1.32	pCi/g	N/A	N/A	N/A
Benzyl Alcohol	37	0.00	800.00	305.08	ug/kg	576000000	576000000	N/A
Plutonium-239/240	9	100.00	0.00	0.00	pCi/g	1429	252	0.07
P-Bromodiphenyl Ether	37	0.00	395.00	160.08	ug/kg	N/A	N/A	N/A
2,4-Dimethylphenol	37	0.00	395.00	156.96	ug/kg	38400000	38400000	N/A
4-Methylphenol	37	0.00	395.00	160.39	ug/kg	9610000	9610000	N/A
4-Chloroaniline	37	0.00	800.00	358.92	ug/kg	7680000	7680000	N/A
Bis(2-Chloroisopropyl)Ether	23	0.00	26.00	23.76	ug/kg	6400000	64000	N/A
Phenol	37	0.00	395.00	159.69	ug/kg	1000000000	1000000000	N/A
Pyridine	37	0.00	395.00	185.81	ug/kg	N/A	N/A	N/A
Bis(2-Chlorethyl)Ether	37	0.00	395.00	162.78	ug/kg	407000	4070	N/A
Bis(2-Chloroethoxy)Methane	37	0.00	395.00	174.01	ug/kg	N/A	N/A	N/A
Bis(2-Ethylhexyl)Phthalate	37	16.22	75000.00	2251.39	ug/kg	32000000	320000	N/A
Di-N-Octylphthalate	37	0.00	395.00	159.04	ug/kg	1000000000	38400000	N/A
Hexachlorobenzene	37	0.00	395.00	162.12	ug/kg	280000	2800	N/A
2,4,6-Tribromophenol	24	95.83	3800.00	2987.50	ug/kg	N/A	N/A	N/A
Anthracene	37	5.41	290.00	102.66	ug/kg	576000000	576000000	N/A
1,2,4-Trichlorobenzene	37	0.00	395.00	153.53	ug/kg	19200000	19200000	N/A
2,4-Dichlorophenol	37	0.00	395.00	160.39	ug/kg	5760000	5760000	N/A
2,4- Dinitrotoluene	37	0.00	395.00	156.65	ug/kg	659000	6590	N/A
Pyrene	37	40.54	1600.00	257.55	ug/kg	57600000	57600000	N/A
Dimethyl Phthalate	37	0.00	395.00	155.99	ug/kg	1000000000	1000000000	N/A
Dibenzofuran	37	5.41	70.00	151.82	ug/kg	7680000	7680000	N/A
Potassium-40	23	100.00	24.00	16.91	pCi/g	N/A	N/A	N/A
Cesium-134	23	100.00	0.16	0.02	pCi/g	N/A	N/A	0.31

*Characterization Data Summary IHSS Group 000-I*

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Analyte	Total Number Samples Analyzed	Detection Frequency	Maximum Concentration	Average Concentration	Unit	Tier I Action Level	Tier II Action Level	Background Mean+2SD
Polonium-210	23	100.00	5000.00	652.17	pCi/g	N/A	N/A	N/A
Thorium-230	23	100.00	30.00	1.30	pCi/g	N/A	N/A	N/A
Americium-241	23	100.00	4.50	0.62	pCi/g	215	38	0.02
Bismuth-214	23	100.00	0.87	0.64	pCi/g	N/A	N/A	N/A
Bismuth-212	23	100.00	1.90	0.70	pCi/g	N/A	N/A	N/A
Thallium-208	23	100.00	0.76	0.42	pCi/g	N/A	N/A	N/A
Thorium-231	23	100.00	4.70	0.68	pCi/g	N/A	N/A	N/A
Lead-214	23	100.00	0.89	0.61	pCi/g	N/A	N/A	N/A
Lead-212	23	100.00	2.00	1.17	pCi/g	N/A	N/A	N/A
Protactinium-234	23	100.00	0.00	0.00	pCi/g	N/A	N/A	N/A
Protactinium-234m	23	100.00	0.00	0.00	pCi/g	N/A	N/A	N/A
Uranium-235	23	100.00	0.32	0.14	pCi/g	135	24	0.09
Terphenyl-D14	24	95.83	2600.00	2020.83	ug/kg	N/A	N/A	N/A
Benzo(Ghi)Perylene	37	18.92	490.00	162.09	ug/kg	N/A	N/A	N/A
Indeno(1,2,3-Cd)Pyrene	37	10.81	440.00	165.03	ug/kg	614000	6140	N/A
Benzo(B)Fluoranthene	37	27.03	580.00	171.80	ug/kg	614000	6140	N/A
Fluoranthene	37	37.84	1900.00	270.43	ug/kg	76800000	76800000	N/A
Benzo(K)Fluoranthene	37	24.32	750.00	184.12	ug/kg	6140000	61400	N/A
Acenaphthylene	37	0.00	200.00	85.18	ug/kg	N/A	N/A	N/A
Chrysene	37	43.24	790.00	178.03	ug/kg	61400000	614000	N/A
2-Fluorobiphenyl	24	95.83	2300.00	1904.17	ug/kg	N/A	N/A	N/A
O-Fluorophenol	24	95.83	3700.00	2895.83	ug/kg	N/A	N/A	N/A
Bis(2-Chloroisopropyl)Ether	14	0.00	395.00	373.21	ug/kg	N/A	N/A	N/A
Nitrobenzene-D5	24	95.83	2600.00	2058.33	ug/kg	N/A	N/A	N/A
Phenol-D5	24	95.83	3700.00	2908.33	ug/kg	N/A	N/A	N/A
Benzo(A)Pyrene	37	35.14	750.00	174.50	ug/kg	61400	614	N/A
2,4-Dinitrophenol	37	0.00	2000.00	830.81	ug/kg	384000000	3840000	N/A
4,6-Dinitro-2-Methylphenol	37	0.00	2000.00	745.27	ug/kg	192000	192000	N/A
Dibenz(A,H)Anthracene	37	0.00	395.00	162.46	ug/kg	61400	614	N/A
1,3-Dichlorobenzene	37	0.00	395.00	155.59	ug/kg	N/A	N/A	N/A

*Characterization Data Summary IHSS Group 000-I*

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Analyte	Total Number Samples Analyzed	Detection Frequency	Maximum Concentration	Average Concentration	Unit	Tier I Action Level	Tier II Action Level	Background Mean+2SD
Benzo(A)Anthracene	37	43.24	750.00	171.39	ug/kg	614000	6140	N/A
4-Chloro-3-Methylphenol	37	0.00	800.00	294.18	ug/kg	N/A	N/A	N/A
2,6-Dinitrotoluene	37	0.00	395.00	164.18	ug/kg	659000	6590	N/A
N-Nitrosodi-N-Propylamine	37	0.00	395.00	165.91	ug/kg	64000	640	N/A
Benzoic Acid	37	0.00	2000.00	800.27	ug/kg	1000000000	1000000000	N/A
Hexachloroethane	37	0.00	395.00	163.47	ug/kg	125000000	320000	N/A
4-Chlorophenyl Phenyl Ether	37	0.00	395.00	157.64	ug/kg	N/A	N/A	N/A
Iron	29	100.00	41400.00	29534.48	mg/kg	576000	576000	18037.00
Lead	29	100.00	236.00	42.95	mg/kg	1000	1000	54.62
Manganese	29	100.00	701.00	471.52	mg/kg	83600	83600	365.08
Molybdenum	29	100.00	0.00	0.00	mg/kg	9610	9610	N/A
Nickel	29	100.00	62.30	39.19	mg/kg	38400	38400	14.91
Potassium	29	100.00	33000.00	22431.03	mg/kg	N/A	N/A	2967.20
Silver	29	100.00	0.00	0.00	mg/kg	9610	9610	N/A
Strontium	29	100.00	483.00	213.72	mg/kg	1000000	1000000	48.94
Tin	29	100.00	13.90	3.23	mg/kg	1000000	1000000	N/A
Actinium	23	100.00	2.10	1.21	pCi/g	N/A	N/A	N/A
Antimony	29	100.00	15.20	2.29	mg/kg	768	768	N/A
Arsenic	29	100.00	21.10	11.81	mg/kg	299	3	10.09
Barium	29	100.00	1050.00	734.86	mg/kg	133000	133000	141.26
Cadmium	29	100.00	41.40	4.58	mg/kg	1920	1920	1.61
Chromium	29	100.00	125.00	41.89	mg/kg	44300	4410	16.99
Cobalt	29	100.00	0.00	0.00	mg/kg	115000	115000	10.91
Copper	29	100.00	138.00	82.49	mg/kg	71100	71100	18.06
Vanadium	29	100.00	175.00	112.99	mg/kg	13400	13400	45.59
Zinc	29	100.00	3010.00	265.53	mg/kg	576000	576000	73.76
Calcium	29	100.00	115000.00	23939.66	mg/kg	N/A	N/A	4467.00
Uranium 238/234	23	100.00	4.90	2.58	pCi/g	N/A	N/A	N/A
Hexachlorocyclopentadiene	37	0.00	395.00	155.99	ug/kg	13300000	13300000	N/A
Selenium	29	100.00	1.96	0.15	mg/kg	9610	9610	1.22

*Characterization Data Summary IHSS Group 000-I*

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Analyte	Total Number Samples Analyzed	Detection Frequency	Maximum Concentration	Average Concentration	Unit	Tier I Action Level	Tier II Action Level	Background Mean+2SD
Isophorone	37	0.00	395.00	156.96	ug/kg	1000000000	4720000	N/A
Acenaphthene	37	5.41	180.00	90.19	ug/kg	115000000	115000000	N/A
Diethyl Phthalate	37	0.00	395.00	152.53	ug/kg	1000000000	1000000000	N/A
Di-N-Butyl Phthalate	37	0.00	395.00	162.46	ug/kg	N/A	N/A	N/A
Phenanthrene	37	40.54	1400.00	219.81	ug/kg	N/A	N/A	N/A
Butyl Benzylphthalate	37	5.41	360.00	172.07	ug/kg	384000000	384000000	N/A
N-Nitrosodiphenylamine	37	0.00	395.00	154.62	ug/kg	365000000	915000	N/A
Fluorene	37	5.41	140.00	156.88	ug/kg	76800000	76800000	N/A
Hexachlorobutadiene	37	0.00	395.00	154.28	ug/kg	5750000	57500	N/A
Pentachlorophenol	37	0.00	2000.00	725.96	ug/kg	14900000	37400	N/A
2,4,6-Trichlorophenol	37	0.00	395.00	155.27	ug/kg	159000000	407000	N/A
2-Nitroaniline	37	0.00	2000.00	720.47	ug/kg	115000	115000	N/A
2-Nitrophenol	37	0.00	395.00	156.31	ug/kg	N/A	N/A	N/A
Naphthalene	37	0.00	395.00	155.59	ug/kg	76800000	76800000	N/A
2-Methylnaphthalene	37	0.00	395.00	153.19	ug/kg	76800000	76800000	N/A
2-Chloronaphthalene	37	0.00	395.00	155.27	ug/kg	154000000	154000000	N/A
3,3'-Dichlorobenzidine	37	0.00	800.00	369.59	ug/kg	996000	9960	N/A
2-Methylphenol	37	0.00	395.00	171.47	ug/kg	96100000	96100000	N/A
2-Chlorophenol	37	0.00	395.00	159.36	ug/kg	9610000	9610000	N/A
2,4,5-Trichlorophenol	37	0.00	395.00	156.96	ug/kg	192000000	192000000	N/A
Nitrobenzene	37	0.00	395.00	166.59	ug/kg	961000	961000	N/A
3-Nitroaniline	37	0.00	2000.00	729.11	ug/kg	N/A	N/A	N/A
Aroclor 1016	1	0.00	34	34	ug/kg	2240.00	224000.00	N/A
Aroclor 1221	1	0.00	34	34	ug/kg	2240.00	224000.00	N/A
Aroclor 1232	1	0.00	34	34	ug/kg	2240.00	224000.00	N/A
Aroclor 1242	1	0.00	34	34	ug/kg	2240.00	224000.00	N/A
Aroclor 1248	1	0.00	34	34	ug/kg	2240.00	224000.00	N/A
Aroclor 1254	1	100.00	66	66	ug/kg	2240.00	224000.00	N/A
Aroclor 1260	1	100.00	78	78	ug/kg	2240.00	224000.00	N/A

SD = standard deviation

N/A = not applicable



**3.0 DEVIATIONS FROM PLANNED SAMPLING SPECIFICATIONS**

Deviations from the planned sampling specifications described in IASAP Addendum #IA-03-02 (DOE 2002a) are presented in the following table.

**Table 5**  
**IHSS Group 000-1 Deviations from Planned Sampling Specifications**

Location Code	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Comments
CM47-003	2085314.67	750929.01	2085375.3	750825.6	Sample location deviations resulted from the location of roll-off bins or auger refusal.
CO46-000	2085633.51	750622.07	2085945.1	750742.3	
CM46-002	2085319.43	750713.68	2085319.5	750699.7	
CM45-001	2085330.14	750497.15	2085330.1	750502.2	

#### **4.0 DATA QUALITY ASSESSMENT**

The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001), were achieved based on the Data Quality Assessment (DQA) provided in the following sections. The DQO/DQA process ensures that the type, quantity, and quality of environmental data used in decision making are defensible, with emphasis on attaining adequate (statistical) confidence in the decisions. The DQO/DQA process is based on the following guidance and requirements:

- EPA QA/G-4, 1994a, Guidance for the Data Quality Objective Process;
- EPA QA/G-9, 1998, Guidance for the Data Quality Assessment Process; Practical Methods for Data Analysis; and
- DOE Order 414.1A, 1999, Quality Assurance.

Verification and validation (V&V) of the data are the primary components of the DQA. The final data are compared with original project DQOs and evaluated with respect to project decisions; uncertainty within the decisions; and quality criteria required for the data, specifically precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). Validation criteria are consistent with the following RFETS-specific documents and industry guidelines:

- EPA 540/R-94/012, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review;
- EPA 540/R-94/013, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and
- Kaiser-Hill Company, L.L.C.(K-H) V&V Guidelines:
  - General Guidelines for Data Verification and Validation, DA-GR01-v1, 1997a.
  - V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v1, 1998.
  - V&V Guidelines for Volatile Organics, DA-SS01-v1, 1997b.
  - V&V Guidelines for Semivolatile Organics, DA-SS02-v1, 1997c.
  - V&V Guidelines for Metals, DA-SS05-v1, 1997d
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

#### ***DQO Decisions***

Consistent with original DQO decision rules of the project, a sum-of-ratios (SOR) calculation was performed on each sample acquired from the latest evolution of samples from IHSS Group 000-1. Several nonradiological samples exceeded an SOR of 1 in the surface soil relative to RFCA Tier II ALs. These elevated results are primarily due to

arsenic (IHSSs 900-165 and 900-176), PCBs (IHSS 900-176), and benzo(a)pyrene (IHSS 900-165). The SOR did not exceed 1 relative to RFCA Tier I AL.

Use of the applicable sample power calculation (EPA QA/G-4), lognormal methods, or nonparametric, such as the Sign Test in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (EPA, et al., 1997) would yield better than a 95% confidence that enough samples were acquired to conclude that each analyte is below its respective RFCA Tier I AL.

### ***Verification and Validation of Results***

Verification ensures that data produced and used by the project are documented and traceable in accordance with quality requirements. Validation consists of a technical review of all data that directly support the project decisions so that any limitations of the data relative to project goals are delineated and the associated data are qualified accordingly. The V&V process defines the criteria that constitute data quality, namely PARCCS parameters. Data traceability and archival are also addressed. V&V criteria include the following:

- Chain-of-custody;
- Preservation and hold-times;
- Instrument calibrations;
- Preparation blanks;
- Interference check samples (metals);
- Matrix spikes/matrix spike duplicates (MS/MSD);
- Laboratory control samples (LCS);
- Field duplicate measurements;
- Chemical yield (radiochemistry);
- Required quantitation limits/minimum detectable activities (sensitivity of chemical and radiochemical measurements, respectively); and
- Sample analysis and preparation methods.

Evaluation of V&V criteria ensures that PARCCS parameters are satisfactory (i.e., within tolerances acceptable to the project). Satisfactory V&V of laboratory quality controls are captured through application of validation “flags” or qualifiers to individual records. Validation results are summarized in the “Completeness” subsection.

Field sampling was conducted according to the approved IASAP, including related SOPs and addenda. Raw hardcopy data (e.g., individual analytical data packages) are currently filed by RIN and are maintained by Kaiser-Hill Analytical Services Division (K-H ASD); older hardcopies may reside in the Federal Center in Lakewood, Colorado. Electronic data are stored in the RFETS Soil and Water Database (SWD).

### ***Precision and Accuracy***

Precision and accuracy of laboratory results are adequate based on validation frequencies and results, which are tabulated in the “Completeness” section (see exceptions related to gamma spectroscopy and XRF metals).

Sampling precision is indeterminate as no field duplicate samples were acquired. Frequency of duplicate collection was less than the DQO of  $\geq 5\%$ .

Field blanks collected during the project indicate no false positives in the data set due to cross-contamination.

#### ***Representativeness***

Samples acquired for the project are representative based on the types, number, and location of samples acquired relative to the site-specific history. Other criteria that corroborate representativeness include:

- Implementation of industry-standard chain-of-custody protocols;
- Compliance with sample preservation and hold times; and
- Compliance with documented and site-approved sampling plans and procedures, including SW-846 analytical methods.

#### ***Completeness***

Sampling completeness was evaluated through an inventory of the number and types of samples acquired for IHSS Group 000-1. Specifically, to determine if enough samples were collected and if valid results were produced to make project decisions. The following number of surface soil samples were evaluated relative to the analytical suites: metals (24), radionuclides (24), SVOCs (24), and PCBs (2).

Beryllium and lithium are not included in the metals suite in subsurface soils (SW6200, XRF). Radionuclides were determined through gamma spectroscopy, where Plutonium-239/240 and Uranium-233/234 are inferred from Americium-241 and Uranium-238, respectively.

Satisfactory V&V are indicated by a 10% (or greater) validation frequency of all results by method, and <10% rejection of those records validated. Table 6 indicates that validation and rejection frequencies were acceptable for all listed analytical suites except gamma spectroscopy and metals (by XRF). Validation of gamma spectroscopy and metals records is in progress.

#### ***Comparability***

All results presented are comparable with nation-wide CERCLA data and DOE complex-wide environmental data. This comparability is based on:

1. Use of standardized engineering units in the reporting of measurement results;
2. Consistent sensitivities of measurements (generally  $\leq \frac{1}{2}$  corresponding action levels); and,
3. Use of site-approved procedures, work plans, and quality controls (e.g., Contractual Statements of Work for lab analyses).

**Table 6**  
**IHSS Group 000-1 Summary of Validated Records**

Validation Qualifier Code	Total Number of Samples	PCBs SW-846 8082	SVOCs SW-846 8270
Null	-	-	-
1	166	6	160
J1	1	-	1
V1	1074	21	1053
Total:	1241	27	1214
Percent Validated:	87%	78%	87%
Percent Rejected:	0%	0%	0%

Null, 1, N, Y, Z = not validated

V = valid without qualification

J = estimated (semi-quantitative) value

### ***Sensitivity***

Reporting limits (RLs) in units of ug/kg (parts per billion or ppb) for organics, mg/kg (parts per million or ppm) for metals, and pCi/g for radionuclides were compared with RFCA Tier I and Tier II ALs on a record-by-record basis. The number of samples is given with respect to each analyte and sample type. “Adequate” sensitivity is defined as an RL less than the analyte’s associated action level, ideally <1/2 the AL. Adequate sensitivities of analytical methods were attained for all results except for the following analytes and number of samples: arsenic (24), benzo(a)pyrene (1), and dibenz(a,h)anthracene (1).

### ***Summary***

Data quality is acceptable for project decisions based on the V&V criteria cited and with the qualifications given. Validation frequency needs to be completed for metals and gamma spectroscopy. Metals analysis should be complemented with additional arsenic and beryllium results, as necessary, for comparison with applicable ALs.

## **5.0 REFERENCES**

- DOE, 1992-2001, Historical Release Reports for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado, June.
- DOE, 1999, Order 414.1A, Quality Assurance.
- DOE, 2000, Rocky Flats Cleanup Agreement (RFCA), Attachment 5, March.
- DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.
- DOE, 2002a, Industrial Area Sampling and Analysis Plan Addendum #IA-03-02, Rocky Flats Environmental Technology Site, Golden, Colorado, November.
- DOE, 2002b, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January.
- EPA QA/G-4, 1994a, Guidance for the Data Quality Objective Process.
- EPA 540/R-94/012, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review.
- EPA 540/R-94/013, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review.
- EPA QA/G-9, 1998, Guidance for the Data Quality Assessment Process; Practical Methods for Data Analysis.
- Kaiser-Hill (K-H), 1997a, General Guidelines for Data Verification and Validation, DA-GR01-v1, December.
- K-H, 1997b, V&V Guidelines for Volatile Organics, DA-SS01-v1, December.
- K-H, 1997c, V&V Guidelines for Semivolatile Organics, DA-SS02-v1, December.
- K-H, 1997d, V&V Guidelines for Metals, DA-SS05-v1, December.
- K-H, 1998, V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v1, February.
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

**ENCLOSURE**

**IHSS GROUP 000-1 RAW DATA**