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Final Characterization Data Summary Reports FY2002



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IHSS Group 500-6

IHSS Group 600-6

IHSS Group 700-12

**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

**Characterization Data Summary
IHSS Group 400-10**

September 2002

**Characterization Data Summary
IHSS Group 400-10**

September 2002

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Appendix

Appendix A - IHSS Group 400-10 Raw Data

ACRONYMS

AL	action level
AOC	Area of Concern
AR	Administrative Record
BZ	Buffer Zone
CAS	Chemical Abstract Service
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
ft	feet
IA	Industrial Area
HPGe	High-Purity Germanium
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L L C
MDL	method detection limit
mg/kg	milligram per kilogram
NA	not applicable
ND	not detected
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
pCi/g	picocurie per gram
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RSOP	RFCA Standard Operating Protocol
SAP	Sampling and Analysis Plan
SOR	sum of ratios
SVOC	semivolatile organic compound
UBC	Under Building Contamination
ug/kg	microgram per kilogram
V&V	verification and validation
VOC	volatile organic compound

ACRONYMS

AL	action level
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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
ft	feet
IA	Industrial Area
HPGe	High-Purity Germanium
IASAP	Industrial Area Sampling and Analysis Plan
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SOR	sum of ratios
SVOC	semivolatile organic compound
UBC	Under Building Contamination
ug/kg	microgram per kilogram
V&V	verification and validation
VOC	volatile organic compound

1.0 INTRODUCTION

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 400-10 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001a), IASAP Addendum #IA-02-01 (DOE 2001b), and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002a). Notification of the planned activities was provided in ER RSOP Notification #02-01 (DOE 2002b), which was approved by the Colorado Department of Public Health and Environment (CDPHE) on January 16, 2002.

IHSS Group 400-10 consists of the following Potential Area of Concern (PAC) and IHSSs, Under Building Contamination (UBC) sites

- PAC 400-807 – Sandblasting Area,
- IHSS 120 2 – Fiberglass Area West of Building 664, and
- IHSS 600-161 – Radioactive Site West of Building

The location of IHSS Group 400-10 is shown on Figure 1, and the PAC and IHSSs are shown on Figure 2.

2.0 SITE CHARACTERIZATION

IHSS Group 100-4 consists of historical knowledge (DOE 1992, DOE 2001a) and additional sampling at locations with specifications as described in IASAP Addendum #IA-02-01 (DOE 2001b). The sampling specifications for the characterization samples collected are listed in Table 1. The location of these samples and analytical results are shown on Figures 3 and 4. Analytical results greater than background mean plus two standard deviations or method detection limits are presented in Table 2. Summary statistics are presented in Tables 3 through 6. Deviations from planned sampling specifications are presented in Table 7. A summary of validated analytical records is presented in Table 8 and exceptions to the data validation are presented in Table 9. Raw data are presented in Appendix A.

1.0 INTRODUCTION

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 400-10 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001a), IASAP Addendum #IA-02-01 (DOE 2001b), and the Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002a). Notification of the planned activities was provided in ER RSOP Notification #02-01 (DOE 2002b), which was approved by the Colorado Department of Public Health and Environment (CDPHE) on January 16, 2002.

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- PAC 400-807 – Sandblasting Area,
- IHSS 120 2 – Fiberglass Area West of Building 664, and
- IHSS 600-161 – Radioactive Site West of Building

The location of IHSS Group 400-10 is shown on Figure 1, and the PAC and IHSSs are shown on Figure 2.

2.0 SITE CHARACTERIZATION

IHSS Group 100-4 consists of historical knowledge (DOE 1992, DOE 2001a) and additional sampling at locations with specifications as described in IASAP Addendum #IA-02-01 (DOE 2001b). The sampling specifications for the characterization samples collected are listed in Table 1. The location of these samples and analytical results are shown on Figures 3 and 4. Analytical results greater than background mean plus two standard deviations or method detection limits are presented in Table 2. Summary statistics are presented in Tables 3 through 6. Deviations from planned sampling specifications are presented in Table 7. A summary of validated analytical records is presented in Table 8 and exceptions to the data validation are presented in Table 9. Raw data are presented in Appendix A.

Table 1
IHSS Group 400-10—Characterization Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
400-10	PAC 400-807 – Sandblasting Area	BZ35-A001	2082600 04	748530 03	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A002	2082628 70	748549 76	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A003	2082633 14	748514 01	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A004	2082613 79	748483 81	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A005	2082530 53	748477 75	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A006	2082539	748524	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A007	2082562 79	748544 18	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
	IHSS 120 2 – Fiberglass Area West of Building 664	BZ35-B008	2082651	748444	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-C008	2082651	748444	subsurface soil	C, D, E, F	VOCs	8260
		BZ35-B010	2082642	748372	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-B010	2082642	748372	subsurface soil	C, D, E, F	VOCs	8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	C, D, E, F	VOCs	8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	C, D, E, F	VOCs	8260

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IHSS Group 400-10—Characterization Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
400-10	PAC 400-807 – Sandblasting Area	BZ35-A001	2082600 04	748530 03	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A002	2082628 70	748549 76	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A003	2082633 14	748514 01	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A004	2082613 79	748483 81	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A005	2082530 53	748477 75	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A006	2082539	748524	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
		BZ35-A007	2082562 79	748544 18	surface soil	A	Metals Radionuclides SVOCs	6010 Alpha Spec 8270
	IHSS 120 2 – Fiberglass Area West of Building 664	BZ35-B008	2082651	748444	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-C008	2082651	748444	subsurface soil	C, D, E, F	VOCs	8260
		BZ35-B010	2082642	748372	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-B010	2082642	748372	subsurface soil	C, D, E, F	VOCs	8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	B	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	C, D, E, F	VOCs	8260
		BZ34-B001	2082558 48	748334 14	subsurface soil	C, D, E, F	VOCs	8260

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
	IHSS 161 - Radioactive Site West of Building 664	BZ35-B014	2082640	748395		SAMPLE NOT TAKEN		
		BZ35-B014	2082640	748395		SAMPLE NOT TAKEN		
		BY34-B001	2082524 00	748359 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B002	2082528 00	748323 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B003	2082539 00	748279 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B004	2082536 00	748252 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B005	2082507 00	748232 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B006	2082508 00	748260 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B007	2082496 00	748326 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B008	2082478 00	748223 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B009				SAMPLE NOT TAKEN		
		BY34-B011	2082499	748302	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY35-B001	2082520	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY35-B002	2082491	748374	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
	IHSS 161 - Radioactive Site West of Building 664	BZ35-B014	2082640	748395		SAMPLE NOT TAKEN		
		BZ35-B014	2082640	748395		SAMPLE NOT TAKEN		
		BY34-B001	2082524 00	748359 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B002	2082528 00	748323 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B003	2082539 00	748279 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B004	2082536 00	748252 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B005	2082507 00	748232 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B006	2082508 00	748260 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B007	2082496 00	748326 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B008	2082478 00	748223 00	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY34-B009				SAMPLE NOT TAKEN		
		BY34-B011	2082499	748302	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY35-B001	2082520	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BY35-B002	2082491	748374	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
		BY35-B003	2082487	748410	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-001	2082543	748339	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B002	2082656	748302	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B003	2082660	748265	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B004	2082663	748229	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B007	2082634	748205	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B008	2082632	748244	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B009	2082623	748315	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B010	2082619	748351	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B011	2082591	748319	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-012	2082594	748294	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-013	2082598	748259	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

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IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
		BY35-B003	2082487	748410	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-001	2082543	748339	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B002	2082656	748302	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B003	2082660	748265	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B004	2082663	748229	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B007	2082634	748205	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B008	2082632	748244	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B009	2082623	748315	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B010	2082619	748351	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-B011	2082591	748319	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-012	2082594	748294	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-013	2082598	748259	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
		BZ34-014	2082605	748227	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-017	2082570	748219	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-018	2082569	748237	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-019	2082565	748273	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-020	2082567	748301	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-021	2082559	748334	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-022	2082539	748221	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-0034	2082662	748229			SAMPLE NOT TAKEN	
		BZ35-011	2082615	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-012	2082582	748402	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-013	2082553	748380	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-014	2082640	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-015	2082586	748355	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
		BZ34-014	2082605	748227	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-017	2082570	748219	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-018	2082569	748237	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-019	2082565	748273	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-020	2082567	748301	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-021	2082559	748334	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-022	2082539	748221	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ34-0034	2082662	748229			SAMPLE NOT TAKEN	
		BZ35-011	2082615	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-012	2082582	748402	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-013	2082553	748380	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-014	2082640	748395	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260
		BZ35-015	2082586	748355	subsurface soil	B, C, D, E, F	Metals Radionuclides VOCs	6010 Alpha Spec 8260

Table 2
IHSS Group 400-10—Characterization Data Greater Than Background Mean Plus Two Standard Deviations or Method Detection Limit

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+2SD	Tier I Action Level	Tier II Action Level	Unit
400-10	PAC 400-807 – Sandblasting Area	BZ35-001	2082600	748530	surface soil	0.00	0.50	Aluminum	24,400	16,902	1,000,000	1,000,000	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Beryllium	11	0.97	133	1.33	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Chromium	19.8	16.99	44,300	44,300	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Lithium	12.4	11.55	40,900	40,900	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Nickel	18.8	14.91	40,900	40,900	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Uranium-235	0.22	0.094	113	24	pCi/g
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Copper	33.4	18.06	75,600	75,600	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Iron	28,800	18,037	613,000	613,000	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Manganese	788	365.08	66,800	66,800	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Uranium-235	0.157	0.0939	113	24	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Copper	20.5	18.06	75,600	75,600	mg/kg
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Iron	20,900	18,037	613,000	613,000	mg/kg
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Uranium-235	0.26	0.09	113	24	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Uranium-238	3.34	2	506	103	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Zinc	80	73.76	613,000	613,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Aluminum	21,700	16,902	1,000,000	1,000,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Beryllium	11	0.97	133	1.33	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Chromium	21.3	16.99	44,300	44,300	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Iron	18,400	18,037	613,000	613,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Lithium	15	11.55	40,900	40,900	mg/kg
BZ35-004	2082613	748483	surface soil	0.00	0.50	Nickel	17.1	14.91	40,900	40,900	mg/kg		
BZ35-004	2082613	748483	surface soil	0.00	0.50	Zinc	81.3	73.76	613,000	613,000	mg/kg		
BZ35-006	2082539	748524	surface soil	0.00	0.80	Lithium	12.6	11.55	40,900	40,900	pCi/g		
BZ35-006	2082539	748524	surface soil	0.00	0.80	Uranium-235	0.14	0.09	113	24	pCi/g		

Table 2
IHSS Group 400-10—Characterization Data Greater Than Background Mean Plus Two Standard Deviations or Method Detection Limit

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+2SD	Tier I Action Level	Tier II Action Level	Unit
400-10	PAC 400-807 – Sandblasting Area	BZ35-001	2082600	748530	surface soil	0.00	0.50	Aluminum	24,400	16,902	1,000,000	1,000,000	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Beryllium	11	0.97	133	1.33	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Chromium	19.8	16.99	44,300	44,300	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Lithium	12.4	11.55	40,900	40,900	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Nickel	18.8	14.91	40,900	40,900	mg/kg
		BZ35-001	2082600	748530	surface soil	0.00	0.50	Uranium-235	0.22	0.094	113	24	pCi/g
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Copper	33.4	18.06	75,600	75,600	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Iron	28,800	18,037	613,000	613,000	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Manganese	788	365.08	66,800	66,800	mg/kg
		BZ35-002	2082628	748549	surface soil	0.00	0.50	Uranium-235	0.157	0.0939	113	24	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Copper	20.5	18.06	75,600	75,600	mg/kg
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Iron	20,900	18,037	613,000	613,000	mg/kg
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Uranium-235	0.26	0.09	113	24	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Uranium-238	3.34	2	506	103	pCi/g
		BZ35-003	2082633	748514	surface soil	0.00	0.50	Zinc	80	73.76	613,000	613,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Aluminum	21,700	16,902	1,000,000	1,000,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Beryllium	11	0.97	133	1.33	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Chromium	21.3	16.99	44,300	44,300	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Iron	18,400	18,037	613,000	613,000	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Lithium	15	11.55	40,900	40,900	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Nickel	17.1	14.91	40,900	40,900	mg/kg
		BZ35-004	2082613	748483	surface soil	0.00	0.50	Zinc	81.3	73.76	613,000	613,000	mg/kg
		BZ35-006	2082539	748524	surface soil	0.00	0.80	Lithium	12.6	11.55	40,900	40,900	pCi/g
		BZ35-006	2082539	748524	surface soil	0.00	0.80	Uranium-235	0.14	0.09	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+ 2SD	Tier I Action Level	Tier II Action Level	Unit
	IHSS 120 2 - Fiberglass Area West of Building 664	BZ35-006	2082539	748524	surface soil	0 00	0 80	Uranium-238	2 06	2	506	103	pCi/g
		BZ35-014	2082640	748395	subsurface soil			Toluene	5	NA	707,000	7 070	ug/mg
	IHSS 161 - Radioactive Area West of Building 664	BY34-001	2082524	748359	subsurface soil	4 00	6 00	Uranium-235	0 17	0 12	113	24	pCi/g
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Uranium-238	3 09	1 49	506	103	pCi/g
		BY34-001	2082524	748359	subsurface soil	6 00	8 00	Uranium-238	3 11	1 49	506	103	pCi/g
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Arsenic	21 60	13 14	381	3 81	mg/kg
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Cobalt	38 10	29 04	115,000	115,000	mg/kg
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Aluminum	41,000 00	35 373 17	1 000 000	1 000 000	mg/kg
		BY34-002	2082528	748323	subsurface soil	3 00	5 00	Uranium-235	0 16	0 12	113	24	pCi/g
		BY34-002	2082528	748323	subsurface soil	3 00	5 00	Uranium-238	2 66	1 49	506	103	pCi/g
		BY34-002	2082528	748323	subsurface soil	5 00	7 00	Uranium-238	3 21	1 49	506	103	pCi/g
		BY34-002	2082528	748323	subsurface soil	5 0	7 0	Acetone	5 80	NA	27 200 000	272 000	ug/kg
		BY34-002	2082528	748323	subsurface soil	5 0	7 0	Methylene Chloride	2 20	NA	578	5 78	ug/kg
		BY34-002	2082528	748323	subsurface soil	3 0	5 0	Methylene Chloride	2 60	NA	578	5 78	ug/kg
		BY34-003	2082539 00	748279 00	subsurface soil	6 50	8 50	Uranium-235	0 12	0 12	113	24	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	8 50	10 50	Uranium-238	1 68	1 49	506	103	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	6 50	8 50	Uranium-238	2 45	1 49	506	103	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	6 5	8 5	Acetone	5 90	NA	27,200 000	272,000	ug/kg
	BY34-003	2082539 00	748279 00	subsurface soil	8 5	10 5	Methylene Chloride	1 20	NA	578	5 78	ug/kg	
	BY34-003	2082539 00	748279 00	subsurface soil	6 5	8 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg	
	BY34-004	2082536 00	748252 00	subsurface soil	6 50	8 50	Uranium-235	0 16	0 12	113	24	pCi/g	
	BY34-004	2082536 00	748252 00	subsurface soil	6 50	8 50	Uranium-238	1 76	1 49	506	103	pCi/g	
	BY34-004	2082536 00	748252 00	subsurface soil	4 50	6 50	Uranium-238	2 09	1 49	506	103	pCi/g	
	BY34-004	2082536 00	748252 00	subsurface soil	4 50	6 50	Aluminum	40 800 00	35,373 17	1,000 000	1 000 000	mg/kg	
	BY34-004	2082536 00	748252 00	subsurface soil	4 5	6 5	Acetone	15 000	NA	27,200 000	272 000	ug/kg	
	BY34-004	2082536 00	748252 00	subsurface soil	6 5	8 5	Methylene Chloride	1 200	NA	578	5 78	ug/kg	

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+ 2SD	Tier I Action Level	Tier II Action Level	Unit
	IHSS 120 2 - Fiberglass Area West of Building 664	BZ35-006	2082539	748524	surface soil	0 00	0 80	Uranium-238	2 06	2	506	103	pCi/g
		BZ35-014	2082640	748395	subsurface soil			Toluene	5	NA	707,000	7 070	ug/mg
	IHSS 161 - Radioactive Area West of Building 664	BY34-001	2082524	748359	subsurface soil	4 00	6 00	Uranium-235	0 17	0 12	113	24	pCi/g
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Uranium-238	3 09	1 49	506	103	pCi/g
		BY34-001	2082524	748359	subsurface soil	6 00	8 00	Uranium-238	3 11	1 49	506	103	pCi/g
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Arsenic	21 60	13 14	381	3 81	mg/kg
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Cobalt	38 10	29 04	115,000	115,000	mg/kg
		BY34-001	2082524	748359	subsurface soil	4 00	6 00	Aluminum	41,000 00	35 373 17	1 000 000	1 000 000	mg/kg
		BY34-002	2082528	748323	subsurface soil	3 00	5 00	Uranium-235	0 16	0 12	113	24	pCi/g
		BY34-002	2082528	748323	subsurface soil	3 00	5 00	Uranium-238	2 66	1 49	506	103	pCi/g
		BY34-002	2082528	748323	subsurface soil	5 00	7 00	Uranium-238	3 21	1 49	506	103	pCi/g
		BY34-002	2082528	748323	subsurface soil	5 0	7 0	Acetone	5 80	NA	27 200 000	272 000	ug/kg
		BY34-002	2082528	748323	subsurface soil	5 0	7 0	Methylene Chloride	2 20	NA	578	5 78	ug/kg
		BY34-002	2082528	748323	subsurface soil	3 0	5 0	Methylene Chloride	2 60	NA	578	5 78	ug/kg
		BY34-003	2082539 00	748279 00	subsurface soil	6 50	8 50	Uranium-235	0 12	0 12	113	24	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	8 50	10 50	Uranium-238	1 68	1 49	506	103	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	6 50	8 50	Uranium-238	2 45	1 49	506	103	pCi/g
		BY34-003	2082539 00	748279 00	subsurface soil	6 5	8 5	Acetone	5 90	NA	27,200 000	272,000	ug/kg
		BY34-003	2082539 00	748279 00	subsurface soil	8 5	10 5	Methylene Chloride	1 20	NA	578	5 78	ug/kg
		BY34-003	2082539 00	748279 00	subsurface soil	6 5	8 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-004	2082536 00	748252 00	subsurface soil	6 50	8 50	Uranium-235	0 16	0 12	113	24	pCi/g
		BY34-004	2082536 00	748252 00	subsurface soil	6 50	8 50	Uranium-238	1 76	1 49	506	103	pCi/g
	BY34-004	2082536 00	748252 00	subsurface soil	4 50	6 50	Uranium-238	2 09	1 49	506	103	pCi/g	
	BY34-004	2082536 00	748252 00	subsurface soil	4 50	6 50	Aluminum	40 800 00	35,373 17	1,000 000	1 000 000	mg/kg	
	BY34-004	2082536 00	748252 00	subsurface soil	4 5	6 5	Acetone	15 000	NA	27,200 000	272 000	ug/kg	
	BY34-004	2082536 00	748252 00	subsurface soil	6 5	8 5	Methylene Chloride	1 200	NA	578	5 78	ug/kg	

Chloractenization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BY34-004	2082536 00	748252 00	subsurface soil	4 5	6 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	4 50	6 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Uranium-235	0 27	0 12	113	24	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Uranium-238	1 88	1 49	506	103	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Arsenic	14 60	13 14	381	3 81	mg/kg
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Aluminum	48,000 00	35,373 17	1,000 000	1,000,000	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	4 5	6 5	Acetone	5 50	NA	27,200,000	272,000	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	4 5	6 5	Methylene Chloride	1 10	NA	578	5 78	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	2 5	4 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	4 50	6 50	Uranium-235	0 24	0 12	113	24	pCi/g
		BY34-006	2082508 00	748260 00	subsurface soil	2 50	4 50	Uranium-238	2 63	1 49	506	103	pCi/g
		BY34-006	2082508 00	748260 00	subsurface soil	4 5	6 5	Acetone	8 30	NA	27,200,000	272 000	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	2 5	4 5	Acetone	13 00	NA	27 200,000	272 000	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	4 5	6 5	Methylene Chloride	1 10	NA	578	5 78	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	2 5	4 5	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BY34-007	2082496 00	748326 00	subsurface soil	4 50	6 20	Uranium-235	0 20	0 12	113	24	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	6 20	8 00	Uranium-235	0 21	0 12	113	24	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	6 20	8 00	Uranium-238	2 58	1 49	506	103	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	4 50	6 20	Arsenic	15 80	13 14	381	3 81	mg/kg
		BY34-007	2082496 00	748326 00	subsurface soil	6 2	8 0	Acetone	13 00	NA	27,200,000	272 000	ug/kg
		BY34-008	2082478 00	748223 00	subsurface soil	4 50	6 50	Uranium-238	1 50	1 49	506	103	pCi/g
		BY34-008	2082478 00	748223 00	subsurface soil	2 5	4 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-008	2082478 00	748223 00	subsurface soil	4 5	6 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-011	2082499	748302	subsurface soil	4 50	6 50	Uranium-235	0 21	0 12	113	24	pCi/g
		BY34-011	2082499	748302	subsurface soil	2 50	4 50	Uranium-235	0 23	0 12	113	24	pCi/g
		BY34-011	2082499	748302	subsurface soil	2 50	4 50	Arsenic	14 20	13 14	381	3 81	mg/kg
		BY34-011	2082499	748302	subsurface soil	4 5	6 5	Acetone	5 600	NA	27,200,000	272 000	ug/kg
		BY34-011	2082499	748302	subsurface soil	2 5	4 5	Acetone	5 800	NA	27,200,000	272,000	ug/kg

Chloractenization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BY34-004	2082536 00	748252 00	subsurface soil	4 5	6 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	4 50	6 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Uranium-235	0 27	0 12	113	24	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Uranium-238	1 88	1 49	506	103	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Arsenic	14 60	13 14	381	3 81	mg/kg
		BY34-005	2082507 00	748232 00	subsurface soil	2 50	4 50	Aluminum	48,000 00	35,373 17	1,000 000	1,000,000	pCi/g
		BY34-005	2082507 00	748232 00	subsurface soil	4 5	6 5	Acetone	5 50	NA	27,200,000	272,000	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	4 5	6 5	Methylene Chloride	1 10	NA	578	5 78	ug/kg
		BY34-005	2082507 00	748232 00	subsurface soil	2 5	4 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	4 50	6 50	Uranium-235	0 24	0 12	113	24	pCi/g
		BY34-006	2082508 00	748260 00	subsurface soil	2 50	4 50	Uranium-238	2 63	1 49	506	103	pCi/g
		BY34-006	2082508 00	748260 00	subsurface soil	4 5	6 5	Acetone	8 30	NA	27,200,000	272 000	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	2 5	4 5	Acetone	13 00	NA	27 200,000	272 000	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	4 5	6 5	Methylene Chloride	1 10	NA	578	5 78	ug/kg
		BY34-006	2082508 00	748260 00	subsurface soil	2 5	4 5	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BY34-007	2082496 00	748326 00	subsurface soil	4 50	6 20	Uranium-235	0 20	0 12	113	24	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	6 20	8 00	Uranium-235	0 21	0 12	113	24	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	6 20	8 00	Uranium-238	2 58	1 49	506	103	pCi/g
		BY34-007	2082496 00	748326 00	subsurface soil	4 50	6 20	Arsenic	15 80	13 14	381	3 81	mg/kg
		BY34-007	2082496 00	748326 00	subsurface soil	6 2	8 0	Acetone	13 00	NA	27,200,000	272 000	ug/kg
		BY34-008	2082478 00	748223 00	subsurface soil	4 50	6 50	Uranium-238	1 50	1 49	506	103	pCi/g
		BY34-008	2082478 00	748223 00	subsurface soil	2 5	4 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-008	2082478 00	748223 00	subsurface soil	4 5	6 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BY34-011	2082499	748302	subsurface soil	4 50	6 50	Uranium-235	0 21	0 12	113	24	pCi/g
		BY34-011	2082499	748302	subsurface soil	2 50	4 50	Uranium-235	0 23	0 12	113	24	pCi/g
		BY34-011	2082499	748302	subsurface soil	2 50	4 50	Arsenic	14 20	13 14	381	3 81	mg/kg
		BY34-011	2082499	748302	subsurface soil	4 5	6 5	Acetone	5 600	NA	27,200,000	272 000	ug/kg
		BY34-011	2082499	748302	subsurface soil	2 5	4 5	Acetone	5 800	NA	27,200,000	272,000	ug/kg

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Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BY34-011	2082499	748302	subsurface soil	2.5	4.5	Methylene Chloride	2.40	NA	578	578	ug/kg
		BY34-011	2082499	748302	subsurface soil	4.5	6.5	Methylene Chloride	2.50	NA	578	578	ug/kg
		BY35-001	2082520	748395	subsurface soil	0.50	2.70	Uranium-235	0.19	0.12	113	24	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.50	4.50	Uranium-235	0.25	0.12	113	24	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.50	4.50	Uranium-238	2.13	1.49	506	103	pCi/g
		BY35-001	2082520	748395	subsurface soil	0.50	2.70	Uranium-238	2.90	1.49	506	103	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.70	4.50	Lead	63.80	24.97	1,000	1,000	mg/kg
		BY35-001	2082520	748395	subsurface soil	0.5	2.7	Naphthalene	1.70	NA	10,100,000	101,000	ug/kg
		BY35-001	2082520	748395	subsurface soil	2.7	4.5	Toluene	0.94	NA	707,000	7,070	ug/kg
		BY35-002	2082491	748374	subsurface soil	2.50	4.50	Uranium-235	0.21	0.12	113	24	pCi/g
		BY35-002	2082491	748374	subsurface soil	0.50	2.50	Uranium-238	2.35	1.49	506	103	pCi/g
		BY35-002	2082491	748374	subsurface soil	2.50	4.50	Uranium-238	2.89	1.49	506	103	pCi/g
		BY35-002	2082491	748374	subsurface soil	2.5	4.5	Naphthalene	2.80	NA	10,100,000	101,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	2-Butanone	8.90	NA	1,000,000,000	1,000,000,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	Methylene Chloride	0.94	NA	578	578	ug/kg
		BY35-003	2082487	748410	subsurface soil	0.50	2.50	Uranium-235	0.12	0.12	113	24	pCi/g
		BY35-003	2082487	748410	subsurface soil	2.50	4.50	Uranium-235	0.16	0.12	113	24	pCi/g
		BY35-003	2082487	748410	subsurface soil	0.5	2.5	Acetone	7.10	NA	27,200,000	272,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	Methylene Chloride	0.94	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	0.5	2.5	Methylene Chloride	0.89	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	2.5	4.5	Methylene Chloride	1.00	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	4.5	6.5	Methylene Chloride	1.00	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	6.5	8.5	Methylene Chloride	1.10	NA	578	578	ug/kg
		BZ34-002	2082656	748302	subsurface soil	6.00	8.00	Uranium-238	3.26	1.49	506	103	pCi/g
		BZ34-002	2082656	748302	subsurface soil	4.00	6.00	Uranium-238	3.71	1.49	506	103	pCi/g
		BZ34-002	2082656	748302	subsurface soil	4.0	6.0	Methylene Chloride	1.50	NA	578	578	ug/kg
		BZ34-002	2082656	748302	subsurface soil	6.0	8.0	Methylene Chloride	1.50	NA	578	578	ug/kg
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Uranium-235	0.18	0.12	113	24	pCi/g

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Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BY34-011	2082499	748302	subsurface soil	2.5	4.5	Methylene Chloride	2.40	NA	578	578	ug/kg
		BY34-011	2082499	748302	subsurface soil	4.5	6.5	Methylene Chloride	2.50	NA	578	578	ug/kg
		BY35-001	2082520	748395	subsurface soil	0.50	2.70	Uranium-235	0.19	0.12	113	24	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.50	4.50	Uranium-235	0.25	0.12	113	24	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.50	4.50	Uranium-238	2.13	1.49	506	103	pCi/g
		BY35-001	2082520	748395	subsurface soil	0.50	2.70	Uranium-238	2.90	1.49	506	103	pCi/g
		BY35-001	2082520	748395	subsurface soil	2.70	4.50	Lead	63.80	24.97	1,000	1,000	mg/kg
		BY35-001	2082520	748395	subsurface soil	0.5	2.7	Naphthalene	1.70	NA	10,100,000	101,000	ug/kg
		BY35-001	2082520	748395	subsurface soil	2.7	4.5	Toluene	0.94	NA	707,000	7,070	ug/kg
		BY35-002	2082491	748374	subsurface soil	2.50	4.50	Uranium-235	0.21	0.12	113	24	pCi/g
		BY35-002	2082491	748374	subsurface soil	0.50	2.50	Uranium-238	2.35	1.49	506	103	pCi/g
		BY35-002	2082491	748374	subsurface soil	2.50	4.50	Uranium-238	2.89	1.49	506	103	pCi/g
		BY35-002	2082491	748374	subsurface soil	2.5	4.5	Naphthalene	2.80	NA	10,100,000	101,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	2-Butanone	8.90	NA	1,000,000,000	1,000,000,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	Methylene Chloride	0.94	NA	578	578	ug/kg
		BY35-003	2082487	748410	subsurface soil	0.50	2.50	Uranium-235	0.12	0.12	113	24	pCi/g
		BY35-003	2082487	748410	subsurface soil	2.50	4.50	Uranium-235	0.16	0.12	113	24	pCi/g
		BY35-003	2082487	748410	subsurface soil	0.5	2.5	Acetone	7.10	NA	27,200,000	272,000	ug/kg
		BY35-003	2082487	748410	subsurface soil	2.5	4.5	Methylene Chloride	0.94	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	0.5	2.5	Methylene Chloride	0.89	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	2.5	4.5	Methylene Chloride	1.00	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	4.5	6.5	Methylene Chloride	1.00	NA	578	578	ug/kg
		BZ34-001	2082543	748339	subsurface soil	6.5	8.5	Methylene Chloride	1.10	NA	578	578	ug/kg
		BZ34-002	2082656	748302	subsurface soil	6.00	8.00	Uranium-238	3.26	1.49	506	103	pCi/g
		BZ34-002	2082656	748302	subsurface soil	4.00	6.00	Uranium-238	3.71	1.49	506	103	pCi/g
		BZ34-002	2082656	748302	subsurface soil	4.0	6.0	Methylene Chloride	1.50	NA	578	578	ug/kg
		BZ34-002	2082656	748302	subsurface soil	6.0	8.0	Methylene Chloride	1.50	NA	578	578	ug/kg
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Uranium-235	0.18	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Eastings	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgnd 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Uranium-238	2.35	1.49	506	103	pCi/g
		BZ34-003	2082660	748265	subsurface soil	6.00	8.00	Uranium-238	2.44	1.49	506	103	pCi/g
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Arsenic	17.30	13.14	381	3.81	mg/kg
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Aluminum	40,800.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-003	2082660	748265	subsurface soil	3.4	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ34-003	2082660	748265	subsurface soil	6.0	8.0	Acetone	15.00	NA	27,200,000	272,000	ug/kg
		BZ34-003	2082660	748265	subsurface soil	3.4	6.0	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-003	2082660	748265	subsurface soil	6.0	8.0	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-004	2082663	748229	subsurface soil	6.00	8.00	Uranium-235	0.20	0.12	113	24	pCi/g
		BZ34-004	2082663	748229	subsurface soil	6.00	8.00	Uranium-238	1.90	1.49	506	103	pCi/g
		BZ34-004	2082663	748229	subsurface soil	6.0	8.0	Acetone	6.10	NA	27,200,000	272,000	ug/kg
		BZ34-004	2082663	748229	subsurface soil	4.0	6.0	Methylene Chloride	1.10	NA	578	5.78	ug/kg
		BZ34-004	2082663	748229	subsurface soil	6.0	8.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-007	2082634	748205	subsurface soil	0.50	2.50	Uranium-235	0.14	0.12	113	24	pCi/g
		BZ34-007	2082634	748205	subsurface soil	2.50	4.50	Uranium-235	0.21	0.12	113	24	pCi/g
		BZ34-007	2082634	748205	subsurface soil	0.50	2.50	Uranium-238	2.11	1.49	506	103	pCi/g
		BZ34-007	2082634	748205	subsurface soil	2.50	4.50	Uranium-238	2.57	1.49	506	103	pCi/g
		BZ34-007	2082634	748205	subsurface soil	0.5	2.5	Methylene Chloride	1.30	NA	578	5.78	ug/kg
		BZ34-007	2082634	748205	subsurface soil	2.5	4.5	Methylene Chloride	1.50	NA	578	5.78	ug/kg
		BZ34-008	2082632	748244	subsurface soil	6.00	8.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Uranium-235	0.21	0.12	113	24	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Uranium-238	1.84	1.49	506	103	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Aluminum	45,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-008	2082632	748244	subsurface soil	4.0	6.0	Acetone	21.00	NA	27,200,000	272,000	ug/kg
		BZ34-008	2082632	748244	subsurface soil	4.0	6.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-008	2082632	748244	subsurface soil	6.0	8.0	Methylene Chloride	1.30	NA	578	5.78	ug/kg
		BZ34-009	2082623	748315	subsurface soil	6.00	8.00	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-009	2082623	748315	subsurface soil	4.10	6.00	Uranium-235	0.25	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Uranium-238	2.35	1.49	506	103	pCi/g
		BZ34-003	2082660	748265	subsurface soil	6.00	8.00	Uranium-238	2.44	1.49	506	103	pCi/g
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Arsenic	17.30	13.14	381	3.81	mg/kg
		BZ34-003	2082660	748265	subsurface soil	3.40	6.00	Aluminum	40,800.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-003	2082660	748265	subsurface soil	3.4	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ34-003	2082660	748265	subsurface soil	6.0	8.0	Acetone	15.00	NA	27,200,000	272,000	ug/kg
		BZ34-003	2082660	748265	subsurface soil	3.4	6.0	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-003	2082660	748265	subsurface soil	6.0	8.0	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-004	2082663	748229	subsurface soil	6.00	8.00	Uranium-235	0.20	0.12	113	24	pCi/g
		BZ34-004	2082663	748229	subsurface soil	6.00	8.00	Uranium-238	1.90	1.49	506	103	pCi/g
		BZ34-004	2082663	748229	subsurface soil	6.0	8.0	Acetone	6.10	NA	27,200,000	272,000	ug/kg
		BZ34-004	2082663	748229	subsurface soil	4.0	6.0	Methylene Chloride	1.10	NA	578	5.78	ug/kg
		BZ34-004	2082663	748229	subsurface soil	6.0	8.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-007	2082634	748205	subsurface soil	0.50	2.50	Uranium-235	0.14	0.12	113	24	pCi/g
		BZ34-007	2082634	748205	subsurface soil	2.50	4.50	Uranium-235	0.21	0.12	113	24	pCi/g
		BZ34-007	2082634	748205	subsurface soil	0.50	2.50	Uranium-238	2.11	1.49	506	103	pCi/g
		BZ34-007	2082634	748205	subsurface soil	2.50	4.50	Uranium-238	2.57	1.49	506	103	pCi/g
		BZ34-007	2082634	748205	subsurface soil	0.5	2.5	Methylene Chloride	1.30	NA	578	5.78	ug/kg
		BZ34-007	2082634	748205	subsurface soil	2.5	4.5	Methylene Chloride	1.50	NA	578	5.78	ug/kg
		BZ34-008	2082632	748244	subsurface soil	6.00	8.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Uranium-235	0.21	0.12	113	24	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Uranium-238	1.84	1.49	506	103	pCi/g
		BZ34-008	2082632	748244	subsurface soil	4.00	6.00	Aluminum	45,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-008	2082632	748244	subsurface soil	4.0	6.0	Acetone	21.00	NA	27,200,000	272,000	ug/kg
		BZ34-008	2082632	748244	subsurface soil	4.0	6.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-008	2082632	748244	subsurface soil	6.0	8.0	Methylene Chloride	1.30	NA	578	5.78	ug/kg
		BZ34-009	2082623	748315	subsurface soil	6.00	8.00	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-009	2082623	748315	subsurface soil	4.10	6.00	Uranium-235	0.25	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-009	2082623	748315	subsurface soil	6.00	8.00	Uranium-238	3.27	1.49	506	103	pCi/g
		BZ34-009	2082623	748315	subsurface soil	4.10	6.00	Arsenic	14.10	13.14	381	3.81	mg/kg
		BZ34-009	2082623	748315	subsurface soil	6.0	8.0	Acetone	6.20	NA	27,200,000	272,000	ug/kg
		BZ34-009	2082623	748315	subsurface soil	4.1	6.0	Acetone	13.00	NA	27,200,000	272,000	ug/kg
		BZ34-009	2082623	748315	subsurface soil	4.1	6.0	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ34-009	2082623	748315	subsurface soil	6.0	8.0	Methylene Chloride	2.50	NA	578	5.78	ug/kg
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Uranium-235	0.29	0.12	113	24	pCi/g
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Uranium-238	3.61	1.49	506	103	pCi/g
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Arsenic	18.10	13.14	381	3.81	mg/kg
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Aluminum	35,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-010	2082619	748351	subsurface soil	5.0	7.0	Acetone	9.40	NA	27,200,000	272,000	ug/kg
		BZ34-010	2082619	748351	subsurface soil	7.0	9.0	Acetone	13.00	NA	27,200,000	272,000	ug/kg
		BZ34-010	2082619	748351	subsurface soil	7.0	9.0	Methylene Chloride	2.50	NA	578	5.78	ug/kg
		BZ34-010	2082619	748351	subsurface soil	5.0	7.0	Methylene Chloride	2.60	NA	578	5.78	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.50	6.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Uranium-238	5.74	1.49	506	103	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Arsenic	14.00	13.14	381	3.81	mg/kg
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Aluminum	43,600.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-011	2082591	748319	subsurface soil	6.0	8.0	Acetone	6.20	NA	27,200,000	272,000	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.5	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ34-011	2082591	748319	subsurface soil	6.0	8.0	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.5	6.0	Methylene Chloride	2.10	NA	578	5.78	ug/kg
		BZ34-012	2082594	748294	subsurface soil	6.00	8.00	Uranium-235	0.27	0.12	113	24	pCi/g
		BZ34-012	2082594	748294	subsurface soil	4.00	6.00	Uranium-238	1.90	1.49	506	103	pCi/g
		BZ34-012	2082594	748294	subsurface soil	4.0	6.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-012	2082594	748294	subsurface soil	6.0	8.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-013	2082599	748259	subsurface soil	6.00	8.00	Uranium-235	0.17	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-009	2082623	748315	subsurface soil	6.00	8.00	Uranium-238	3.27	1.49	506	103	pCi/g
		BZ34-009	2082623	748315	subsurface soil	4.10	6.00	Arsenic	14.10	13.14	381	3.81	mg/kg
		BZ34-009	2082623	748315	subsurface soil	6.0	8.0	Acetone	6.20	NA	27,200,000	272,000	ug/kg
		BZ34-009	2082623	748315	subsurface soil	4.1	6.0	Acetone	13.00	NA	27,200,000	272,000	ug/kg
		BZ34-009	2082623	748315	subsurface soil	4.1	6.0	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ34-009	2082623	748315	subsurface soil	6.0	8.0	Methylene Chloride	2.50	NA	578	5.78	ug/kg
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Uranium-235	0.29	0.12	113	24	pCi/g
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Uranium-238	3.61	1.49	506	103	pCi/g
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Arsenic	18.10	13.14	381	3.81	mg/kg
		BZ34-010	2082619	748351	subsurface soil	5.00	7.00	Aluminum	35,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-010	2082619	748351	subsurface soil	5.0	7.0	Acetone	9.40	NA	27,200,000	272,000	ug/kg
		BZ34-010	2082619	748351	subsurface soil	7.0	9.0	Acetone	13.00	NA	27,200,000	272,000	ug/kg
		BZ34-010	2082619	748351	subsurface soil	7.0	9.0	Methylene Chloride	2.50	NA	578	5.78	ug/kg
		BZ34-010	2082619	748351	subsurface soil	5.0	7.0	Methylene Chloride	2.60	NA	578	5.78	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.50	6.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Uranium-238	5.74	1.49	506	103	pCi/g
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Arsenic	14.00	13.14	381	3.81	mg/kg
		BZ34-011	2082591	748319	subsurface soil	6.00	8.00	Aluminum	43,600.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-011	2082591	748319	subsurface soil	6.0	8.0	Acetone	6.20	NA	27,200,000	272,000	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.5	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ34-011	2082591	748319	subsurface soil	6.0	8.0	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ34-011	2082591	748319	subsurface soil	4.5	6.0	Methylene Chloride	2.10	NA	578	5.78	ug/kg
		BZ34-012	2082594	748294	subsurface soil	6.00	8.00	Uranium-235	0.27	0.12	113	24	pCi/g
		BZ34-012	2082594	748294	subsurface soil	4.00	6.00	Uranium-238	1.90	1.49	506	103	pCi/g
		BZ34-012	2082594	748294	subsurface soil	4.0	6.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-012	2082594	748294	subsurface soil	6.0	8.0	Methylene Chloride	1.20	NA	578	5.78	ug/kg
		BZ34-013	2082599	748259	subsurface soil	6.00	8.00	Uranium-235	0.17	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-013	2082599	748259	subsurface soil	4 00	6 00	Uranium-235	0 27	0 12	113	24	pCi/g
		BZ34-013	2082599	748259	subsurface soil	6 0	8 0	Acetone	7 00	NA	27,200,000	272,000	ug/kg
		BZ34-013	2082599	748259	subsurface soil	6 0	8 0	Methylene Chloride	1 60	NA	578	5 78	ug/kg
		BZ34-013	2082599	748259	subsurface soil	4 0	6 0	Methylene Chloride	2 30	NA	578	5 78	ug/kg
		BZ34-014	2082605	748227	subsurface soil	6 00	8 00	Uranium-238	1 80	1 49	506	103	pCi/g
		BZ34-014	2082605	748227	subsurface soil	4 00	6 00	Uranium-238	3 32	1 49	506	103	pCi/g
		BZ34-014	2082605	748227	subsurface soil	6 0	8 0	Acetone	7 10	NA	27,200,000	272,000	ug/kg
		BZ34-014	2082605	748227	subsurface soil	6 0	8 0	Methylene Chloride	1 80	NA	578	5 78	ug/kg
		BZ34-014	2082605	748227	subsurface soil	4 0	6 0	Methylene Chloride	2 70	NA	578	5 78	ug/kg
		BZ34-017	2082570	748219	subsurface soil	3 00	5 00	Uranium-235	0 14	0 12	113	24	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 00	7 00	Uranium-235	0 15	0 12	113	24	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 00	7 00	Uranium-238	1 88	1 49	506	103	pCi/g
		BZ34-017	2082570	748219	subsurface soil	3 00	5 00	Uranium-238	2 03	1 49	506	103	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 0	7 0	Methylene Chloride	1 20	NA	578	5 78	ug/kg
		BZ34-017	2082570	748219	subsurface soil	3 0	5 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BZ34-018	2082569	748237	subsurface soil	4 00	6 00	Uranium-238	1 79	1 49	506	103	pCi/g
		BZ34-018	2082569	748237	subsurface soil	6 0	8 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BZ34-018	2082569	748237	subsurface soil	4 0	6 0	Methylene Chloride	1 80	NA	578	5 78	ug/kg
		BZ34-019	2082565	748273	subsurface soil	6 50	8 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BZ34-019	2082565	748273	subsurface soil	4 50	6 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BZ34-019	2082565	748273	subsurface soil	4 50	6 50	Uranium-238	1 90	1 49	506	103	pCi/g
		BZ34-019	2082565	748273	subsurface soil	6 5	8 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BZ34-019	2082565	748273	subsurface soil	4 5	6 5	Methylene Chloride	1 60	NA	578	5 78	ug/kg
		BZ34-020	2082567	748301	subsurface soil	4 00	6 00	Uranium-235	0 17	0 12	113	24	pCi/g
		BZ34-020	2082567	748301	subsurface soil	6 00	8 00	Uranium-235	0 23	0 12	113	24	pCi/g
		BZ34-020	2082567	748301	subsurface soil	4 00	6 00	Uranium-238	2 04	1 49	506	103	pCi/g
		BZ34-020	2082567	748301	subsurface soil	6 00	8 00	Uranium-238	2 32	1 49	506	103	pCi/g
		BZ34-020	2082567	748301	subsurface soil	4 0	6 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg

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IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-013	2082599	748259	subsurface soil	4 00	6 00	Uranium-235	0 27	0 12	113	24	pCi/g
		BZ34-013	2082599	748259	subsurface soil	6 0	8 0	Acetone	7 00	NA	27,200,000	272,000	ug/kg
		BZ34-013	2082599	748259	subsurface soil	6 0	8 0	Methylene Chloride	1 60	NA	578	5 78	ug/kg
		BZ34-013	2082599	748259	subsurface soil	4 0	6 0	Methylene Chloride	2 30	NA	578	5 78	ug/kg
		BZ34-014	2082605	748227	subsurface soil	6 00	8 00	Uranium-238	1 80	1 49	506	103	pCi/g
		BZ34-014	2082605	748227	subsurface soil	4 00	6 00	Uranium-238	3 32	1 49	506	103	pCi/g
		BZ34-014	2082605	748227	subsurface soil	6 0	8 0	Acetone	7 10	NA	27,200,000	272,000	ug/kg
		BZ34-014	2082605	748227	subsurface soil	6 0	8 0	Methylene Chloride	1 80	NA	578	5 78	ug/kg
		BZ34-014	2082605	748227	subsurface soil	4 0	6 0	Methylene Chloride	2 70	NA	578	5 78	ug/kg
		BZ34-017	2082570	748219	subsurface soil	3 00	5 00	Uranium-235	0 14	0 12	113	24	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 00	7 00	Uranium-235	0 15	0 12	113	24	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 00	7 00	Uranium-238	1 88	1 49	506	103	pCi/g
		BZ34-017	2082570	748219	subsurface soil	3 00	5 00	Uranium-238	2 03	1 49	506	103	pCi/g
		BZ34-017	2082570	748219	subsurface soil	5 0	7 0	Methylene Chloride	1 20	NA	578	5 78	ug/kg
		BZ34-017	2082570	748219	subsurface soil	3 0	5 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BZ34-018	2082569	748237	subsurface soil	4 00	6 00	Uranium-238	1 79	1 49	506	103	pCi/g
		BZ34-018	2082569	748237	subsurface soil	6 0	8 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg
		BZ34-018	2082569	748237	subsurface soil	4 0	6 0	Methylene Chloride	1 80	NA	578	5 78	ug/kg
		BZ34-019	2082565	748273	subsurface soil	6 50	8 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BZ34-019	2082565	748273	subsurface soil	4 50	6 50	Uranium-235	0 19	0 12	113	24	pCi/g
		BZ34-019	2082565	748273	subsurface soil	4 50	6 50	Uranium-238	1 90	1 49	506	103	pCi/g
		BZ34-019	2082565	748273	subsurface soil	6 5	8 5	Methylene Chloride	1 40	NA	578	5 78	ug/kg
		BZ34-019	2082565	748273	subsurface soil	4 5	6 5	Methylene Chloride	1 60	NA	578	5 78	ug/kg
		BZ34-020	2082567	748301	subsurface soil	4 00	6 00	Uranium-235	0 17	0 12	113	24	pCi/g
		BZ34-020	2082567	748301	subsurface soil	6 00	8 00	Uranium-235	0 23	0 12	113	24	pCi/g
		BZ34-020	2082567	748301	subsurface soil	4 00	6 00	Uranium-238	2 04	1 49	506	103	pCi/g
		BZ34-020	2082567	748301	subsurface soil	6 00	8 00	Uranium-238	2 32	1 49	506	103	pCi/g
		BZ34-020	2082567	748301	subsurface soil	4 0	6 0	Methylene Chloride	1 30	NA	578	5 78	ug/kg

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-020	2082567	748301	subsurface soil	6.0	8.0	Methylene Chloride	1.700	NA	578	5.78	ug/kg
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-021	2082559	748334	subsurface soil	2.50	4.50	Uranium-235	0.20	0.12	113	24	pCi/g
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Uranium-238	3.24	1.49	506	103	pCi/g
		BZ34-021	2082559	748334	subsurface soil	2.50	4.50	Uranium-238	3.81	1.49	506	103	pCi/g
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Aluminum	36,200.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-021	2082559	748334	subsurface soil	2.5	4.5	Acetone	5.10	NA	27,200,000	272,000	ug/kg
		BZ34-021	2082559	748334	subsurface soil	4.5	6.5	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ34-021	2082559	748334	subsurface soil	2.5	4.5	Methylene Chloride	2.80	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.10	8.10	Uranium-235	0.23	0.12	113	24	pCi/g
		BZ34-022	2082539	748221	subsurface soil	6.10	8.10	Uranium-238	3.42	1.49	506	103	pCi/g
		BZ34-022	2082539	748221	subsurface soil	4.10	6.10	Aluminum	38,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-022	2082539	748221	subsurface soil	2.5	4.5	Methylene Chloride	2.80	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.1	8.1	Acetone	9.90	NA	27,200,000	272,000	ug/kg
		BZ34-022	2082539	748221	subsurface soil	4.1	6.1	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.1	8.1	Methylene Chloride	2.40	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	2.5	4.5	Methylene Chloride	1.70	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	0.5	2.5	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	4.5	6.5	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	8.5	10.5	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ35-010	2082642	748372	subsurface soil	6.5	8.5	Acetone	5.50	NA	27,200,000	272,000	ug/kg
		BZ35-010	2082642	748372	subsurface soil	2.5	4.5	2-Butanone	10.00	NA	1,000,000,000	1,000,000,000	ug/kg
		BZ35-010	2082642	748372	subsurface soil	2.5	4.5	Toluene	0.96	NA	707,000	7,070	ug/kg
		BZ35-010	2082642	748372	subsurface soil	0.5	2.5	Methylene Chloride	1.10	NA	578	5.78	ug/kg
		BZ35-010	2082642	748372	subsurface soil	0.5	2.5	Toluene	4.40	NA	707,000	7,070	ug/kg
		BZ35-011	2082615	748395	subsurface soil	4.5	6.8	2-Butanone	13.00	NA	1,000,000,000	1,000,000,000	ug/kg
		BZ35-011	2082615	748395	subsurface soil	4.50	6.80	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ35-011	2082615	748395	subsurface soil	6.80	9.00	Uranium-235	0.22	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkg+2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ34-020	2082567	748301	subsurface soil	6.0	8.0	Methylene Chloride	1.700	NA	578	5.78	ug/kg
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ34-021	2082559	748334	subsurface soil	2.50	4.50	Uranium-235	0.20	0.12	113	24	pCi/g
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Uranium-238	3.24	1.49	506	103	pCi/g
		BZ34-021	2082559	748334	subsurface soil	2.50	4.50	Uranium-238	3.81	1.49	506	103	pCi/g
		BZ34-021	2082559	748334	subsurface soil	4.50	6.50	Aluminum	36,200.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-021	2082559	748334	subsurface soil	2.5	4.5	Acetone	5.10	NA	27,200,000	272,000	ug/kg
		BZ34-021	2082559	748334	subsurface soil	4.5	6.5	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ34-021	2082559	748334	subsurface soil	2.5	4.5	Methylene Chloride	2.80	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.10	8.10	Uranium-235	0.23	0.12	113	24	pCi/g
		BZ34-022	2082539	748221	subsurface soil	6.10	8.10	Uranium-238	3.42	1.49	506	103	pCi/g
		BZ34-022	2082539	748221	subsurface soil	4.10	6.10	Aluminum	38,500.00	35,373.17	1,000,000	1,000,000	mg/kg
		BZ34-022	2082539	748221	subsurface soil	2.5	4.5	Methylene Chloride	2.80	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.1	8.1	Acetone	9.90	NA	27,200,000	272,000	ug/kg
		BZ34-022	2082539	748221	subsurface soil	4.1	6.1	Methylene Chloride	1.40	NA	578	5.78	ug/kg
		BZ34-022	2082539	748221	subsurface soil	6.1	8.1	Methylene Chloride	2.40	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	2.5	4.5	Methylene Chloride	1.70	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	0.5	2.5	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	4.5	6.5	Methylene Chloride	1.80	NA	578	5.78	ug/kg
		BZ35-008	2082651	748444	subsurface soil	8.5	10.5	Methylene Chloride	2.30	NA	578	5.78	ug/kg
		BZ35-010	2082642	748372	subsurface soil	6.5	8.5	Acetone	5.50	NA	27,200,000	272,000	ug/kg
		BZ35-010	2082642	748372	subsurface soil	2.5	4.5	2-Butanone	10.00	NA	1,000,000,000	1,000,000,000	ug/kg
		BZ35-010	2082642	748372	subsurface soil	2.5	4.5	Toluene	0.96	NA	707,000	7,070	ug/kg
		BZ35-010	2082642	748372	subsurface soil	0.5	2.5	Methylene Chloride	1.10	NA	578	5.78	ug/kg
		BZ35-010	2082642	748372	subsurface soil	0.5	2.5	Toluene	4.40	NA	707,000	7,070	ug/kg
		BZ35-011	2082615	748395	subsurface soil	4.5	6.8	2-Butanone	13.00	NA	1,000,000,000	1,000,000,000	ug/kg
		BZ35-011	2082615	748395	subsurface soil	4.50	6.80	Uranium-235	0.19	0.12	113	24	pCi/g
		BZ35-011	2082615	748395	subsurface soil	6.80	9.00	Uranium-235	0.22	0.12	113	24	pCi/g

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ35-011	2082615	748395	subsurface soil	4.50	6.80	Uranium-238	2.03	1.49	506	103	pCi/g
		BZ35-011	2082615	748395	subsurface soil	6.80	9.00	Uranium-238	2.52	1.49	506	103	pCi/g
		BZ35-012	2082582	748402	subsurface soil	6.00	8.00	Uranium-235	0.26	0.12	113	24	pCi/g
		BZ35-012	2082582	748402	subsurface soil	8.00	10.00	Uranium-235	0.35	0.12	113	24	pCi/g
		BZ35-012	2082582	748402	subsurface soil	8.00	10.00	Uranium-238	2.96	1.49	506	103	pCi/g
		BZ35-012	2082582	748402	subsurface soil	6.00	8.00	Uranium-238	3.05	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Uranium-235	0.15	0.12	113	24	pCi/g
		BZ35-013	2082553	748380	subsurface soil	5.50	6.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ35-013	2082553	748380	subsurface soil	5.50	6.00	Uranium-238	1.69	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Uranium-238	2.72	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Strontium	214.00	211.38	1 000 000	1 000 000	mg/kg
		BZ35-013	2082553	748380	subsurface soil	5.5	6.0	Toluene	0.96	NA	707 000	7 070	ug/kg
		BZ35-014	2082640	748395	subsurface soil	4.5	6.5	2-Butanone	6.40	NA	1 000,000 000	1 000 000 000	ug/kg
		BZ35-014	2082640	748395	subsurface soil	0.5	2.5	Methylene Chloride	0.92	NA	578	5 78	ug/kg
		BZ35-014	2082640	748395	subsurface soil	6.5	8.5	Methylene Chloride	0.96	NA	578	5 78	ug/kg
		BZ35-015	2082586	748355	subsurface soil	6.00	8.00	Uranium-235	0.24	0.12	113	24	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Uranium-235	0.28	0.12	113	24	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Uranium-238	2.22	1.49	506	103	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Arsenic	18.90	13.14	381	3 81	mg/kg
		BZ35-015	2082586	748355	subsurface soil	4.0	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ35-015	2082586	748355	subsurface soil	4.0	6.0	Toluene	1.10	NA	707,000	7,070	ug/kg

SD = Standard Deviation

Characterization Data Summary IHSS Group 400-10

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I Action Level	Tier II Action Level	Unit
		BZ35-011	2082615	748395	subsurface soil	4.50	6.80	Uranium-238	2.03	1.49	506	103	pCi/g
		BZ35-011	2082615	748395	subsurface soil	6.80	9.00	Uranium-238	2.52	1.49	506	103	pCi/g
		BZ35-012	2082582	748402	subsurface soil	6.00	8.00	Uranium-235	0.26	0.12	113	24	pCi/g
		BZ35-012	2082582	748402	subsurface soil	8.00	10.00	Uranium-235	0.35	0.12	113	24	pCi/g
		BZ35-012	2082582	748402	subsurface soil	8.00	10.00	Uranium-238	2.96	1.49	506	103	pCi/g
		BZ35-012	2082582	748402	subsurface soil	6.00	8.00	Uranium-238	3.05	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Uranium-235	0.15	0.12	113	24	pCi/g
		BZ35-013	2082553	748380	subsurface soil	5.50	6.00	Uranium-235	0.18	0.12	113	24	pCi/g
		BZ35-013	2082553	748380	subsurface soil	5.50	6.00	Uranium-238	1.69	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Uranium-238	2.72	1.49	506	103	pCi/g
		BZ35-013	2082553	748380	subsurface soil	6.00	7.40	Strontium	214.00	211.38	1 000 000	1 000 000	mg/kg
		BZ35-013	2082553	748380	subsurface soil	5.5	6.0	Toluene	0.96	NA	707 000	7 070	ug/kg
		BZ35-014	2082640	748395	subsurface soil	4.5	6.5	2-Butanone	6.40	NA	1 000,000 000	1 000 000 000	ug/kg
		BZ35-014	2082640	748395	subsurface soil	0.5	2.5	Methylene Chloride	0.92	NA	578	5 78	ug/kg
		BZ35-014	2082640	748395	subsurface soil	6.5	8.5	Methylene Chloride	0.96	NA	578	5 78	ug/kg
		BZ35-015	2082586	748355	subsurface soil	6.00	8.00	Uranium-235	0.24	0.12	113	24	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Uranium-235	0.28	0.12	113	24	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Uranium-238	2.22	1.49	506	103	pCi/g
		BZ35-015	2082586	748355	subsurface soil	4.00	6.00	Arsenic	18.90	13.14	381	3 81	mg/kg
		BZ35-015	2082586	748355	subsurface soil	4.0	6.0	Acetone	11.00	NA	27,200,000	272,000	ug/kg
		BZ35-015	2082586	748355	subsurface soil	4.0	6.0	Toluene	1.10	NA	707,000	7,070	ug/kg

SD = Standard Deviation

Table 3
Summary Statistics for IHSS 120.2 Subsurface Soil

Analyte	Total Number of Samples Collected	Number of Samples Meeting Maximum Value	Maximum Value (ug/kg)	Number of Samples Meeting Action Level	Action Level (ug/kg)	Subsurface Soil Background Concentration	Unit
2-Butanone	20	15	46	NA	NA	NA	ug/kg
2-Ethyl-1-Hexanol	1	100	56	NA	NA	NA	ug/kg
Acetone	20	30	230	27,200,000	272,000	NA	ug/kg
Methylene Chloride	20	60	23	578	578	NA	ug/kg
Thallium	4	25	29	NA	NA	1.84	mg/kg
Toluene	20	20	75	707,000	7,070	NA	ug/kg

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Table 3
Summary Statistics for IHSS 120.2 Subsurface Soil

Analyte	Total Number of Samples Collected	Number of Samples Meeting Minimum Requirements	Maximum Value (ug/kg)	Year(s) of Collection	Action Level (ug/kg)	Subsurface Soil Background Concentration	Unit
2-Butanone	20	15	46	NA	NA	NA	ug/kg
2-Ethyl-1-Hexanol	1	100	56	NA	NA	NA	ug/kg
Acetone	20	30	230	27,200,000	272,000	NA	ug/kg
Methylene Chloride	20	60	23	578	578	NA	ug/kg
Thallium	4	25	29	NA	NA	1.84	mg/kg
Toluene	20	20	75	707,000	7,070	NA	ug/kg

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Table 4
Summary Statistics for IHSS 161 Subsurface Soil

Analyte	Total Number of Samples Collected	71	7	46	NA	NA	27,200,000	272,000	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	71	48	230	NA	NA	1,000,000	1,000,000	35,373.17	13.14	NA	ug/kg
Analyte	Total Number of Samples Collected	57	16	48,000	1,000,000	1,000,000	381	3.81	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	57	16	21.6	381	3.81	NA	NA	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	71	1	2	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	57	2	217,000	NA	NA	NA	NA	39,382.27	29.04	NA	mg/kg
Analyte	Total Number of Samples Collected	57	2	38.1	123,000	123,000	1,000	1,000	24.97	24.97	NA	mg/kg
Analyte	Total Number of Samples Collected	57	2	63.8	1,000	1,000	578	5.78	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	71	73	2.8	578	5.78	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	1	100	8	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	1	100	10	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	71	4	6.5	10,100,000	101,000	1,000,000	101,000	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	57	2	214	1,000,000	1,000,000	NA	NA	211.38	211.38	NA	mg/kg
Analyte	Total Number of Samples Collected	57	58	4.8	NA	NA	NA	NA	1.84	1.84	NA	mg/kg
Analyte	Total Number of Samples Collected	71	7	7.5	707,000	7,070	7,070	7,070	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	81	72	0.35	113	24	24	24	0.12	0.12	NA	pCi/g
Analyte	Total Number of Samples Collected	81	70	5.74	506	103	103	103	1.49	1.49	NA	pCi/g

Table 4
Summary Statistics for IHSS 161 Subsurface Soil

Analyte	Total Number of Samples Collected	71	7	46	NA	NA	27,200,000	272,000	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	71	48	230	NA	NA	1,000,000	1,000,000	35,373.17	13.14	NA	ug/kg
Analyte	Total Number of Samples Collected	57	16	48,000	1,000,000	1,000,000	381	3.81	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	57	16	21.6	381	3.81	NA	NA	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	71	1	2	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	57	2	217,000	NA	NA	NA	NA	39,382.27	29.04	NA	mg/kg
Analyte	Total Number of Samples Collected	57	2	38.1	123,000	123,000	1,000	1,000	24.97	24.97	NA	mg/kg
Analyte	Total Number of Samples Collected	57	2	63.8	1,000	1,000	578	5.78	NA	NA	NA	mg/kg
Analyte	Total Number of Samples Collected	71	73	2.8	578	5.78	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	1	100	8	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	1	100	10	NA	NA	NA	NA	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	71	4	6.5	10,100,000	101,000	1,000,000	101,000	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	57	2	214	1,000,000	1,000,000	NA	NA	211.38	211.38	NA	mg/kg
Analyte	Total Number of Samples Collected	57	58	4.8	NA	NA	NA	NA	1.84	1.84	NA	mg/kg
Analyte	Total Number of Samples Collected	71	7	7.5	707,000	7,070	7,070	7,070	NA	NA	NA	ug/kg
Analyte	Total Number of Samples Collected	81	72	0.35	113	24	24	24	0.12	0.12	NA	pCi/g
Analyte	Total Number of Samples Collected	81	70	5.74	506	103	103	103	1.49	1.49	NA	pCi/g

Table 5
Summary Statistics for PAC 400-807 Surface Soil

Contaminant	Sample	Number of Samples	Mean	Standard Deviation	Maximum	Minimum	Range	Unit
9,10-Anthraquinone	1	100	1,300	NA	NA	NA	NA	ug/kg
Acenaphthene	5	40	260	123,000,000	123,000,000	123,000,000	NA	ug/kg
Aluminum	6	33	24,400	1,000,000	1,000,000	1,000,000	16,902	mg/kg
Anthracene	5	40	440	613,000,000	613,000,000	613,000,000	NA	ug/kg
Benzo(a)anthracene	5	40	1,600	784,000	784,000	784,000	NA	ug/kg
Benzo(a)Pyrene	5	40	970	78,400	78,400	78,400	NA	ug/kg
Benzo(b)Fluoranthene	5	40	1,100	784,000	784,000	784,000	NA	ug/kg
Benzo(ghi)Perylene	5	40	620	NA	NA	NA	NA	ug/kg
Benzo(k)Fluoranthene	5	40	1,300	7,840,000	7,840,000	7,840,000	NA	ug/kg
Beryllium	6	33	11	133	133	133	0.97	mg/kg
Bis(2-Ethylhexyl)Phthalate	5	40	570	40,900,000	40,900,000	40,900,000	NA	ug/kg
Calcium	6	50	25,800	NA	NA	NA	4467	mg/kg
Chromium	6	33	213	NA	NA	NA	16.99	mg/kg
Chrysene	5	40	2,100	78,400,000	78,400,000	78,400,000	NA	ug/kg
Copper	6	33	33.4	75,600	75,600	75,600	18.06	mg/kg
Dibenzo(a,h)Anthracene	5	40	270	78,400	78,400	78,400	NA	ug/kg
Fluoranthene	5	40	4,100	81,800,000	81,800,000	81,800,000	NA	ug/kg
Fluorene	5	20	190	81,800,000	81,800,000	81,800,000	NA	ug/kg
Fluorenone	1	100	860	NA	NA	NA	NA	ug/kg
Indeno(1,2,3-cd)Pyrene	5	40	570	784,000	784,000	784,000	NA	ug/kg
Iron	6	50	28,800	613,000	613,000	613,000	18,037	mg/kg
Lithium	6	50	15	40,900	40,900	40,900	11.55	mg/kg
Magnesium	6	50	9,980	NA	NA	NA	2,849.3	mg/kg

Table 5
Summary Statistics for PAC 400-807 Surface Soil

Chemical	Sample	100	1,300	NA	NA	123,000,000	123,000,000	NA	NA	NA	Unit
9,10-Anthraquinone	1	100	1,300	NA	NA	123,000,000	123,000,000	NA	NA	NA	ug/kg
Acenaphthene	5	40	260	123,000,000	123,000,000	1,000,000	1,000,000	784	784	NA	ug/kg
Aluminum	6	33	24,400	1,000,000	1,000,000	613,000,000	613,000,000	784	784	16,902	mg/kg
Anthracene	5	40	440	784,000	784,000	784	784	784	784	NA	ug/kg
Benzo(a)anthracene	5	40	1,600	784,000	784,000	784	784	784	784	NA	ug/kg
Benzo(a)Pyrene	5	40	970	784,000	784,000	784	784	784	784	NA	ug/kg
Benzo(b)Fluoranthene	5	40	1,100	784,000	784,000	784	784	784	784	NA	ug/kg
Benzo(ghi)Perylene	5	40	620	NA	NA	NA	NA	NA	NA	NA	ug/kg
Benzo(k)Fluoranthene	5	40	1,300	7,840,000	7,840,000	784,000	784,000	784	784	NA	ug/kg
Beryllium	6	33	11	133	133	133	133	133	133	0.97	mg/kg
Bis(2-Ethylhexyl)Phthalate	5	40	570	40,900,000	40,900,000	409,000	409,000	409,000	409,000	NA	ug/kg
Calcium	6	50	25,800	NA	NA	NA	NA	NA	NA	4467	mg/kg
Chromium	6	33	213	NA	NA	NA	NA	NA	NA	16.99	mg/kg
Chrysene	5	40	2,100	78,400,000	78,400,000	784,000	784,000	784	784	NA	ug/kg
Copper	6	33	33.4	75,600	75,600	75,600	75,600	75,600	75,600	18.06	mg/kg
Dibenzo(a,h)Anthracene	5	40	270	78,400	78,400	784	784	784	784	NA	ug/kg
Fluoranthene	5	40	4,100	81,800,000	81,800,000	81,800,000	81,800,000	81,800,000	81,800,000	NA	ug/kg
Fluorene	5	20	190	81,800,000	81,800,000	81,800,000	81,800,000	81,800,000	81,800,000	NA	ug/kg
Fluorenone	1	100	860	NA	NA	NA	NA	NA	NA	NA	ug/kg
Indeno(1,2,3-cd)Pyrene	5	40	570	784,000	784,000	784	784	784	784	NA	ug/kg
Iron	6	50	28,800	613,000	613,000	613,000	613,000	613,000	613,000	18,037	mg/kg
Lithium	6	50	15	40,900	40,900	40,900	40,900	40,900	40,900	11.55	mg/kg
Magnesium	6	50	9,980	NA	NA	NA	NA	NA	NA	2,849.3	mg/kg

Characterization Data Summary IHSS Group 400-10

Analyte	Number of Samples Collected	Number of Samples Analyzed	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	DTA Action Level	DTA Action Level	Surface Soil Background Concentration	Unit
Manganese	6	17	788	66,800	66,800	66,800	365.08	mg/kg
Nickel	6	33	18.8	40,900	40,900	40,900	14.91	mg/kg
p-Toluenesulfonamide	2	100	600	NA	NA	NA	NA	ug/kg
Phenanthrene	5	60	1,500	NA	NA	NA	NA	ug/kg
Potassium	6	17	3,320	NA	NA	NA	2,967.2	mg/kg
Pyrene	5	60	4,000	61,300,000	61,300,000	61,300,000	NA	ug/kg
Sodium	6	100	1,720	NA	NA	NA	91.84	mg/kg
Uranium-235	6	67	0.26	113	24	24	0.094	pCi/g
Uranium-238	6	33	3.34	506	103	103	2	pCi/g
Zinc	6	33	81.3	613,000	613,000	613,000	73.76	mg/kg

Characterization Data Summary IHSS Group 400-10

Analyte	Number of Samples Collected	Number of Samples Analyzed	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	DTA Action Level	DTA Action Level	Surface Soil Background Concentration	Unit
Manganese	6	17	788	66,800	66,800	66,800	365.08	mg/kg
Nickel	6	33	18.8	40,900	40,900	40,900	14.91	mg/kg
p-Toluenesulfonamide	2	100	600	NA	NA	NA	NA	ug/kg
Phenanthrene	5	60	1,500	NA	NA	NA	NA	ug/kg
Potassium	6	17	3,320	NA	NA	NA	2,967.2	mg/kg
Pyrene	5	60	4,000	61,300,000	61,300,000	61,300,000	NA	ug/kg
Sodium	6	100	1,720	NA	NA	NA	91.84	mg/kg
Uranium-235	6	67	0.26	113	24	24	0.094	pCi/g
Uranium-238	6	33	3.34	506	103	103	2	pCi/g
Zinc	6	33	81.3	613,000	613,000	613,000	73.76	mg/kg

Table 6
 Summary Statistics for PAC 400-807 Subsurface Soil

Analyte	Total Number of Sample Collections	Number of Samples by Zone	Maximum Concentration (pCi/g)	Mean Concentration (pCi/g)	Standard Deviation (pCi/g)	Number of Samples Exceeding 100 pCi/g	Subsurface Soil Background Concentration (pCi/g)	Unit
Uranium-235	2	50	0.14	113	24	0.12	pCi/g	
Uranium-238	2	50	2.06	506	103	1.49	pCi/g	

Table 6
Summary Statistics for PAC 400-807 Subsurface Soil

Analyte	Total Number of Sample Collections	Number of Samples by Zone	Maximum Concentration (pCi/g)	Mean Concentration (pCi/g)	Standard Deviation (pCi/g)	Number of Samples Exceeding 100 pCi/g	Subsurface Soil Background Concentration (pCi/g)	Unit
Uranium-235	2	50	0.14	113	24	0.12	pCi/g	
Uranium-238	2	50	2.06	506	103	1.49	pCi/g	

3.0 DEVIATIONS FROM PLANNED SAMPLING SPECIFICATIONS

Deviations from the planned sampling specifications described in IASAP Addendum #IA-02-01 (DOE 2001b) are presented in the following table

**Table 7
Deviations from Planned Sampling Specifications**

Sampling Location	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Comments
BZ35-001	2082600	748530	2082600 042	748530 030	
BZ35-002	2082629	748551	2082628 699	748549 759	
BZ35-003	2082633	748516	2082633 128	748514 006	
BZ35-004	2082604	748494	2082613 790	748483 805	Relocated because of utilities
BZ35-005	2082542	748488	2082530 528	748477 754	Relocated because of utilities
BZ35-006	2082538	748524	2082539	748524	
BZ35-007	2082567	748545	2082562 788	748544 180	Relocated because of utilities
BZ35-008	2082641	748444	2082651	748444	Relocated because of utilities
BZ35-010	2082648	748372	2082642	748372	Relocated because of utilities
BZ34-001	2082652	748337	2082558 477	748334 135	
BY33-001	2082514	748159	NA	NA	Not taken
BY33-001	2082514	748159	NA	NA	Not taken
BY34-001	2082524	748359	2082524 00	748359 00	
BY34-002	2082528	748323	2082528 00	748323 00	
BY34-003	2082532	748288	2082539 00	748279 00	Relocated because of utilities
BY34-004	2082536	748252	2082536 00	748252 00	
BY34-005	2082507	748231	2082507 00	748232 00	
BY34-006	2082503	748267	2082508 00	748260 00	Relocated because of utilities
BY34-007	2082495	748338	2082496 00	748326 00	Relocated because of utilities
BY34-008	2082477	748210	2082478 00	748223 00	Relocated because of utilities
BY34-009	2082510	748195	NA	NA	Not taken
BY34-010	2082481	748174	NA	NA	Not taken
BY34-011	2082499	748302	2082499	748302	
BY35-001	2082520	748395	2082520	748395	
BY35-002	2082491	748374	2082491	748374	
BY35-003	2082487	748410	2082487	748410	
BZ33-001	2082671	748158	NA	NA	Not taken
BZ34-001	NA	NA	2082543	748339	Relocated because of utilities
BZ34-002	2082656	748301	2082656	748302	
BZ34-003	2082660	748265	2082660	748265	
BZ34-004	2082663	748229	2082663	748229	
BZ34-005	2082667	748194	2082634	748205	
BZ34-006	2082638	748172	2082632	748244	
BZ34-007	2082634	748208	2082623	748315	

3.0 DEVIATIONS FROM PLANNED SAMPLING SPECIFICATIONS

Deviations from the planned sampling specifications described in IASAP Addendum #IA-02-01 (DOE 2001b) are presented in the following table

**Table 7
Deviations from Planned Sampling Specifications**

Sampling Location	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Comments
BZ35-001	2082600	748530	2082600 042	748530 030	
BZ35-002	2082629	748551	2082628 699	748549 759	
BZ35-003	2082633	748516	2082633 128	748514 006	
BZ35-004	2082604	748494	2082613 790	748483 805	Relocated because of utilities
BZ35-005	2082542	748488	2082530 528	748477 754	Relocated because of utilities
BZ35-006	2082538	748524	2082539	748524	
BZ35-007	2082567	748545	2082562 788	748544 180	Relocated because of utilities
BZ35-008	2082641	748444	2082651	748444	Relocated because of utilities
BZ35-010	2082648	748372	2082642	748372	Relocated because of utilities
BZ34-001	2082652	748337	2082558 477	748334 135	
BY33-001	2082514	748159	NA	NA	Not taken
BY33-001	2082514	748159	NA	NA	Not taken
BY34-001	2082524	748359	2082524 00	748359 00	
BY34-002	2082528	748323	2082528 00	748323 00	
BY34-003	2082532	748288	2082539 00	748279 00	Relocated because of utilities
BY34-004	2082536	748252	2082536 00	748252 00	
BY34-005	2082507	748231	2082507 00	748232 00	
BY34-006	2082503	748267	2082508 00	748260 00	Relocated because of utilities
BY34-007	2082495	748338	2082496 00	748326 00	Relocated because of utilities
BY34-008	2082477	748210	2082478 00	748223 00	Relocated because of utilities
BY34-009	2082510	748195	NA	NA	Not taken
BY34-010	2082481	748174	NA	NA	Not taken
BY34-011	2082499	748302	2082499	748302	
BY35-001	2082520	748395	2082520	748395	
BY35-002	2082491	748374	2082491	748374	
BY35-003	2082487	748410	2082487	748410	
BZ33-001	2082671	748158	NA	NA	Not taken
BZ34-001	NA	NA	2082543	748339	Relocated because of utilities
BZ34-002	2082656	748301	2082656	748302	
BZ34-003	2082660	748265	2082660	748265	
BZ34-004	2082663	748229	2082663	748229	
BZ34-005	2082667	748194	2082634	748205	
BZ34-006	2082638	748172	2082632	748244	
BZ34-007	2082634	748208	2082623	748315	

Characterization Data Summary IHSS Group 400-10

Sampling Location	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Comments
BZ34-008	2082631	748244	2082619	748351	
BZ34-009	2082623	748315	2082591	748319	
BZ34-010	2082619	748351	2082594	748294	
BZ34-011	2082590	748330	2082598	748259	Relocated because of utilities
BZ34-012	2082594	748294	NA	NA	Not taken
BZ34-013	2082598	748259	NA	NA	Not taken
BZ34-014	2082601	748223	2082605	748227	
BZ34-015	2082605	748187	NA	NA	Not taken
BZ34-016	2082576	748166	NA	NA	Not taken
BZ34-017	2082572	748202	2082570	748219	Relocated because of utilities
BZ34-018	2082569	748237	2082569	748237	
BZ34-019	2082565	748273	2082565	748273	
BZ34-020	2082561	748309	2082567	748301	Relocated because of utilities
BZ34-021	2082557	748345	2082559	748334	
BZ34-022	2082539	748216	2082539	748221	Relocated because of utilities
BZ34-023	2082543	748180	NA	NA	Not taken
BZ35-011	2082615	748387	2082615	748395	Relocated because of utilities
BZ35-012	2082582	748402	2082582	748402	
BZ35-013	2082553	748380	2082553	748380	
BZ35-014	2082644	748408	2082640	748395	Relocated because of utilities
BZ35-015	2082586	748366	2082586	748355	Relocated because of utilities
BZ34-034	NA	NA	2082662	748229	Not planned

NA = not applicable

Characterization Data Summary IHSS Group 400-10

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4.0 DATA QUALITY ASSESSMENT

The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001a), 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:

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 - V&V Guidelines for Metals, DA-SS05-v1, 1997d
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This report will be submitted to the Comprehensive Environmental, Response, Compensation and Liability Act (CERCLA) Administrative Record (AR) for permanent storage within 30 days of approval by the Colorado Department of Public Health and Environmental (CDPHE) and/or the U S Environmental Protection Agency (EPA)

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DQO Decisions

Consistent with the original DQO decision rules of the project, a sum-of-ratios (SOR) calculation was performed on results by sample and across the Area of Concern (AOC). No sample SOR exceeded one (1) (unity) relative to RFCAs Tier I action levels. Several sample SORs exceeded one (1) relative to Tier II action levels, all due to nonradiological constituents, specifically arsenic and selected semivolatile organic compounds (SVOCs). QC evaluations performed on IA Group 400-10 are documented within the databases "PlanvsActuals2.mdb" and "IHSS-specificSets.mdb".

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 (precision, accuracy, representativeness, completeness, comparability, and sensitivity) parameters are satisfactory, i.e., within specified tolerances documented in the lab-specific SOW. Satisfactory V&V of laboratory quality controls, including precision, accuracy, and comparability, are indicated by a 10% (or greater) validation frequency of all results by

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method and matrix-type, and <10% rejection of those records validated. The validation results summarized in Table 8 indicate that laboratory results are usable with the qualifications noted. Hardcopy records of the V&V results and individual (analytical) data packages are filed by report identification number (RIN) and are maintained by K-H Analytical Services Division (ASD), hardcopies will ultimately reside in the Federal Center (Lakewood, Colorado). Hardcopy records may also be viewed as Adobe® Acrobat (*.pdf) files on the RFETS intranet under the Analytical Services link.

A summary of the validated records on presented in Table 8 on the following page.

Precision

Precision of field sampling was adequate for 5 of 6 real/duplicate sample pairs to within concentrations below all respective RFCA Tier II action levels. The real QC-sample pair that did not produce acceptable precision resulted in an additional sampling due to an elevated lead result above Tier I action levels (1,110 ppm vs 85 ppm). The third sample yielded lead results below the RFCA Tier II action level, and thus repeatability was established below the RFCA Tier II action levels.

Accuracy and Bias

Distance measurements recorded on maps are within ± 1 ft, based on the GPS technology using Trimble 4800 Series equipment.

Methylene chloride results in real samples should be concluded as non-detects and should not be used in SOR calculations, as the real results do not exceed 10 times their associated lab blank concentrations (use of the "10-times rule" per EPA data validation guidance, EPA, 1996a).

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:

- 1 Implementation of industry-standard Chain-of-Custody protocols,
- 2 Compliance with sample preservation and hold times, and
- 3 Compliance with documented and Site-approved sampling plans (IASAP) and procedures, including SW-846 analytical methods. Graphical comparisons can be made between the planning maps, within the IASAP and SAP-Addenda, and maps with actual sample locations published within this report.)

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Table 8
Summary of Validated Records for Group 400-10

Validation Qualifier Code	Number of Samples	Metals			Rads	VOCs		Water Quality
		METADD	SMETCLP	SW-846 6010/6010B		SW-846 8260	VOACLP	
Null	195	-	33	33	-	95	-	34
A	187	-	120	-	14	-	41	12
J	125	51	36	38	-	-	-	-
J1	12	-	-	12	-	-	-	-
V	2586	4	367	74	81	1210	826	24
V1	18	-	-	18	-	-	-	-
Z	28	5	23	-	-	-	-	-
JB	12	-	-	-	-	12	-	-
UJ	73	-	-	11	-	62	-	-
UJ1	1	-	-	1	-	-	-	-
R	51	-	33	-	1	-	17	-
Total	3288	60	612	187	96	1379	884	70
Percent of Records Validated	98%	100%	95%	100%	99%	100%	98%	100%
Percent Rejected	1.6%	0.0%	5.4%	0.0%	1.0%	0.0%	1.9%	0.0%

Null N, Y, Z = not validated
 A = acceptable with qualifications
 J = estimated (semi-quantitative) value
 J1 = estimated quantity - verification
 V = valid without qualification
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Sampling completeness is evaluated through the number and types of samples acquired relative to the project DQOs. A summary of the V&V for all Electronic Data Deliverable (EDD) records, Table 8, indicates that the minimum required percentages of validation, >10%, were achieved for all sample types and methods shown. Of the percentages validated, greater than 90% were acceptable for use (i.e., well less than 10% of the records were rejected).

Relative to adequate sampling power, use of either EPA's QA/G-4 and/or Gilbert's Equation (13.23) would indicate that enough samples were acquired to conclude with better than 90% confidence that the median SOR value is less than the action level of unity (1), at RFCA Tier I Action Levels across the AOC.

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),
- 3 Use of site-approved procedures (e.g., Contractual Statements of Work for lab analyses),
- 4 Systematic quality controls, and
- 5 Thorough documentation of the planning, sampling/analysis process, and data reduction into formats designed for making decisions (traceable to the project's original data quality objectives)

Sensitivity

Adequate sensitivities, in units of ug/kg (ppb) for organics, mg/kg (parts per million) for metals, and pCi/g for radionuclides were attained for all analytes relative to RFCA Tier II Action Levels (subsurface soil) with exceptions noted in Table 9 on the following page. Adequate sensitivity is defined as an RL less than the analyte's associated action level equal ideally to <1/2 the Action Level.

Summary

Data quality objectives were attained for the 400-10 data set with the qualifications stated herein, relative to sampling power (number and types of samples), confidence in decisions (>90%), and the various V&V criteria.

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Sampling completeness is evaluated through the number and types of samples acquired relative to the project DQOs. A summary of the V&V for all Electronic Data Deliverable (EDD) records, Table 8, indicates that the minimum required percentages of validation, >10%, were achieved for all sample types and methods shown. Of the percentages validated, greater than 90% were acceptable for use (i.e., well less than 10% of the records were rejected).

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Data quality objectives were attained for the 400-10 data set with the qualifications stated herein, relative to sampling power (number and types of samples), confidence in decisions (>90%), and the various V&V criteria.

Table 9
Exceptions to Adequate Sensitivities

Analyte Name	CAS Number	Number of Samples	RL	Tier II Action Level	Unit
1,1,2,2-Tetrachloroethane	79-34-5	14	5	1 68E+00	ug/kg
Arsenic	7440-38-2	13	10	2 99E+00	mg/kg
Beryllium	7440-41-7	13	5	1 04E+00	mg/kg
Beryllium (Be)	7440-41-7	1	11	1 04E+00	mg/kg
cis-1,3-Dichloropropene	10061-01-5	42	5	1 20E+00	ug/kg
trans-1,3-Dichloropropene	10061-02-6	42	5	1 20E+00	ug/kg
Trans-1,3-Dichloropropene	10061-02-6	2	13	1 20E+00	ug/kg
Vinyl Chloride	75-01-4	1	5	3 46E+00	ug/kg
Vinyl Chloride	75-01-4	41	10	3 46E+00	ug/kg

RL = Reporting Limit
CAS = Chemical Abstract Service

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- DOE, 2000, Rocky Flats Cleanup Agreement (RFCA), Attachment 5, March
- DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June
- DOE, 2001b, Industrial Area Sampling and Analysis Plan Addendum #IA-02-01, Rocky Flats Environmental Technology Site, Golden, Colorado, November
- DOE, 2002a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January
- DOE, 2002b, Environmental Restoration RFCA Standard Operating Protocol Notification #02-01, Rocky Flats Environmental Technology Site, Golden, Colorado, January
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APPENDIX A
IHSS GROUP 400-10
RAW DATA

APPENDIX A
IHSS GROUP 400-10
RAW DATA

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IHSS 120 2 Raw Data

Sample ID	Depth (m)	Latitude	Longitude	Depth (m)	Parameter	Value	Unit	Method	Quality	Notes
120-010	0.5	12.10	120.00	0.5	PCB-153	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-154	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-155	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-156	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-157	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-158	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-159	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-160	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-161	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-162	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-163	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-164	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-165	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-166	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-167	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-168	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-169	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-170	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-171	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-172	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-173	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-174	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-175	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-176	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-177	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-178	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-179	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-180	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-181	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-182	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-183	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-184	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-185	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-186	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-187	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-188	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-189	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-190	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-191	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-192	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-193	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-194	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-195	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-196	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-197	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-198	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-199	0.05	ug/kg	GC/MS	V	
120-010	0.5	12.10	120.00	0.5	PCB-200	0.05	ug/kg	GC/MS	V	

IHSS 120 2 Raw Data

Sample No.	Time	Temp	Flow	Pressure	Detector	Response	Retention Time	Peak ID	Compound Name	Quantity	Unit	Concentration	Notes
120-001	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1

IHSS 120 2 Raw Data

Sample ID	Time	Temp	Pressure	Flow	Concentration	Peak	Retention	Area	Height	Width	Resolution	Integration	Identification	Library	Match	Confidence
120-001	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1	10.1

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IHSS 120 2 Raw Data

Well ID	Depth (ft)	Sample Date	Sample Type	Parameter	Value	Unit	Method	Notes	Lab	QA/QC	Remarks			
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Bromobenzene	Organics	NON	76-26-3	5.4	UGRKG	U	0.97
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Bromobenzene	Organics	NON	74-83-3	5.4	UGRKG	U	1.3
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	CARBON DISULFIDE	Organics	NON	75-13-0	5.4	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Carbon tetrachloride	Organics	NON	86-28-3	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Chlorobenzene	Organics	NON	104-86-7	5.4	UGRKG	U	0.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Chlorobenzene	Organics	NON	76-60-3	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Chlorobenzene	Organics	NON	87-48-3	5.4	UGRKG	U	0.96
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	Chlorobenzene	Organics	NON	74-87-3	5.4	UGRKG	U	1.0
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,2-DICHLOROPHTHENE	Organics	NON	188-86-2	2.7	UGRKG	U	1.0
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,2-DICHLOROPHTHENE	Organics	NON	10081-91-3	5.4	UGRKG	U	0.6
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	10081-91-3	5.4	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	194-48-1	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	74-86-3	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	76-71-3	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	100-11-4	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	89-48-3	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	84-82-3	5.4	UGRKG	U	0.91
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	76-08-3	5.4	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	81-30-3	5.4	UGRKG	U	0.92
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	104-81-4	5.4	UGRKG	U	1.3
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	108-88-1	5.4	UGRKG	U	1.3
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	86-18-3	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	108-13-4	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	138-48-3	5.4	UGRKG	U	1.2
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	108-92-3	5.4	UGRKG	U	0.71
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	76-01-4	5.4	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	84-08-3	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	127-18-4	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	108-88-3	5.4	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	184-90-5	2.7	UGRKG	U	0.8
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	10081-92-3	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	76-28-1	5.4	UGRKG	U	0.5
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	76-01-1	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	100-28-7	5.4	UGRKG	U	1.1
25-P14 805	10.5	10/1/84	SW-448	025000-284	74884.78	0250 01	1,3-DICHLOROPHTHENE	Organics	NON	100-28-7	5.4	UGRKG	U	1.1

IHSS 161Raw Data

005-10	02E0007-281 003	Head	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110	112	114	116	118	120	122	124	126	128	130	132	134	136	138	140	142	144	146	148	150	152	154	156	158	160	162	164	166	168	170	172	174	176	178	180	182	184	186	188	190	192	194	196	198	200	202	204	206	208	210	212	214	216	218	220	222	224	226	228	230	232	234	236	238	240	242	244	246	248	250	252	254	256	258	260	262	264	266	268	270	272	274	276	278	280	282	284	286	288	290	292	294	296	298	300	302	304	306	308	310	312	314	316	318	320	322	324	326	328	330	332	334	336	338	340	342	344	346	348	350	352	354	356	358	360	362	364	366	368	370	372	374	376	378	380	382	384	386	388	390	392	394	396	398	400	402	404	406	408	410	412	414	416	418	420	422	424	426	428	430	432	434	436	438	440	442	444	446	448	450	452	454	456	458	460	462	464	466	468	470	472	474	476	478	480	482	484	486	488	490	492	494	496	498	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	546	548	550	552	554	556	558	560	562	564	566	568	570	572	574	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814	816	818	820	822	824	826	828	830	832	834	836	838	840	842	844	846	848	850	852	854	856	858	860	862	864	866	868	870	872	874	876	878	880	882	884	886	888	890	892	894	896	898	900	902	904	906	908	910	912	914	916	918	920	922	924	926	928	930	932	934	936	938	940	942	944	946	948	950	952	954	956	958	960	962	964	966	968	970	972	974	976	978	980	982	984	986	988	990	992	994	996	998	1000
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September 2002

Characterization Data Summary
IHSS Group 500-6

Appendix A - IHSS Group 500-6 - Raw Data

Appendix

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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
ft	feet
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L L C
MDL	method detection limit
NA	not applicable
ND	not detected
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RIN	report identification number
SAP	Sampling and Analysis Plan
SOR	sum of ratio
µg/kg	microgram per kilogram
VOC	volatile organic compound
V&V	verification and validation

ACRONYMS

Characterization of IHSS Group 500-6 consisted of historical knowledge (DOE 1993) and additional sampling at locations with specifications as described in IASAP Addendum #IA-02-01 (DOE 2001b). The sampling specifications for the characterization samples collected are listed in Table 1. The location of these samples and analytical results are shown on Figure 2. There were no sampling location deviations from the IASAP Addendum. Analytical results are presented in Tables 2 and 3. Raw data are presented in Appendix A. Results indicate that all contaminant concentrations are less than the RfCA Tier II action levels (ALs).

2.0 SITE CHARACTERIZATION

The locations of IHSS Group 500-6 and PAC 500-906 are shown on Figure 1

- PAC 500-906 – Asphalt Surface Near Building 559

IHSS Group 500-6 consists of the following Potential Area of Concern (PAC)

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 500-6 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001a) and IASAP Addendum #IA-02-01 (DOE 2001b).

1.0 INTRODUCTION

Table 1
IHSS Group 500-6 - Characterization Sampling Specifications

IHSS Group	IHSS/PAC/CUBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Lab Method
500-6	PAC 500-906 - Asphalt Surface Near Building 559	CD43-001	2083446 11	750070 71	surface Soil	A	VOCs	8260
		CD43-002	2083439 93	750075 86	surface Soil	A	VOCs	8260

Table 2
IHSS Group 500-6 - Characterization Data Greater than Method Detection Limits

IHSS Group	IHSS/PAC/CUBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (ft)	Ending Depth (ft)	Analyte	Result	Bkgr+ 2SD	Tier I	Tier II	Unit
						(ft)	(ft)						
500-6	PAC 500-906 - Asphalt Surface Near Building 559	CD43-001	2083446 11	750070 71	Surface Soil	0 00	0 50	Methylene chloride	2 00	NA	239,000,000	598,000	ug/kg
		CD43-002	2083439 93	750075 86	Surface Soil	0 00	0 50	Acetone	4 80	NA	192,000,000	192,000,000	ug/kg
		CD43-002	2083439 93	750075 86	Surface Soil	0 00	0 50	Ethylbenzene	5 50	NA	192,000,000	192,000,000	ug/kg
		CD43-002	2083439 93	750075 86	Surface Soil	0 00	0 50	Methylene chloride	1 80	NA	239,000,000	598,000	ug/kg
		CD43-002	2083439 93	750075 86	Surface Soil	0 00	0 50	Xylenes (total)	24 00	NA	1,000,000,000	1,000,000,000	ug/kg

Table 3
IHSS Group 500-6 - Summary of Analytical Results

Analyte	Total Number of Samples Collected	Number of Samples Detected	Maximum Concentration (ug/kg)	Average Concentration (ug/kg)	Tier I Action Level	Tier II Action Level	Background Concentration +2SD	Unit
Acetone	2	1	4 80	4 80	192,000,000	192,000,000	NA	ug/kg
Ethylbenzene	2	1	5 50	5 50	192,000,000	192,000,000	NA	ug/kg
Methylene Chloride	2	2	2 00	1 90	239,000,000	598,000	NA	ug/kg
Xylenes (total)	2	1	50	24 00	1,000,000,000	1,000,000,000	NA	ug/kg

SD = standard deviation
NA = not applicable

Figure 2
IHSS Group 500-6
Results Greater Than
Standard Deviations or
Background Mean Plus Two
Method Detection Limits

KEY

- PAC
- Building
- Stream, ditch, or other drainage
- Paved area
- Dirt road
- Sampling Location

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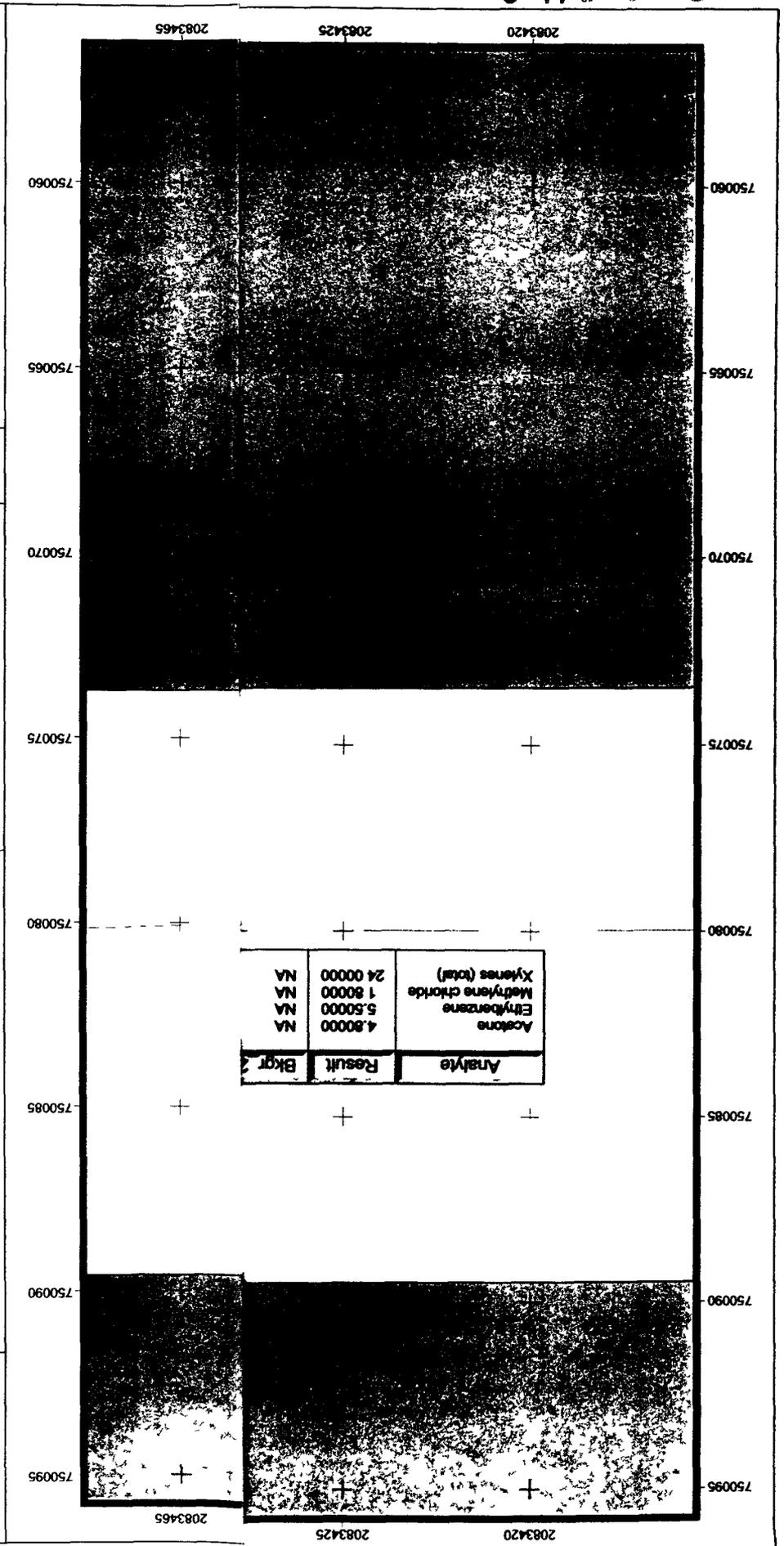
Scale = 1 75
 State Plane Coordinate Projection
 Colorado Central Zone
 Datum NAD 27

U S Department of Energy
 Rocky Flats Environmental Protection Agency

Prepared by: RADMS

Prepared by: KAISER HILL COMPANY

500-6char apr
 September 2002



A total of two (2) volatile organic compound (VOC) samples, both asphalt, were acquired from the 500-6 area. Sum of ratios (SOR) did not exceed one (1) with respect to RFCA Tier II action levels for either sample, thus no further action is required for the area of interest.

Laboratory accuracy and precision were acceptable for both samples based on the verification/validation percentages given in Table 4. Sampling precision was acceptable because results, from both samples, were repeatable to quantities well below RFCA Tier II action levels. Because all real sample results were less than action levels, the false positives, due to cross-contamination in the field, were nonexistent as all sample results were well less than associated action levels. Sensitivities were satisfactory as all reporting limits were less than corresponding RFCA Tier II action levels.

- EPA 540/R-94/012, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review,
 - Kaiser Hill (K-H), 1997a, V&V General Guidelines for Data Verification and Validation, DA-GR01-V1, December;
 - K-H, 1997b, V&V Guidelines for Volatile Organics, DA-SS01-V1, and Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5
- The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001a), 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 IA, 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

3.0 DATA QUALITY ASSESSMENT

Hardcopy records of the V&V results and individual (analytical) data packages are filed by report identification number (RIN) and are maintained by Kaiser-Hill (K-H) Analytical Services Division (ASD), hardcopies will ultimately reside in the Federal Center (Lakewood, Colorado) Hardcopy records may also be viewed as Adobe® Acrobat (*.pdf) files on the RFETS intranet under the Analytical Services link. This report will be submitted to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Administrative Record (AR) for permanent storage within 30 days of approval by Colorado Department of Public Health and Environmental (CDPHE) and/or U S Environmental Protection Agency (EPA)

Null = not validated
 J = estimated (semi-quantitative) value
 V = valid without qualification
 JB = method blank contamination - validation
 UJ = estimated at elevated detection

Validation Qualifier Code	Number of Samples	Lab Method SW-846 8260
Null	8	8
J	1	1
V	125	125
JB	2	2
UJ	1	1
Total number of records	137	137
Percent validated (none rejected)	94%	94%

Table 4
 Summary of Validated Records for IHSS 500-6

Data quality is acceptable based on the V&V percentages given in the following table

- 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 the gamma spectroscopy method

Sample locations were biased, as planned, and are representative of the 500-6 area relative to the site-specific history. Other criteria that corroborate representativeness include

DOE, 1993, Historical Release Report, Fourth Quarterly Update, April 1 to July 1
 DOE, 1999, DOE Order 414 1A, Quality Assurance
 DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental
 Technology Site, Golden, Colorado, June
 DOE, 2001b, Industrial Area Sampling and Analysis Plan Addendum #IA-02-01, Rocky
 Flats Environmental Technology Site, Golden, Colorado, November
 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 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
 Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5

4.0 REFERENCES

Best Available Copy

**IHSS GROUP 500-6
RAW DATA**

APPENDIX A

Best Available Copy

02E0023-001 001	SW-946 8280	02E0023-001	1,1,2-TETRACHLOROETHANE	Organics	NON RAD	630-20-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,1,2-TRICHLOROETHANE	Organics	NON RAD	630-20-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,1-TRICHLOROETHANE	Organics	NON RAD	71-82-8	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,1-TRICHLOROETHANE	Organics	NON RAD	71-82-8	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,1,2-TRICHLOROETHANE	Organics	NON RAD	78-34-5	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,1,2-TRICHLOROETHANE	Organics	NON RAD	78-34-5	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,1,2-TRICHLORO-1,2,2-TRIFLUOR	Organics	NON RAD	78-13-1	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,1,2-TRICHLORO-1,2,2-TRIFLUOR	Organics	NON RAD	78-13-1	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-TRICHLOROETHANE	Organics	NON RAD	78-00-5	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-TRICHLOROETHANE	Organics	NON RAD	78-00-5	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1-DICHLOROETHANE	Organics	NON RAD	78-34-3	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1-DICHLOROETHANE	Organics	NON RAD	78-34-3	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1-DICHLOROETHANE	Organics	NON RAD	75-34-3	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1-DICHLOROETHANE	Organics	NON RAD	75-34-3	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1-DICHLOROETHANE	Organics	NON RAD	75-35-4	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1-DICHLOROETHANE	Organics	NON RAD	75-35-4	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1-DICHLOROETHANE	Organics	NON RAD	863-68-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1-DICHLOROETHANE	Organics	NON RAD	863-68-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1-DICHLOROETHANE	Organics	NON RAD	87-81-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1-DICHLOROETHANE	Organics	NON RAD	87-81-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2,3-TRICHLOROPROPANE	Organics	NON RAD	96-18-4	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2,3-TRICHLOROPROPANE	Organics	NON RAD	96-18-4	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2,4-TRICHLOROPROPANE	Organics	NON RAD	120-82-1	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2,4-TRICHLOROPROPANE	Organics	NON RAD	120-82-1	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2,4-TRIMETHYLENE	Organics	NON RAD	96-63-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2,4-TRIMETHYLENE	Organics	NON RAD	96-63-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2,4-TRIMETHYLENE	Organics	NON RAD	96-12-8	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2,4-TRIMETHYLENE	Organics	NON RAD	96-12-8	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-DIBROMO-3-CHLOROPROPANE	Organics	NON RAD	106-83-4	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-DIBROMO-3-CHLOROPROPANE	Organics	NON RAD	106-83-4	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-DIBROMOETHANE	Organics	NON RAD	106-83-4	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-DIBROMOETHANE	Organics	NON RAD	106-83-4	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-DICHLOROETHANE	Organics	NON RAD	96-50-1	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-DICHLOROETHANE	Organics	NON RAD	96-50-1	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-DICHLOROETHANE	Organics	NON RAD	107-06-2	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-DICHLOROETHANE	Organics	NON RAD	107-06-2	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,2-DICHLOROPROPANE	Organics	NON RAD	78-87-5	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,2-DICHLOROPROPANE	Organics	NON RAD	78-87-5	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,3,5-TRIMETHYLBENZENE	Organics	NON RAD	106-87-8	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,3,5-TRIMETHYLBENZENE	Organics	NON RAD	106-87-8	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	1,3-DICHLOROPROPANE	Organics	NON RAD	142-28-9	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	1,3-DICHLOROPROPANE	Organics	NON RAD	142-28-9	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	2,2-DICHLOROPROPANE	Organics	NON RAD	594-20-7	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	2,2-DICHLOROPROPANE	Organics	NON RAD	594-20-7	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	2-BUTANONE	Organics	NON RAD	78-93-3	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	2-BUTANONE	Organics	NON RAD	78-93-3	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	2-CHLOROTOLUENE	Organics	NON RAD	95-49-8	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	2-CHLOROTOLUENE	Organics	NON RAD	95-49-8	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	2-HEXANONE	Organics	NON RAD	99-1-78-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	2-HEXANONE	Organics	NON RAD	99-1-78-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	4-CHLOROTOLUENE	Organics	NON RAD	106-43-4	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	4-CHLOROTOLUENE	Organics	NON RAD	106-43-4	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	4-ISOPROPYLTOLUENE	Organics	NON RAD	99-87-6	5	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	4-ISOPROPYLTOLUENE	Organics	NON RAD	99-87-6	5	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	4-METHYL-2-PENTANONE	Organics	NON RAD	108-10-1	20	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	4-METHYL-2-PENTANONE	Organics	NON RAD	108-10-1	20	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	ACETONE	Organics	NON RAD	67-64-1	20	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	ACETONE	Organics	NON RAD	67-64-1	20	0	UGKGG	U	V								
02E0023-001 001	SW-946 8280	02E0023-001	BENZENE	Organics	NON RAD	71-43-2	48	0	UGKGG	U	V								
02E0023-002 001	SW-946 8280	02E0023-002	BENZENE	Organics	NON RAD	71-43-2	48	0	UGKGG	U	V								

3 84E+07 3 84E+07 9 48E+04 9 48E+02
 3 84E+07 3 84E+07 9 48E+04 9 48E+02
 2 24E+06 2 24E+06 1 68E+02 1 68E+00
 2 24E+06 2 24E+06 1 68E+02 1 68E+00
 3 14E+07 7 86E+04 1 23E+03 1 23E+01
 3 14E+07 7 86E+04 1 23E+03 1 23E+01
 1 92E+08 6 89E+05 6 89E+03
 1 92E+08 6 89E+05 6 89E+03
 7 47E+05 7 47E+03 2 19E+01 2 19E+01
 7 47E+05 7 47E+03 2 19E+01 2 19E+01
 1 92E+07 1 92E+07 4 33E+05 4 33E+03
 1 92E+07 1 92E+07 4 33E+05 4 33E+03
 1 73E+08 1 73E+08 1 32E+06 1 32E+04
 1 73E+08 1 73E+08 1 32E+06 1 32E+04
 4 93E+06 4 93E+04 6 88E+02 6 88E+00
 4 93E+06 4 93E+04 6 88E+02 6 88E+00
 6 59E+06 6 59E+04 1 13E+03 1 13E+01
 6 59E+06 6 59E+04 1 13E+03 1 13E+01
 1 00E+09 1 00E+09
 1 00E+09 1 00E+09
 1 54E+08 1 54E+08 2 72E+07 2 72E+05
 1 54E+08 1 54E+08 2 72E+07 2 72E+05
 1 92E+08 1 92E+08 2 72E+07 2 72E+05
 1 92E+08 1 92E+08 2 72E+07 2 72E+05
 1 55E+07 1 55E+05 1 41E+03 1 41E+01

02E0023-002 001	SW-846 8260	02E0023-002	TETRACHLOROETHENE	Organics	VOC	NON RAD	127-18-4	5	0 UG/KG	U	V	8 82E+08	8 82E+04	3 15E+03	3 15E+01
02E0023-002 001	SW-846 8260	02E0023-002	TOLUENE	Organics	VOC	NON RAD	106-98-3	5	0 UG/KG	U	V	3 84E+08	3 84E+08	7 07E+05	7 07E+03
02E0023-001 001	SW-846 8260	02E0023-001	TRANS-1,2-DICHLOROETHENE	Organics	VOC	NON RAD	106-98-3	5	0 UG/KG	U	V	3 84E+08	3 84E+08	7 07E+05	7 07E+03
02E0023-002 001	SW-846 8260	02E0023-002	TRANS-1,2-DICHLOROETHENE	Organics	VOC	NON RAD	156-80-5	2 5	0 UG/KG	U	V				
02E0023-001 001	SW-846 8260	02E0023-001	TRANS-1,3-DICHLOROPROPENE	Organics	VOC	NON RAD	10081-02-4	5	0 UG/KG	U	V	2 49E+06	2 49E+04	1 20E+02	1 20E+00
02E0023-002 001	SW-846 8260	02E0023-002	TRANS-1,3-DICHLOROPROPENE	Organics	VOC	NON RAD	79-01-6	1 1	0 UG/KG	U	V	2 49E+06	2 49E+04	1 20E+02	1 20E+00
02E0023-001 001	SW-846 8260	02E0023-001	TRICHLOROETHENE	Organics	VOC	NON RAD	10081-02-4	5	0 UG/KG	U	V	2 49E+06	2 49E+04	1 20E+02	1 20E+00
02E0023-002 001	SW-846 8260	02E0023-002	TRICHLOROETHENE	Organics	VOC	NON RAD	79-01-6	1 1	0 UG/KG	U	V	2 49E+06	2 49E+04	1 20E+02	1 20E+00
02E0023-001 001	SW-846 8260	02E0023-001	TRICHLOROFLUOROMETHANE	Organics	VOC	NON RAD	75-69-4	5	0 UG/KG	U	V	1 63E+08	4 07E+05	3 28E+03	3 28E+01
02E0023-002 001	SW-846 8260	02E0023-002	TRICHLOROFLUOROMETHANE	Organics	VOC	NON RAD	75-69-4	5	0 UG/KG	U	V	1 63E+08	4 07E+05	3 28E+03	3 28E+01
02E0023-002 001	SW-846 8260	02E0023-002	UNKNOWN	Organics	VOC	NON RAD	TIC	7 1	7 1 UG/KG	U	V				
02E0023-002 001	SW-846 8260	02E0023-002	VINYL CHLORIDE	Organics	VOC	NON RAD	75-01-4	5	0 UG/KG	U	V	2 36E+05	2 36E+03	3 48E+02	3 48E+00
02E0023-001 001	SW-846 8260	02E0023-001	VINYL CHLORIDE	Organics	VOC	NON RAD	75-01-4	5	0 UG/KG	U	V	2 36E+05	2 36E+03	3 48E+02	3 48E+00
02E0023-001 001	SW-846 8260	02E0023-001	XYLENES (TOTAL)	Organics	VOC	NON RAD	1330-20-7	5	0 UG/KG	U	V	1 00E+09	1 00E+09	9 74E+06	9 74E+04
02E0023-002 001	SW-846 8260	02E0023-002	XYLENES (TOTAL)	Organics	VOC	NON RAD	1330-20-7	5	0 UG/KG	U	V	1 00E+09	1 00E+09	9 74E+06	9 74E+04
02E0023-001 001	SW-846 8260	02E0023-001	XYLENES (TOTAL)	Organics	VOC	NON RAD	1330-20-7	24	24 UG/KG	U	V				

September 2002

Characterization Data Summary
IHSS Group 600-6

Appendix A - IHSS Group 600-6 - Raw Data

Appendix

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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
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L L C
MDL	method detection limit
NA	not applicable
ND	not detected
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RIN	report identification number
SAP	Sampling and Analysis Plan
SOR	sum of ratios
ug/kg	microgram per kilogram
V&V	verification and validation

ACRONYMS

1.0 INTRODUCTION

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 600-6 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001a) and IASAP Addendum #IA-02-01 (DOE 2001b)

IHSS Group 600-6 consists of the following Potential Area of Concern (PAC)

- PAC 600-1005 – Process Waste Spill – Portal 1

The location of IHSS Group 600-6 and PAC 600-1005 are shown on Figure 1

2.0 SITE CHARACTERIZATION

Characterization of IHSS Group 600-6 consisted of historical knowledge (DOE 1994) and additional sampling at locations with specifications as described in IASAP Addendum #IA-02-01 (DOE 2001b). The sampling specifications for the characterization samples collected are listed in Table 1. The location of these samples are shown on Figure 2. There were no sampling location deviations from the IASAP Addendum. Analytical results were non-detect. A summary of the analytical results is presented in Table 2. Raw data are presented in Appendix A. Results indicate that all contaminant concentrations are less than the RfCA Tier II action levels (ALs).

Table 1
IHSS Group 600-6 – Characterization Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Lab Method
600-6	PAC 600-1005 – Former Pesticide Storage Area	CD35-A001	2083426 50	748490 04	surface soil	A	Pesticides/Herbicides	SW-846 8151A
		CD35-A002	2083422 16	748484 70	surface soil	A	Pesticides/Herbicides	SW-846 8151A

Table 2
IHSS 600-6 - Summary of Analytical Results

Analyte	Total Number Samples Collected	Number of Samples Above Detection Limit	Detection Frequency (%)	Maximum Concentration	Average Concentration	Tier I Action Level	Tier II Action Level	Background Concentration +2SD	Unit
2,2-Dichloropropanoic Acid	2	0	0	43	43	NA	NA	NA	ug/kg
2,4,5-Trichlorophenoxyacetic Acid	2	0	0	22	21.5	NA	NA	NA	ug/kg
2,4-DB	2	0	0	87	86	NA	NA	NA	ug/kg
2,4-Dichlorophenoxyacetic Acid, Salts And Esters	2	0	0	87	86	NA	NA	NA	ug/kg
Dicamba	2	0	0	43	43	NA	NA	NA	ug/kg
Dichlorprop	2	0	0	87	86	NA	NA	NA	ug/kg
MCPA	2	0	0	8700	8600	NA	NA	NA	ug/kg
MCPP	2	0	0	8700	8600	NA	NA	NA	ug/kg
Phenol, 2-(1-Methylpropyl)-4,6-Dinitro-	2	0	0	13	13	NA	NA	NA	ug/kg
Propanoic Acid, 2-(2,4,5-Trichlorophenoxy)	2	0	0	22	21.5	NA	NA	NA	ug/kg
4,4'-DDD	2	0	0	18	9.9	1 870,000	18,700	NA	ug/kg
4,4'-DDE	2	0	0	18	9.9	1 320,000	13,200	NA	ug/kg
4,4'-DDT	2	0	0	18	9.9	1 320,000	13,200	NA	ug/kg
Aldrin	2	0	0	18	9.9	26,400	264	NA	ug/kg
Alpha-BHC	2	0	0	18	9.9	71 100	711	NA	ug/kg
Azinphos-Methyl	2	0	0	890	490	NA	NA	NA	ug/kg
Beta-BHC	2	0	0	18	9.9	249,000	2,490	NA	ug/kg
Bolstar (Sulprofos)	2	0	0	180	99	NA	NA	NA	ug/kg
Chlordane (Technical)	2	0	0	180	99	NA	NA	NA	ug/kg
Chlorpyrifos	2	0	0	89	49	NA	NA	NA	ug/kg
Coumaphos	2	0	0	180	99	NA	NA	NA	ug/kg
Delta-BHC	2	0	0	18	9.9	NA	NA	NA	ug/kg
Demeton (O.S Total)	2	0	0	89	49	NA	NA	NA	ug/kg
Diazinon	2	0	0	89	49	NA	NA	NA	ug/kg
Dichlorovos	2	0	0	180	99	NA	NA	NA	ug/kg

Characterization Data Summary - IHSS Group 600-6

Diieldn	2	0	0	0	18	99	28,000	280	NA	ug/kg
Dimethoate	2	0	0	0	180	99	NA	NA	NA	ug/kg
Disulfoton	2	0	0	0	89	49	NA	NA	NA	ug/kg
Endosulfan I	2	0	0	0	18	99	1,000,000,000	11,500,000	NA	ug/kg
Endosulfan II	2	0	0	0	18	99	1,000,000,000	11,500,000	NA	ug/kg
Endosulfan Sulfate	2	0	0	0	18	99	1,000,000,000	11,500,000	NA	ug/kg
Endrn	2	0	0	0	18	99	2,300,000	576,000	NA	ug/kg
Endrn Aldehyde	2	0	0	0	18	99	NA	NA	NA	ug/kg
Ethoprop	2	0	0	0	89	49	NA	NA	NA	ug/kg
Famphur	2	0	0	0	350	193	NA	NA	NA	ug/kg
Fensulfotion	2	0	0	0	320	176.5	NA	NA	NA	ug/kg
Fenthion	2	0	0	0	89	49	NA	NA	NA	ug/kg
Gamma-BHC [Lindane]	2	0	0	0	18	99	345,000	3,450	NA	ug/kg
Hepachlor	2	0	0	0	18	99	99,600	996	NA	ug/kg
Hepachlor Epoxide	2	0	0	0	72	39.65	49,300	493	NA	ug/kg
Malathion	2	0	0	0	210	116	NA	NA	NA	ug/kg
Merphos	2	0	0	0	89	49	NA	NA	NA	ug/kg
Methoxychlor	2	0	0	0	35	19.3	9,610,000	9,610,000	NA	ug/kg
Mevinphos	2	0	0	0	320	176.5	NA	NA	NA	ug/kg
Naled	2	0	0	0	2700	1485	NA	NA	NA	ug/kg
0,0,0-Trethyl Phosphorothioate	2	0	0	0	89	49	NA	NA	NA	ug/kg
Parathion, Ethyl	2	0	0	0	89	49	NA	NA	NA	ug/kg
Parathion, Methyl	2	0	0	0	89	49	NA	NA	NA	ug/kg
Phorate	2	0	0	0	89	49	NA	NA	NA	ug/kg
Ronnel	2	0	0	0	89	49	NA	NA	NA	ug/kg
Sulfotep	2	0	0	0	89	49	NA	NA	NA	ug/kg
Tetrachlorvinphos (Sutrophos)	2	0	0	0	320	176.5	NA	NA	NA	ug/kg
Tetrachlorvinphos (Rabon, Sur)	2	0	0	0	89	49	NA	NA	NA	ug/kg
Thionazin	2	0	0	0	89	49	NA	NA	NA	ug/kg
Tokuthion (Prothiofos)	2	0	0	0	89	49	NA	NA	NA	ug/kg
Toxaphene	2	0	0	0	1800	990	407,000	4,070	NA	ug/kg
Trichloronate	2	0	0	0	89	49	NA	NA	NA	ug/kg

SD = standard deviation
 NA = not applicable

Sensitivities were satisfactory as all reporting limits were less than corresponding RFCA Tier II action levels

Laboratory accuracy and precision were acceptable for all samples based on the verification/validation percentages given in Table 3. One field-duplicate sample was acquired to evaluate sampling precision. Sampling precision was acceptable because SOR results between the real and the duplicate samples were repeatable to quantities below one. Because all real sample results were less than action levels, the potential for cross-contamination of samples in the field was not considered further.

A total of four (4) surface soil samples were acquired from the IHSS 600-6 area for pesticides and herbicides and all results were non-detect. For those compounds with associated RFCA action levels, sum of ratios (SOR) calculations were performed, and no samples exceeded an SOR of one (1) relative to Tier II action levels. Several compounds captured by the analytical methods do not have corresponding RFCA action levels, thus a SOR was not performed using these compounds.

- Kaiser Hill (K-H), 1997a, V&V General Guidelines for Data Verification and Validation, DA-GR01-v1, December,
- K-H, 1997b, V&V Guidelines for Volatile Organics, DA-SS01-v1,
- K-H, 1997c, V&V Guidelines for Semivolatile Organics, DA-SS02-v1, and
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5

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

- DOE Order 414 1A, 1999, Quality Assurance
- EPA QA/G-9, 1998, Guidance for the Data Quality Assessment Process, Practical Methods for Data Analysis, and
- EPA QA/G-4, 1994, Guidance for the Data Quality Objective Process,

The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001a), 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

3.0 DATA QUALITY ASSESSMENT

This report will be submitted to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Administrative Record (AR) for permanent storage within 30 days of approval by Colorado Department of Public Health and Environmental (CDPHE) and/or U S Environmental Protection Agency (EPA)

Hardcopy records of the V&V results and individual (analytical) data packages are filed by report identification number (RIN) and are maintained by K-H Analytical Services Division (ASD), hardcopies will ultimately reside in the Federal Center (Lakewood, Colorado) Hardcopy records may also be viewed as Adobe® Acrobat (*.pdf) files on the RFPETS intranet, by RIN, under the Analytical Services link

Null = not validated
 I = QC data, package verification
 V = valid without qualification
 U11 = estimated at elevated level -- verification

Validation Qualifier Code	Number of Samples	Pesticides (SW-846 8081A)	Organophosphorus Organics (SW-846 8141A)	Chlorinated Herbicides (SW-846 8151A)
Null	9	4	-	5
I	10	-	10	-
V	58	38	-	20
U11	56	-	56	-
Total number of records	133	42	66	25
Percent validated (none rejected)	86%	90%	85%	80%

Summary of Validated Records IHSS for Group 600-6

Table 3

Data quality is acceptable based on the V&V percentages given in the following table

- 1 Implementation of industry-standard Chain-of-Custody protocols,
- 2 Compliance with sample preservation and hold times, and,
- 3 Compliance with documented and Site-approved sampling plans and procedures

Sample locations were biased, as planned, and are representative of the 600-6 area relative to the site-specific history. Other criteria that corroborate representativeness include

DOE, 1994, Historical Release Report, Seventh Quarterly Update, January 1 to March 31

DOE, 1999, DOE Order 414 1A, Quality Assurance

DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2001b, Industrial Area Sampling and Analysis Plan Addendum #1A-02-01, Rocky Flats Environmental Technology Site, Golden, Colorado, November

EPA QA/G-4, 1994, Guidance for the Data Quality Objective Process

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

Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5

4.0 REFERENCES

Best Available Copy

**IHSS GROUP 600-6
RAW DATA**

APPENDIX A

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PAC 600-1005 Former Pesticide Storage Area Analytical Results

CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	75-99-0	2,2-DICHLOROPROPANOIC ACID	43	7.5 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	93-76-5	2,4,5-TRICHLOROPHENOXYACETIC ACID	22	1.1 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	94-82-6	2,4-DB	87	2.7 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	94-75-7	2,4-DICHLOROPHENOXYACETIC ACID SALTS AND ESTERS	87	2.9 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	1918-00-9	DICAMBA	43	2 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	120-36-5	DICHLORPROP	87	2.4 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	94-74-6	MCPA	8700	220 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	93-65-2	MCPP	8700	230 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	88-85-7	PHENOL, 2-(1-METHYLPROPYL)-4,6-DINITRO-	13	5 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.5 SW-846 8151A	93-72-1	PROPRANOIC ACID 2-(2,4,5-TRICHLOROPHENOXY)-	22	1.4 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	75-99-0	2,2-DICHLOROPROPANOIC ACID	43	7.4 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	93-76-5	2,4,5-TRICHLOROPHENOXYACETIC ACID	21	1.1 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	94-82-6	2,4-DB	85	2.7 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	94-75-7	2,4-DICHLOROPHENOXYACETIC ACID SALTS AND ESTERS	85	2.9 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	1918-00-9	DICAMBA	43	1.9 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	120-36-5	DICHLORPROP	85	2.3 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	94-74-6	MCPA	8500	210 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	93-65-2	MCPP	8500	220 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	88-85-7	PHENOL, 2-(1-METHYLPROPYL)-4,6-DINITRO-	13	4.9 UG/KG	U	U
CD35-002	20R3470 172	748509 757	0	0.5 SW-846 8151A	93-72-1	PROPRANOIC ACID, 2-(2,4,5-TRICHLOROPHENOXY)-	21	1.4 UG/KG	U	U
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	72-54-8	4,4'-DDD	18	0.12 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	72-54-9	4,4' DDE	18	0.35 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	50-29-3	4,4' DDT	18	0.36 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	309-00-2	Aldrin	18	0.42 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	319-84-6	alpha-BHC	90	0.4 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	86-50-0	AZINPHOS-METHYL	18	3 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	319-85-7	beta BHC	18	0.37 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	35400-43 2	BOLSTAR (SULPROPOS)	18	7 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	12789-03-6	CHLORDANE (TECHNICAL)	18	2.7 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	2921-88-2	CHLORPYRIFOS	9	5.8 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	56-72-4	COUMAPHOS	18	3.3 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	319-86-8	delta-BHC	18	0.12 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	8064-48-3	DEMETON (O,S TOTAL)	9	2.3 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	333-41-5	DIAZINON	9	2.1 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	62-73-7	DICHLOROVOS	18	7.1 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	60-57 1	Dieldrin	18	0.59 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	60-51-5	DIMETHOATE	18	6.6 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	296-04-4	DISULFOTON	9	2 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	959-98-8	ENDOSULFAN I	18	0.41 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	33213-65 9	ENDOSULFAN II	18	0.72 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	1031-07-8	ENDOSULFAN SULFATE	18	0.32 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	72-20-8	ENDRIN	18	0.41 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	7421 93-4	ENDRIN ALDEHYDE	18	1.7 UG/KG	U	V
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	13194-48-4	ETHOROP	9	6 UG/KG	U	U11
CD35-001	20R3458 172	748516 757	0	0.25 SW-846 8081A	52-85 7	FAMPHUR	36	2.2 UG/KG	U	U11

PAC 600-1005 Former Pesticide Storage Area Analytical Results

CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	115-90-2	FENSLUPROTHION	33	4.2	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	55-38-9	FENTHION	9	5.8	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	58-89-9	gamma-BHC [Lindane]	18	0.76	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	76-44-8	Hepachlor	18	0.51	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	1024-57.3	Hepachlor spore	7.3	0.39	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	121-75.5	MALATHION	22	5.1	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	150-50.5	MERPHOS	9	1.8	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	72-43-5	Methoxychlor	3.6	0.18	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	7786-34.7	MEVINPHOS	11	9	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	300-76.5	NALED	270	3.3	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	126-66-1	O,O-TRIETHYL PHOSPHOROTHIOATE	9	5.2	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	56-38-2	PARATHION, ETHYL	9	5.3	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	298-00-0	PARATHION, METHYL	9	6.3	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	298-02.2	PHORATE	9	5.1	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	299-84.3	RONNEL	9	5.3	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	3689-24.5	SULFOTEP	33	2.4	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	22248-79.9	TETRACHLOROVINPHOS (STIROPHOS)	9	4.5	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	961 11.5	TETRACHLORVINPHOS (RABON STIR	9	5.5	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	297-97-2	THIONAZIN	9	5.5	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	34643-46-4	TOKUTHION (PROTHIOFOS)	9	3.2	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8081A	8001-35-2	Toluophene	180	11	UG/KG	U	V
CD35-001	2083458 172	748516 757	0 0.25	SW-846 8141A	327-98-0	TRICHLORONATE	9	4.5	UG/KG	U	U1
CD35-001	2083458 172	748516 757	0 0.21	SW-846 8081A	72-54-8	4,4-DDD	18	3.1	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	72-55-9	4,4' DDE	18	3.4	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	50-29-3	4,4'-DDT	18	3.5	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	309-00-2	Aldrin	18	4.2	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	319-84.6	alpha-BHC	890	4	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	86-50-0	AZINPHOS-METHYL	18	30	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	319-85.7	beta-BHC	180	69	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	35400-43.2	BOLSTAR (SULPROFOS)	180	27	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	12789-03-6	CHLORDANE (TECHNICAL)	180	57	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	2921-88-2	CHLORPYRIFOS	89	33	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	56-72.4	COLIMA PHOS	180	33	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	319-86.8	delta-BHC	18	1.2	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	8065-48-3	DEMETON (O,S TOTAL)	89	22	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	333-41.5	DIAZINON	180	20	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	62 73-7	DICHLOROVOS	180	72	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	60-57.1	Dieldrin	180	5.8	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	60-51.5	DIMETHOATE	180	65	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8141A	298-04.4	DISULFOTON	89	19	UG/KG	U	U1
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	959-98.8	ENDOSULFAN I	18	4.1	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	33213-65.9	ENDOSULFAN II	18	7.1	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	1031-07.8	ENDOSULFAN SULFATE	18	1.1	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	72 20-8	ENDRIN	18	4.1	UG/KG	U	V
CD35-002	2083470 172	748509 757	0 0.21	SW-846 8081A	7421-93.4	ENDRIN ALDEHYDE	18	16	UG/KG	U	V

PAC 600-1005 Former Pesticide Storage Area Analytical Results

CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	13194-48-4	ETHOROP	89	59 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	52-83-7	PAMPUR	350	21 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	115-90-2	FENSULFOTHION	320	42 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	55-38-9	FENTHION	89	57 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	58-89-9	gamma-BHC [Lindane]	18	7.5 UG/KG	U	V
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	76-44-8	Heptachlor	18	5 UG/KG	U	V
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	1024-57-3	Heptachlor epoxide	72	3.9 UG/KG	U	V
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	121-75 5	MALATHION	210	50 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	150-50-5	MERPHOS	89	18 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	72-43-5	Methoxychlor	35	1 K UG/KG	U	V
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	7786-34-7	MEVINPHOS	320	89 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	300-76-5	NALED	2700	12 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	126-68-1	O,O-DIETHYL PHOSPHOROTHIOATE	89	51 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	56-38-2	PARATHION ETHYL	89	52 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	298-00-0	PARATHION METHYL	89	62 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	298-02 2	PHORATE	89	52 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	299-84-3	RONNEL	89	50 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	3689-24-5	SULFOTEP	89	52 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	22248-79-9	TETRACHLOROVINPHOS (STIROPHOS)	320	24 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	961-11-5	TETRACHLOROVINPHOS (RABON STIR	89	44 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	297-97-2	THIONAZIN	89	55 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	34643-46-4	TOKUTHION (PROTOTHIOFOS)	89	31 UG/KG	U	U11
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8081A	8001-35-2	Toxaphene	1800	110 UG/KG	U	V
CDIS-002	2083470 172	748509 757	0 0.21	SW-846 8141A	327 98-0	TRICHLORONATE	89	44 UG/KG	U	U11

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Characterization Data Summary
IHSS Group 700-12

Appendix A - IHSS Group 700-12 - Raw Data

Appendix

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Table of Contents

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
DOQ	Data Quality Objective
EPA	U S Environmental Protection Agency
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFA Standard Operating Procedure
HPGe	High-Purity Germanium
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company L L C
MDL	method detection limit
NA	not applicable
ND	non-detect
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
pC/g	picocurie per gram
RCRA	Resource Conservation and Recovery Act
RFA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RIN	report identification number
RL	reporting limit
SAP	Sampling and Analysis Plan
V&V	verification and validation

Characterization of IHSS Group 700-12 consisted of historical knowledge (DOE 1992) and additional sampling at locations with specifications as described in IASAP Addendum #IA-02-01 (DOE 2001b). The sampling specifications for the characterization samples collected are listed in Table 1. The location of these samples and analytical results are shown on Figure 2. There were no sampling location deviations from the IASAP Addendum. Analytical results greater than background mean plus two standard deviations are presented in Table 2. A summary of analytical results is presented in Table 3. Raw data are presented in Appendix A. Results indicate that all contaminant concentrations are less than the RfCA Tier II action levels (ALs).

2.0 SITE CHARACTERIZATION

The location of IHSS Group 700-12 and PAC 700-1106 are shown on Figure 1.

- PAC 700-1106 – Process Waste Spill – Portal 1

IHSS Group 700-12 consists of the following Potential Area of Concern (PAC)

This data summary report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 700-12 at the Rocky Flats Environmental Technology Site (RFETS or Site) in Golden, Colorado. Characterization activities were planned and executed in accordance with the Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001a) and IASAP Addendum #IA-02-01 (DOE 2001b).

1.0 INTRODUCTION

Table 1
IHSS Group 700-12 – Characterization Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Lab Method
700-12	PAC 700-1106 – Process Waste Spill – Portal 1	CG40-A0001	2084109 79	749467 01	surface soil	A	radionuclides	HPGe
		CG40-A0002	2084104 48	749474 74	surface soil	A	radionuclides	HPGe

Table 2

IHSS Group 700-12 – Characterization Data Greater Than Background Mean Plus Two Standard Deviations

IHSS Group	IHSS/PAC/UBC Site	Sampling Location	Easting	Northing	Media	Beginning Depth (feet)	Ending Depth (feet)	Analyte	Result	Background Concentration +2SD	Unit
700-12	PAC 700-1106 – Process Waste Spill – Portal 1	CG40-A001	2084109 76	749467 02	surface soil	0	0 17	Uranium-235	0 11	0 09	pCi/g

SD = standard deviation

235

Table 3
IHSS 700-12 - Summary of Analytical Results

Analyte	Total Number of Samples Collected	Number of Samples Above Detection Limit	Detection Frequency (%)	Maximum Concentration	Average Concentration	Tier I Action Level	Tier II Action Level	Background Concentration + 2SD	Unit
Americium-241	2	0	0	0	0	215	38	0.02	pCi/g
Plutonium-239/240	2	0	0	0	0	1429	252	0.07	pCi/g
Uranium-234	2	0	0	1.46	1.22	1738	307	2.30	pCi/g
Uranium-235	2	0	0	0.11	0.11	135	24	0.09	pCi/g
Uranium-238	2	0	0	1.46	1.22	586	103	2.00	pCi/g

3 0 DATA QUALITY ASSESSMENT

The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001a), 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, 1994, 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
- Kaiser Hill (K-H), 1997, V&V General Guidelines for Data Verification and Validation, DA-GR01-v1, December, and
 - Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5

Only two samples were acquired from the 700-12 area, and both analyses were for gamma spectroscopy. Neither of the two samples (results) was validated, however, several gamma spectroscopy samples prior to and following the 700-12 samples were validated. Specifically, the samples of interest are 02E0025-001 and -002. Thirty-eight (38) gamma spectroscopy samples have been validated to date, including 02E0009-013 and 02E0053-17, which bracket the analysis time of the two samples in question. Consequently, the two samples collected for 700-12 may be considered valid without qualification through inference from the V&V process.

Laboratory accuracy and precision were acceptable based on the discussion above. Sampling precision was acceptable because results, from both samples, were repeatable to quantities well below Rocky Flats Cleanup Agreement (RFCA) Tier II Action Levels. Sensitivities were satisfactory as minimum detectable activities (MDAs or RLS) were less than 1/2 of all respective RFCA Tier II Action Levels. Sample locations were biased, as planned, and are representative relative to the site-specific history. Other criteria that corroborate representativeness include

- Implementation of industry-standard chain-of-custody protocols,

Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5
 GR01-v1, December
 Kaiser-Hill (K-H), 1997, General Guidelines for Data Verification and Validation, DA-GR01-v1, December
 Methods for Data Analysis
 EPA QA/G-9, 1998, Guidance for the Data Quality Assessment Process, Practical
 EPA QA/G-4, 1994, Guidance for the Data Quality Objective Process
 Flats Environmental Technology Site, Golden, Colorado, November
 DOE, 2001b, Industrial Area Sampling and Analysis Plan Addendum #IA-02-01, Rocky
 Technology Site, Golden, Colorado, June
 DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental
 DOE, 1999, DOE Order 414 IA, Quality Assurance
 Golden, Colorado, June
 DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant,

4.0 REFERENCES

Hardcopy records of the V&V results and individual (analytical) data packages are filed by report identification number (RIN) and are maintained by Kaiser-Hill (K-H) Analytical Services Division (ASD), hardcopies will ultimately reside in the Federal Center (Lakewood, Colorado) Hardcopy records may also be viewed as Adobe® Acrobat (* pdf) files on the RFFETS intranet under the Analytical Services link
 This report will be submitted to the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Administrative Record (AR) for permanent storage within 30 days of approval by Colorado Department of Public Health and Environmental (CDPHE) and/or U S Environmental Protection Agency (EPA)

- Compliance with documented and Site-approved sampling plans and procedures, including the gamma spectroscopy method
- Compliance with sample preservation and hold times, and,

Best Available Copy

**IHSS GROUP 700-12
RAW DATA**

APPENDIX A

Location	SBD (ft bgs)	SEP (ft bgs)	PCAS NO.	ANALYTE	RESULTS	UNITS	Q	M	RR	Comments
CG40-A001	0	0	167 14596-10-2	Americium-241	0	pc/g	J		4	Estimated from Am-241 (8 08 1 ratio)
CG40-A001	0	0	167 10-12-8	Plutonium-239/240	0	pc/g	J			
CG40-A001	0	0	167 11-08-5	Uranium-234	1 46	pc/g	J			Estimated from U-238 (1 1 ratio)
CG40-A001	0	0	167 15117-96-1	Uranium-235	0 112	pc/g	J		1	
CG40-A001	0	0	167 7440-61-1	Uranium-238	1 46	pc/g	J		8	
CG40-A002	0	0	25 14596-10-2	Americium-241	0	pc/g	J		4	
CG40-A002	0	0	25 10-12-8	Plutonium-239/240	0	pc/g	J			Estimated from Am-241 (8 08 1 ratio)
CG40-A002	0	0	25 11-08-5	Uranium-234	0 976	pc/g	J			Estimated from U-238 (1 1 ratio)
CG40-A002	0	0	25 15117-96-1	Uranium-235	0	pc/g	J		1	
CG40-A002	0	0	25 7440-61-1	Uranium-238	0 976	pc/g	J		8	

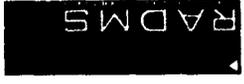
SBD - Sample begin depth
 SED - Sample end depth
 ft bgs - feet below ground surface
 RL - Reporting limit
 Q - Laboratory Qualifier Code
 V - Validation Qualifier Code
 J - Estimated

September 2002

700-12da.spr



Prepared for

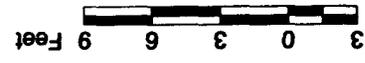


Prepared by

Rocky Flats Environmental Technology Site
U S Department of Energy

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

Scale = 1 100




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for the accuracy, completeness or usefulness of any
information apparatus product or process disclosed
or represents that its use would
not infringe privately owned rights

KEY

-  PAC
-  Building
-  Paved area
-  Dirt road
-  Stream, ditch, or other drainage
-  Surface Soil Sampling Location

Disclaimer

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Data Summary
IHSS 700-12, PAC 700-1106
Figure 2

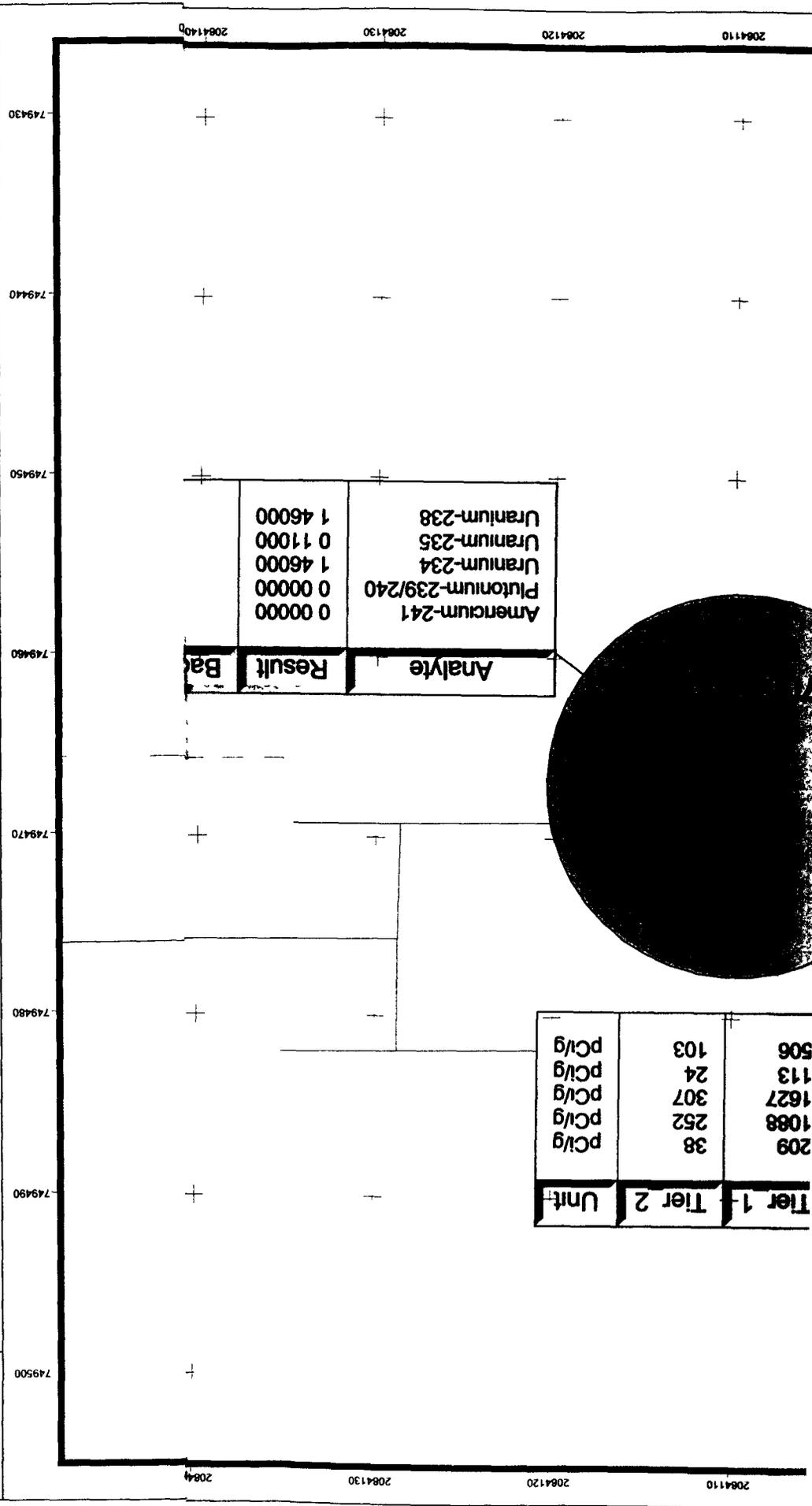


Table 3
IHSS 700-12 - Summary of Analytical Results

Analyte	Total Number of Samples Collected	Number of Samples Above Detection Limit	Detection Frequency (%)	Maximum Concentration	Average Concentration	Tier I Action Level	Tier II Action Level	Background Concentration + 2SD	Unit
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Uranium-235	2	0	0	0.11	0.11	135	24	0.09	pCi/g
Uranium-238	2	0	0	1.46	1.22	586	103	2.00	pCi/g

Only two samples were acquired from the 700-12 area, and both analyses were for gamma spectroscopy. Neither of the two samples (results) was validated, however, several gamma spectroscopy samples prior to and following the 700-12 samples were validated. Specifically, the samples of interest are 02E0025-001 and -002. Thirty-eight (38) gamma spectroscopy samples have been validated to date, including 02E0009-013 and 02E0053-17, which bracket the analysis time of the two samples in question. Consequently, the two samples collected for 700-12 may be considered valid without qualification through inference from the V&V process.

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 - EPA QA/G-4, 1994, Guidance for the Data Quality Objective Process,

The Data Quality Objectives (DQOs) for this project, as defined in the IASAP (DOE 2001a), 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:

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 DOE, 1992, Historical Release Report for the Rocky Flats Plant, Rocky Flats Plant,
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4.0 REFERENCES

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- Compliance with sample preservation and hold times, and,
- Compliance with documented and Site-approved sampling plans and procedures, including the gamma spectroscopy method

**IHSS GROUP 700-12
RAW DATA**

APPENDIX A

245/245

Location	SBD (ft bgs)	SEI (ft bgs)	CGAS No.	Am-241	Result	Units	Q/V/R	Comments
CG40-A001	0	0	167 14596-10-2	Americium-241	0	pcI/g	4	Estimated from Am-241 (8 08 1 ratio)
CG40-A001	0	0	167 10-12-8	Plutonium-239/240	0	pcI/g	J	
CG40-A001	0	0	167 11-08-5	Uranium-234	1.46	pcI/g	J	Estimated from U-238 (1 1 ratio)
CG40-A001	0	0	167 15117-96-1	Uranium-235	0.112	pcI/g	1	
CG40-A001	0	0	167 7440-61-1	Uranium-238	1.46	pcI/g	8	
CG40-A002	0	0	25 14596-10-2	Americium-241	0	pcI/g	4	
CG40-A002	0	0	25 10-12-8	Plutonium-239/240	0	pcI/g	J	Estimated from Am-241 (8 08 1 ratio)
CG40-A002	0	0	25 11-08-5	Uranium-234	0.976	pcI/g	J	
CG40-A002	0	0	25 15117-96-1	Uranium-235	0	pcI/g	1	Estimated from U-238 (1 1 ratio)
CG40-A002	0	0	25 7440-61-1	Uranium-238	0.976	pcI/g	8	

SBD - Sample begin depth
 SED - Sample end depth
 ft bgs - feet below ground surface
 RL - Reporting limit
 Q - Laboratory Qualifier Code
 V - Validation Qualifier Code
 J - Estimated

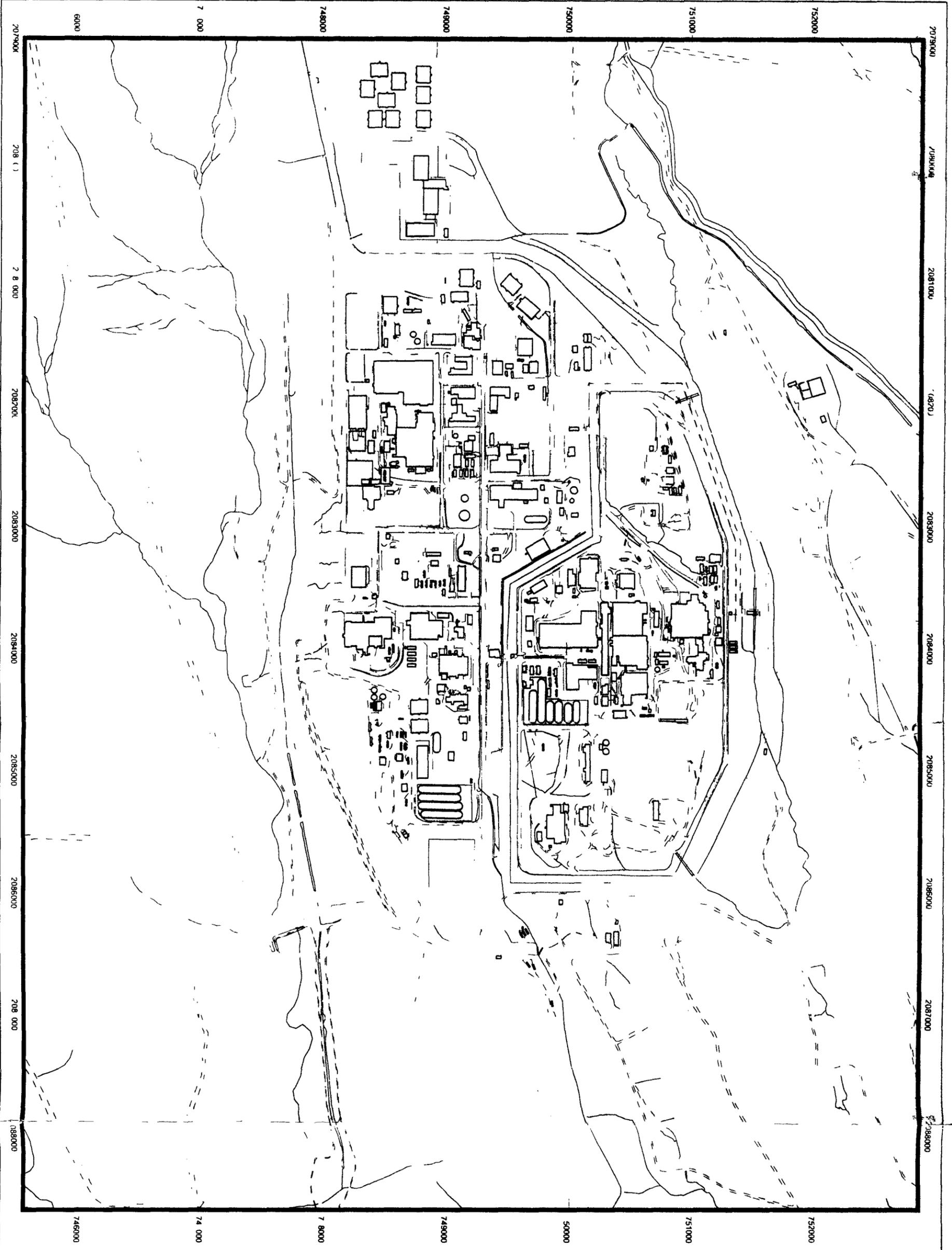
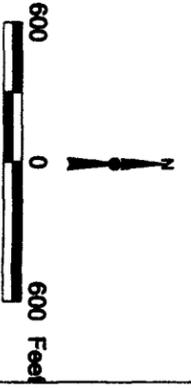


Figure 1
Location of
IHSS Group 400 10

KEY

-  IHSS Group 400-10
-  Building
-  Stream ditch or other drainage
-  Paved Area
-  Dirt road

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State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:



Prepared for:



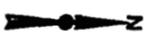
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Date: August 2002

Figure 2
IHSS Group 400-10
(400-120 2, 400-161
and 400-807)

KEY

-  FY 2002 IHSS location
-  FY 2002 PAC location
-  FY 2002 UBC location
-  IHSS Groups
-  Building/structure
-  Paved area
-  Dirt road
-  Stream ditch or other drainage feature
-  Existing soil sampling locations (50-ft buffer)
-  Both subsurface and surface soil
-  Subsurface soil
-  Surface soil



Scale = 1 845



State Plane Coordinate Projection
 Colorado Central Zone
 Datum NAD 27

U S Department of Energy
 Rocky Flats Environmental Technology Site

Prepared by:

Prepared for:



Notification #02-02

January 2002

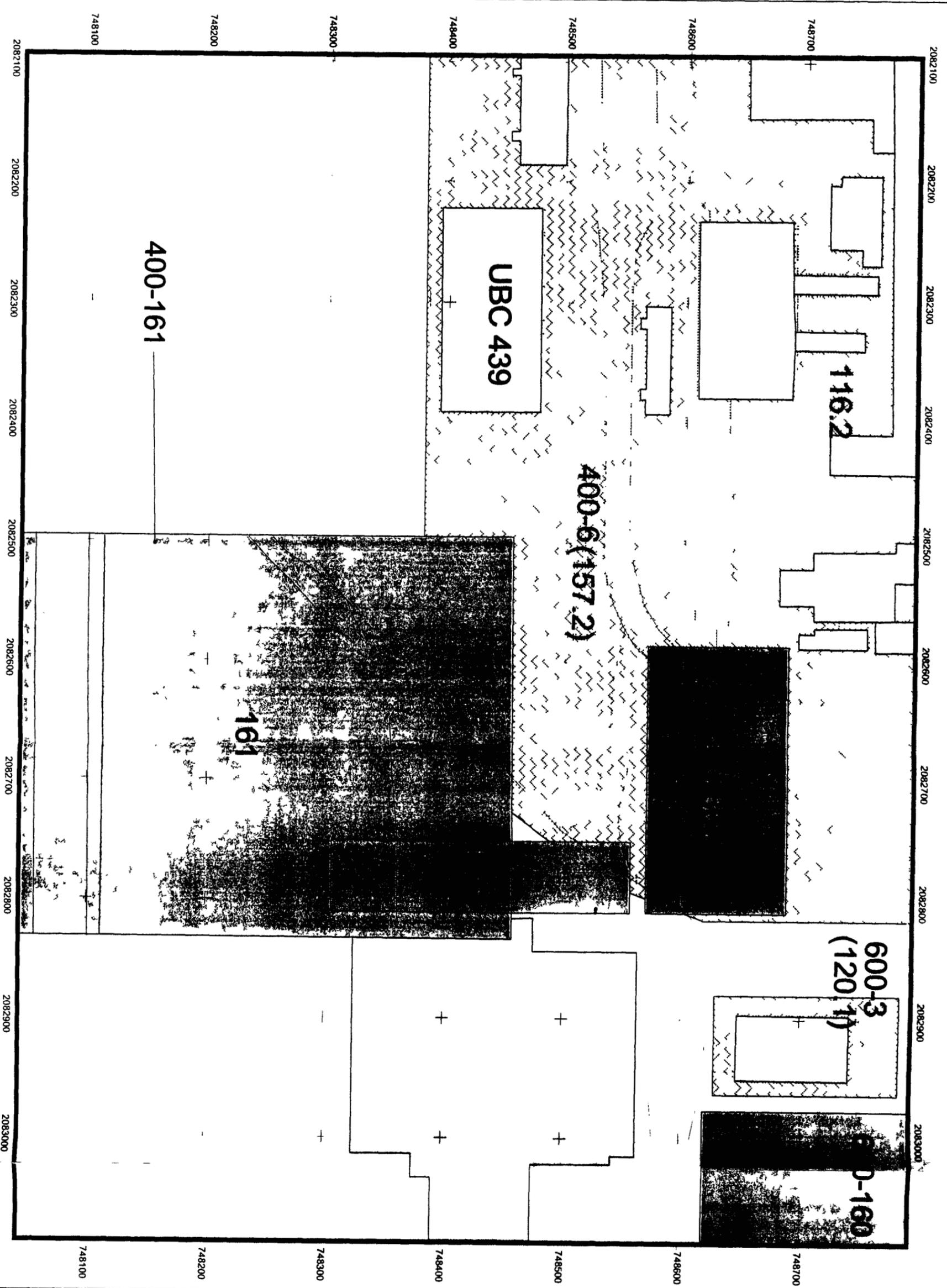


Figure 3
Surface Soil Results
Greater Than Background
Plus Two Standard Deviations or
Method Detection Limit
for IHSS Group 400-10

KEY

-  IHSS
-  PAC
-  Building
-  Streams
-  Paved Areas
-  Dirt Road
-  Fence
-  Surface Soil Sampling Location

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 Colorado Central Zone
 Datum NAD 27

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

Prepared by:



Prepared for:



group400-10spe.spr
 September 2002

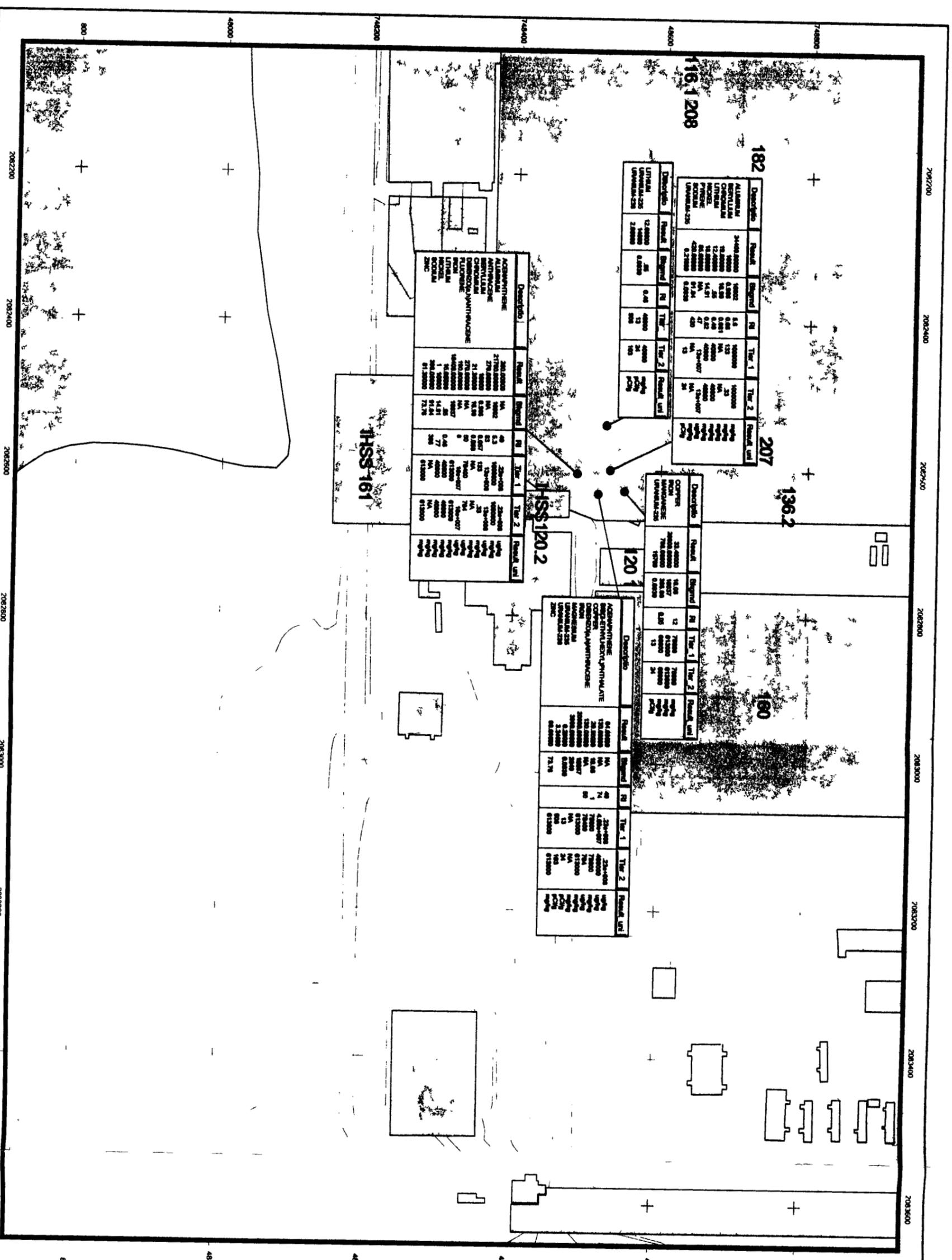
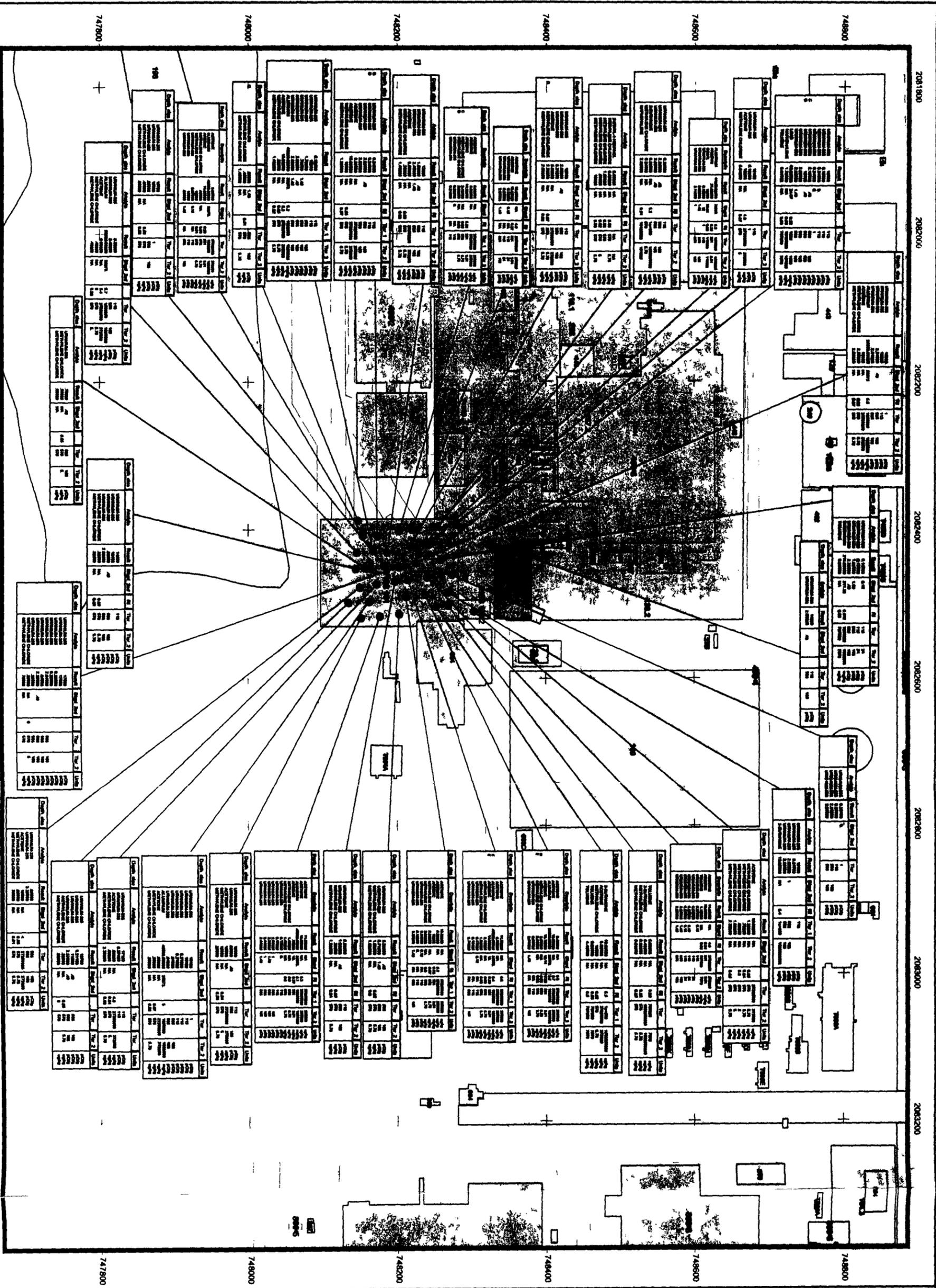
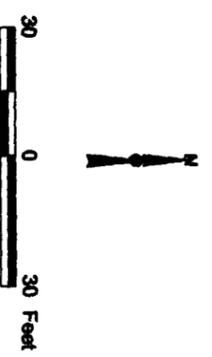


Figure 4
Subsurface Soil Sampling
Results Greater Than Background
Plus Two Standard Deviations
or Method Detection Limits
for IA Group 400-10



- KEY**
- IHSS
 - PAC
 - Building
 - Streams
 - Paved Areas
 - Fences
 - Subsurface Soil Sampling Location

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Scale = 1:500
 State Plane Coordinate Projection
 Colorado Central Zone
 Datum NAD 27

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

Prepared by
RADMS

Prepared for
KAISER-HILL COMPANY

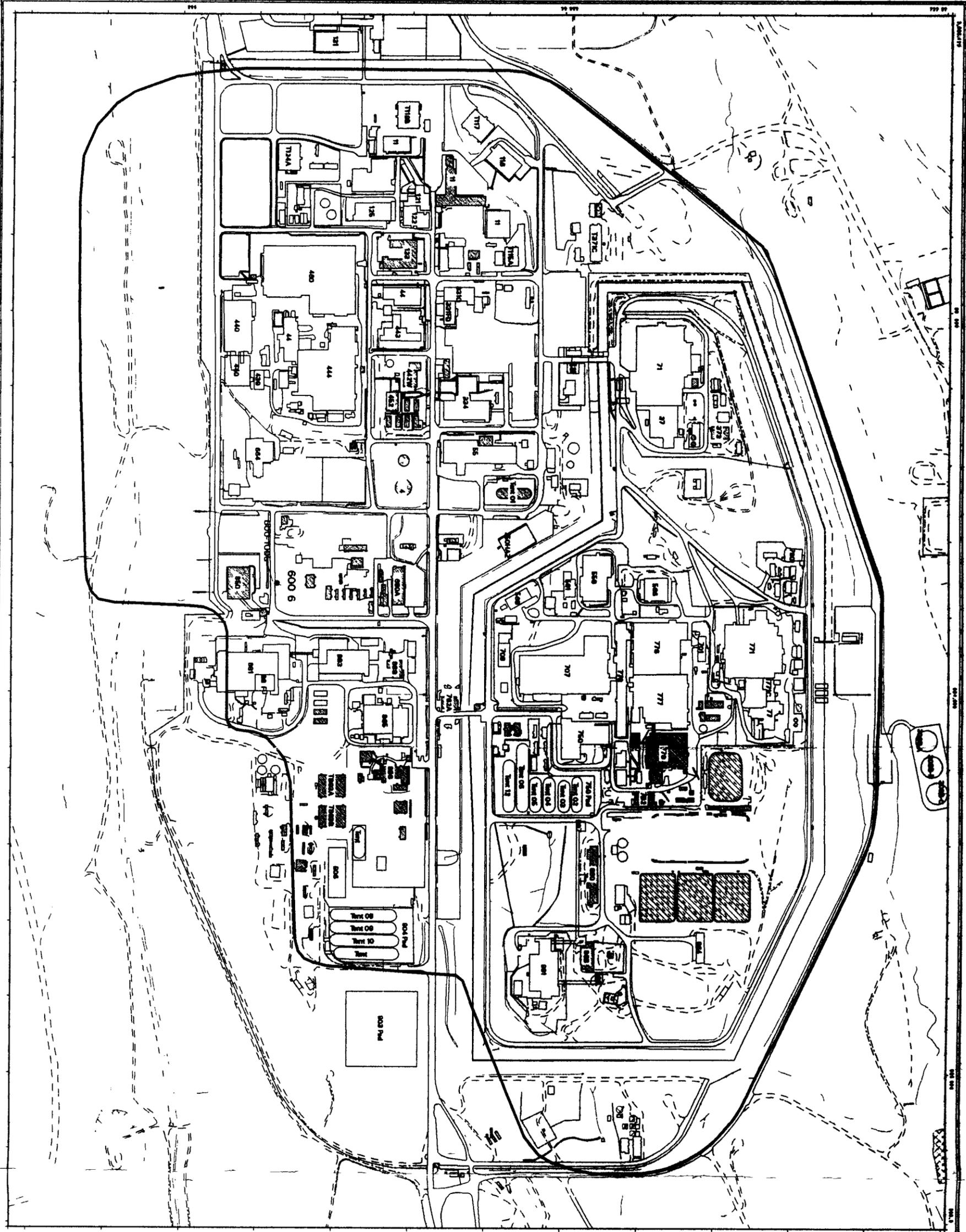
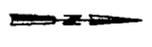


Figure 1
IA Group Location Map

EXPLANATION
 ■ 600-6
 ■ HHS Grouping

- Standard Map Features**
- Building and other structures
 - Detached buildings
 - ▨ Solar Exposure Panels (SEP's)
 - Lakes and ponds
 - Systems, ditches, or other drainage features
 - Fences and other barriers
 - Paved roads
 - Dirt roads
 - N Industrial Area Operable Unit Boundary

NOTE: Standard map features:
 1. Building and other structures: Includes buildings, sheds, and other structures.
 2. Detached buildings: Buildings that are not attached to other structures.
 3. Solar Exposure Panels (SEP's): Panels used for solar energy collection.
 4. Lakes and ponds: Bodies of water.
 5. Systems, ditches, or other drainage features: Features used for water management.
 6. Fences and other barriers: Structures used for boundary definition.
 7. Paved roads: Roads with a hard surface.
 8. Dirt roads: Roads with a soft surface.
 9. Industrial Area Operable Unit Boundary: The boundary of the industrial area.



Scale 1:320
 1 inch represents approximately 528 feet

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DynCorp

Prepared for
Kaiser Hill

Date: 08-28-2002
 September 24, 2002

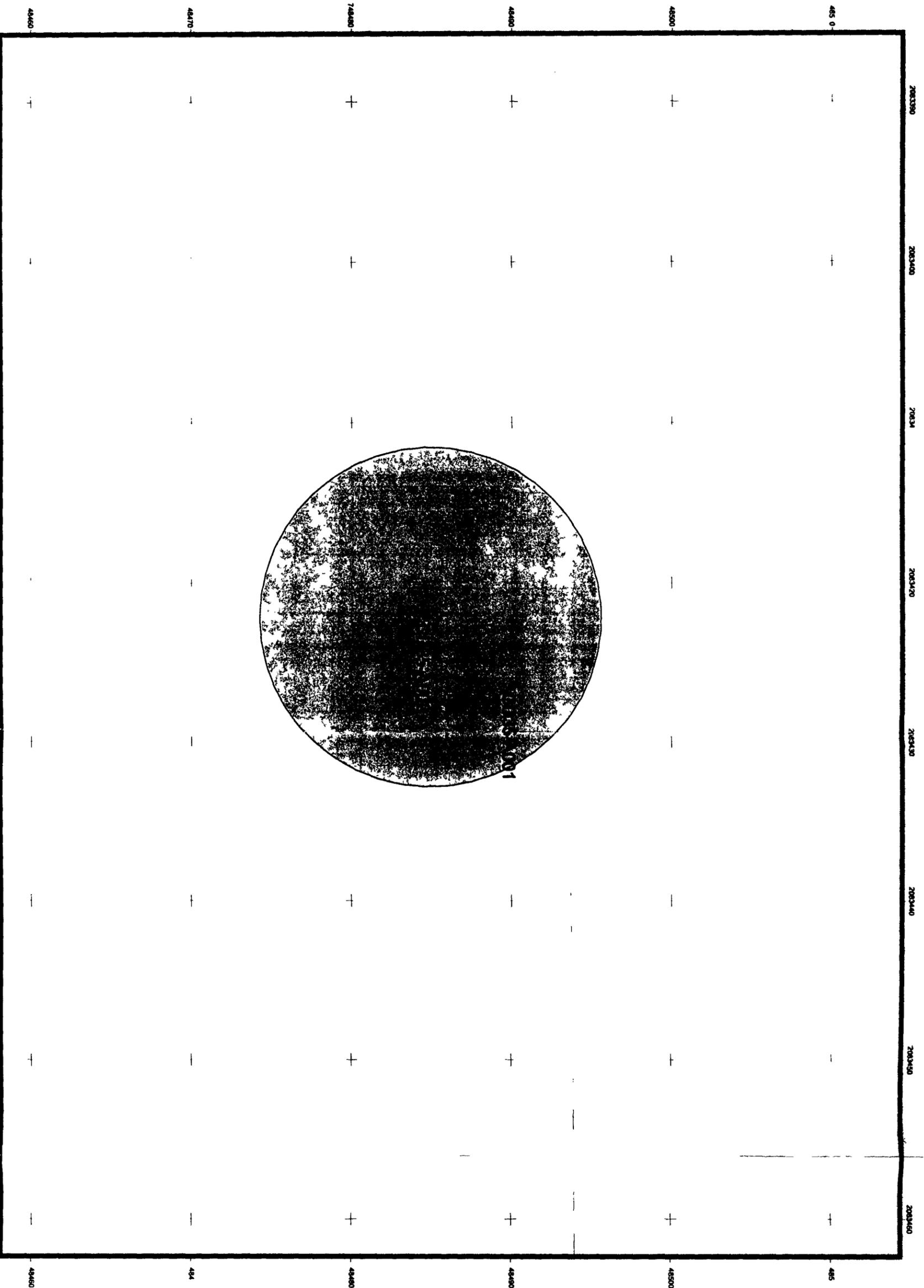


Figure 2
Sampling Locations
IHSS Group 600-6

KEY

-  PAC
-  Paved area
-  Dirt road
-  Stream ditch or other drainage
-  Sampling Location

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2 0 2 4 6 8 Feet
 Scale = 1:75

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Analyte	Result	Background	Tier 1	Tier 2	Unit
Americium-241	0.00000	0.02000	209	38	pCi/g
Plutonium-239/240	0.00000	0.07000	1088	252	pCi/g
Uranium-234	0.98000	2.30000	1627	307	pCi/g
Uranium-235	0.00000	0.09000	113	24	pCi/g
Uranium-238	0.98000	2.00000	506	103	pCi/g

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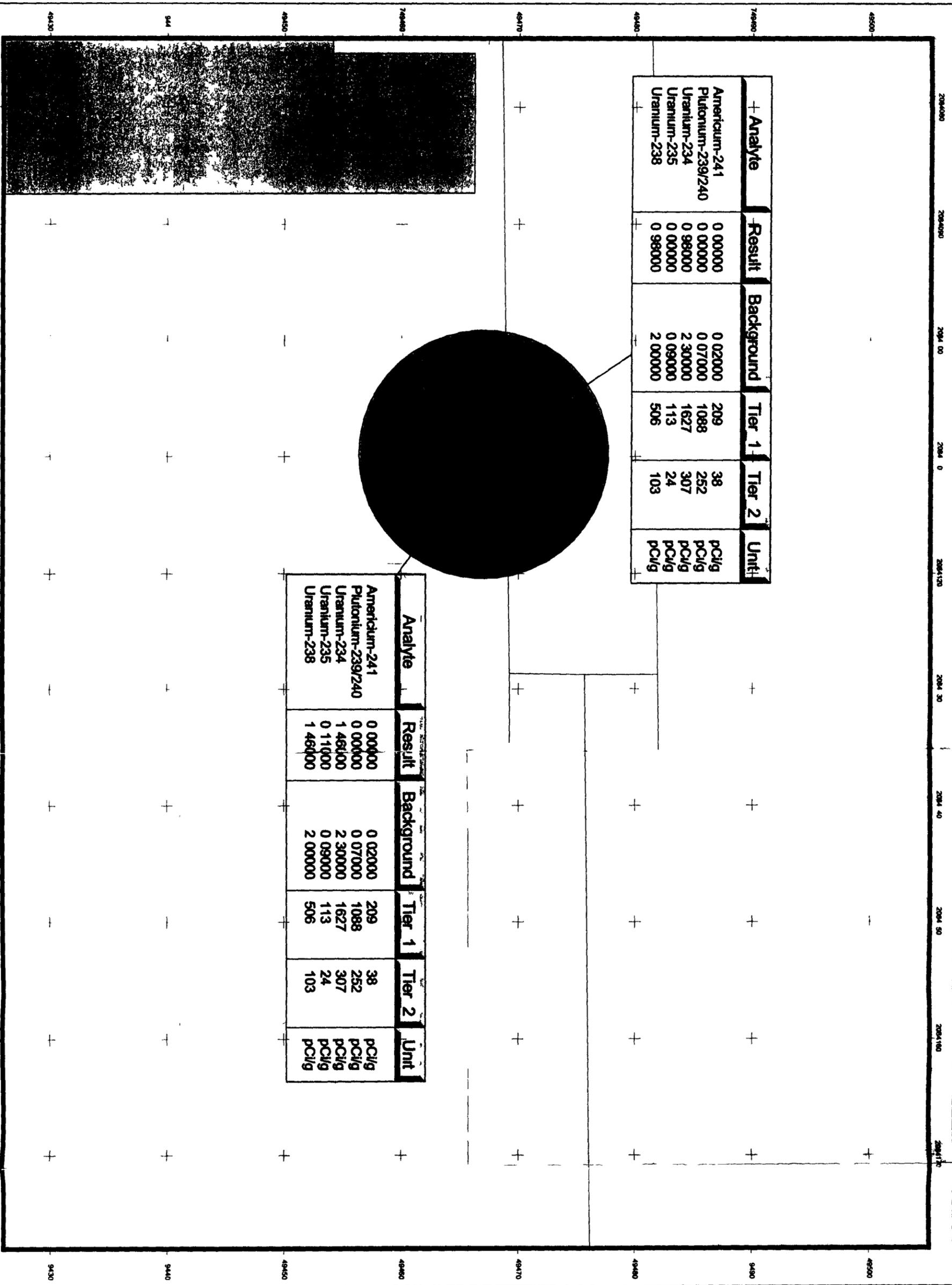
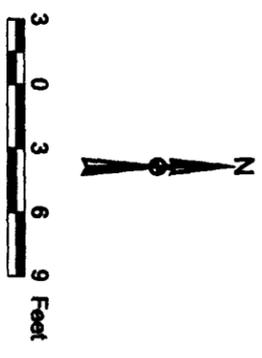


Figure 2
IHSS 700-12 PAC 700-1106
Data Summary

- KEY**
- PAC
 - Building
 - Paved area
 - Dirt road
 - Stream ditch or other drainage
 - Surface Soil Sampling Location

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