Industrial Area
Sampling and Analysis Plan
FY04 Addendum #IA-04-10
IHSS Group 700-11
(Bowman's Pond and Steam Condensate Tanks)

March 2004

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Approval received from the Colorado Department of Public Health and Environment

March 26, 2004.

Approval letter contained in the Administrative Record.

March 2004

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ACRONYMS

AL	action level
CDPHE	Colorado Department of Public Health and Environment
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
HPGe	high-purity germanium
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
ug/kg	micrograms per kilogram
MDL	method detection limit
mg/kg	milligrams per kilogram
N/A	not applicable
PAC	Potential Area of Concern
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
RFCA	Rocky Flats Cleanup Agreement
RL	reporting limit
SAP	Sampling and Analysis Plan
SVOC	semivolatile organic compound
UBC	Under Building Contamination
VOC	volatile organic compound
WRW	wildlife refuge worker

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-04-10 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSSs, Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites proposed for characterization during Fiscal Year (FY) 04. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS Group 700-11. IHSS Group 700-11 consists of Bowman's Pond (PAC 700-1108) and the Steam Condensate Tanks (IHSS 139.1[N][a]). The location of IHSS Group 700-11 is shown on Figure 1.

2.0 EXISTING CHARACTERIZATION INFORMATION

Bowman's Pond (PAC 700-1108) consists of a manmade depression approximately 3 to 4 feet deep with an areal extent of approximately 28 by 33 feet. The pond was constructed to contain stormwater from building foundation drains and storm drains in the 700s Area. The Steam Condensate Tanks (IHSS 139.1[N][a]) have been removed and the concrete slab that supported the former tanks remains in place. Surface water drainage in the area generally flows from the southwest to the northeast.

Existing concentrations and activities in sediment and soil greater than the method detection limits (MDLs)/reporting limits (RLs) or background means plus two standard deviations are presented on Figures 2 and 3, respectively. Existing information and data for this IHSS Group are available in Appendix C of the IASAP (DOE 2001), the Historical Release Reports (HRRs) (DOE 1992, 1999a), the Closeout Report for the Site Characterization of Bowmans Pond (PAC 700-1108) and Steam Condensate Holding Tanks (IHSS 139.1N) (DOE 1999b), and the Assessment of Known, Suspect, and Potential Environmental Releases of Polychlorinated Biphenyls (PCBs) (DOE 1991). Table 1 presents the PCOCs and proposed sampling methodologies.

Table 1
IHSS Group 700-11 PCOCs

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Method
700-11	PAC 700-1108 – Bowman's Pond IHSS 139.1(N)(a) -Steam Condensate Holding Tanks (Note - IHSS 139.1(N)(b) - Hydroxide Tank addressed in IHSS Group 700-4 Closeout Report)	Metals PCBs Radionuclides SVOCs VOCs	Surface and subsurface soil	HRRs (DOE 1992, 1999a), IASAP (DOE 2001), Closeout Report for the Site Characterization of Bowmans Pond and Steam Condensate Holding Tanks (DOE 1999b), and Process knowledge	Statistical grid Biased sampling

Previous data for IHSS Group 700-11 indicate detections of PCBs and semivolatile organic compounds (SVOCs) greater than Rocky Flats Cleanup Agreement (RFCA) wildlife refuge worker (WRW) action levels (ALs) (DOE et al. 2003). All of the PCOCs listed in Table 1 were reported above MDLs/RLs or corresponding background means plus two standard deviations in sediment and soil (Figure 2).

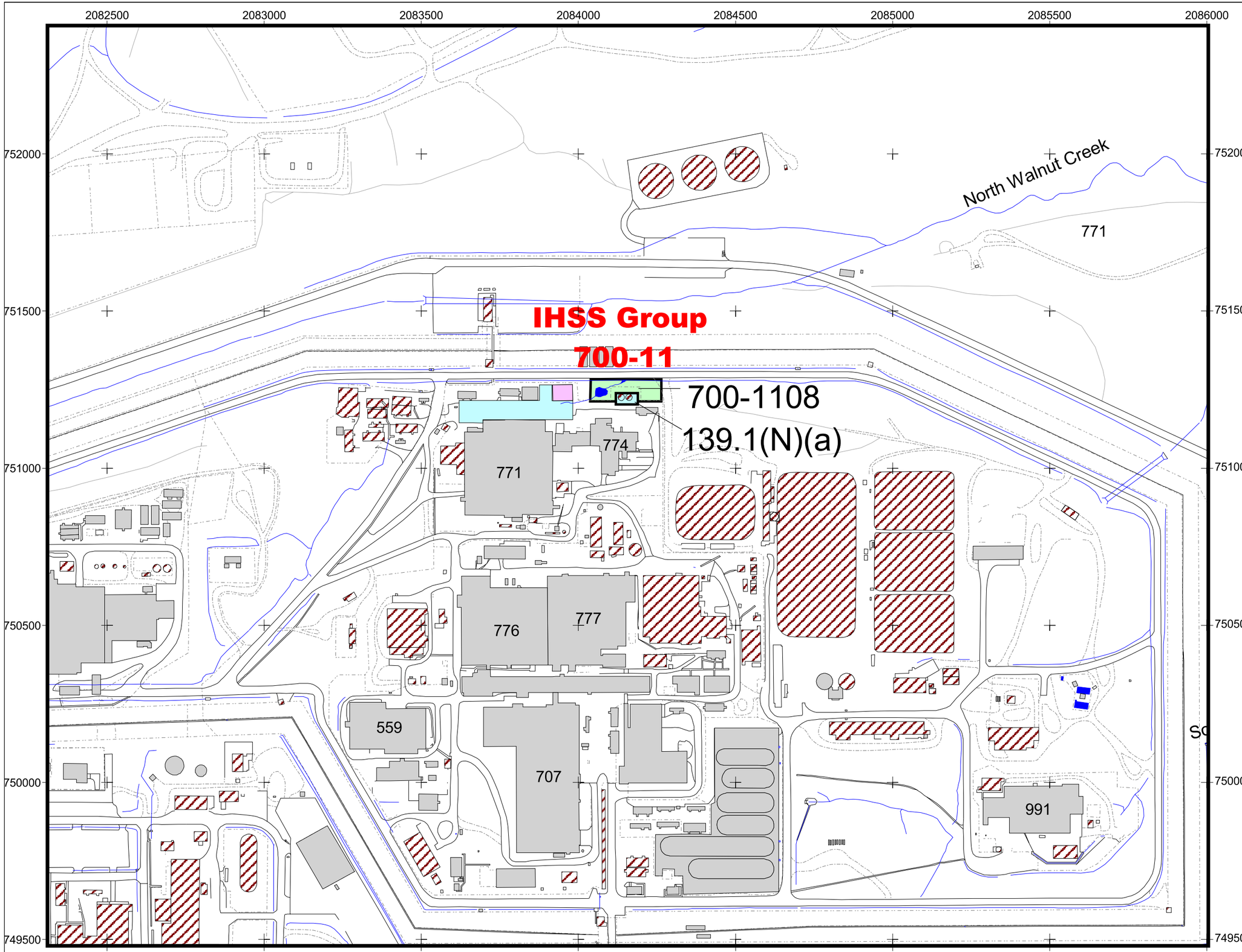

Figure 1

IHSS Group 700-11 (IHSS 139.1 [N][a] and PAC 700-1108) Location

KEY

- IHSS 139.1 (N)(a) (Hydroxide Tank, KOH, and NaOH condensate)
- PAC 700-1108 (Bowman's Pond)
- Demolished structure
- Structure
- IHSS 150.1
- UBC 770
- Lakes and ponds
- Paved area
- Dirt road
- Stream, ditch, or other drainage

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N

100 0 100 200 Feet

Scale = 1:4,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

RADMS

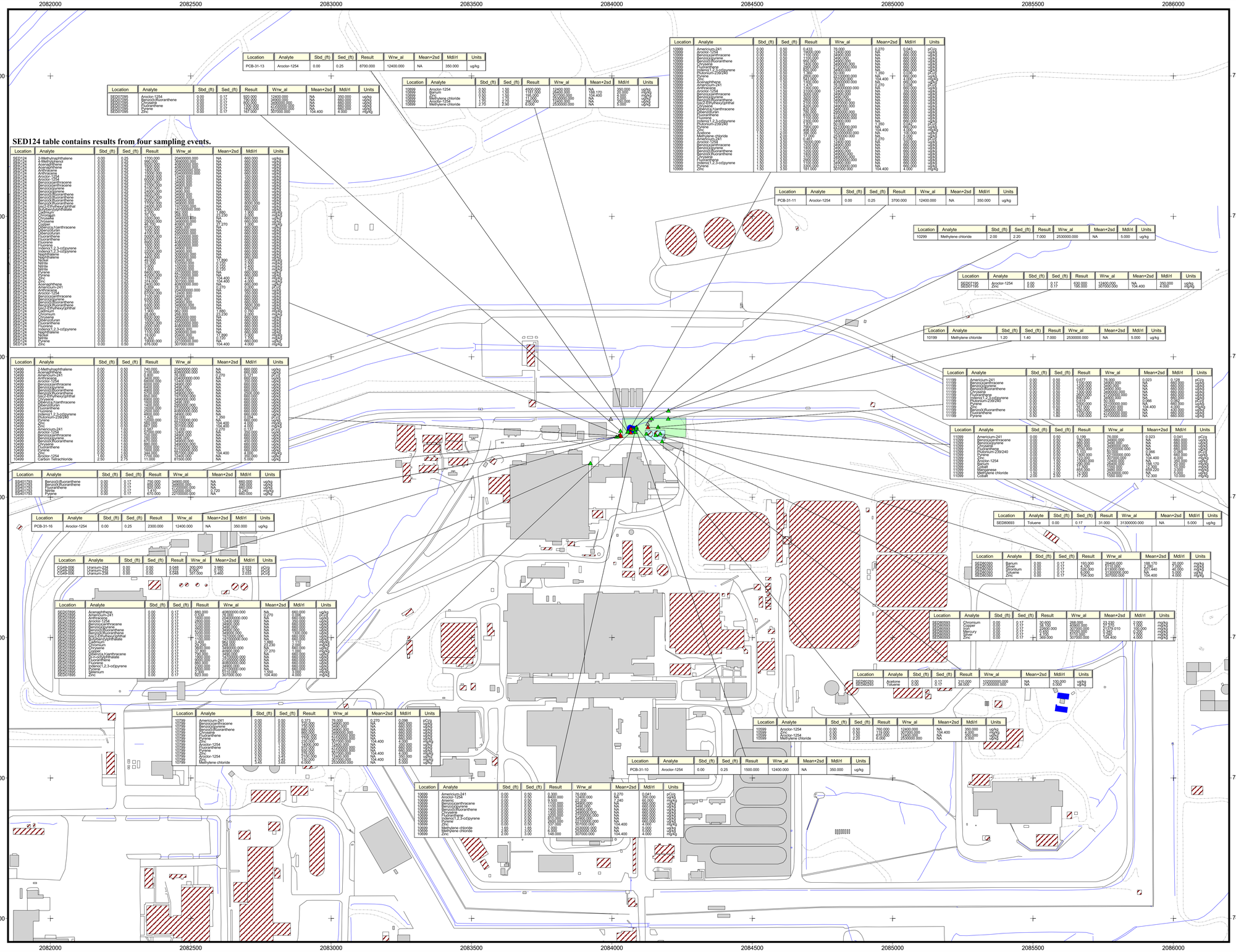
Prepared for:

KAISER•HILL COMPANY

700-11char_gpp_12_03.apr March 2004

Figure 2

IHSS Group 700-11 Existing Sediment Sampling Results Greater Than MDLs/RLs or Background Means Plus Two Standard Deviations



SED124 table contains results from four sampling events.

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
PCB-31-13	Aroclor-1254	0.00	0.25	8700.000	12400.000	NA	350.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED07095	Aroclor-1254	0.00	0.17	820.000	12400.000	NA	350.000	ug/kg
SED07095	Benzo(b)fluoranthene	0.00	0.17	890.000	34900.000	NA	660.000	ug/kg
SED07095	Benzo(k)fluoranthene	0.00	0.17	890.000	27000000.000	NA	660.000	ug/kg
SED07095	Fluoranthene	0.00	0.17	1400.000	22100000.000	NA	660.000	ug/kg
SED07095	Pyrene	0.00	0.17	1400.000	22100000.000	NA	660.000	ug/kg
SED07095	Zinc	0.00	0.17	187.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10999	Aroclor-1254	0.00	1.50	1001.000	12400.000	NA	350.000	ug/kg
10999	Barium	0.00	1.50	148.000	32000.000	138.170	200.000	mg/kg
10999	Methylene chloride	1.70	2.20	179.000	2530000.000	NA	5.000	ug/kg
10999	Aroclor-1254	2.70	2.20	240.000	12400.000	NA	350.000	ug/kg
10999	Methylene chloride	2.70	2.20	6.000	2530000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10999	Americium-241	0.00	0.50	0.433	76.000	0.270	0.045	pCi/g
10999	Aroclor-1254	0.00	0.50	8400.000	12400.000	NA	350.000	ug/kg
10999	Benzo(a)anthracene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10999	Benzo(a)pyrene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10999	Benzo(b)fluoranthene	0.00	0.50	1400.000	34900.000	NA	660.000	ug/kg
10999	Chrysene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10999	Fluoranthene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10999	Indeno(1,2,3-cd)pyrene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
10999	Plutonium-239/240	0.00	0.50	0.126	50.000	0.096	0.050	pCi/g
10999	Pyrene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10999	Zinc	0.00	0.50	243.000	501000.000	104.400	4.000	mg/kg
10999	Acenaphthene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Anthracene	0.00	1.50	1500.000	27000000.000	NA	660.000	ug/kg
10999	Aroclor-1254	0.00	1.50	1000.000	12400.000	NA	350.000	ug/kg
10999	Benzo(a)anthracene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Benzo(a)pyrene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Benzo(b)fluoranthene	0.00	1.50	1600.000	34900.000	NA	660.000	ug/kg
10999	Benzo(ghi)perylene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Chrysene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Dibenz(a,h)anthracene	0.00	1.50	890.000	34900.000	NA	660.000	ug/kg
10999	Fluoranthene	0.00	1.50	3100.000	22100000.000	NA	660.000	ug/kg
10999	Fluorene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Indeno(1,2,3-cd)pyrene	0.00	1.50	1000.000	34900.000	NA	660.000	ug/kg
10999	Naphthalene	0.00	1.50	1300.000	34900.000	NA	660.000	ug/kg
10999	Phenanthrene	0.00	1.50	2600.000	22100000.000	NA	660.000	ug/kg
10999	Pyrene	0.00	1.50	3100.000	22100000.000	NA	660.000	ug/kg
10999	Zinc	0.00	1.50	181.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
PCB-31-11	Aroclor-1254	0.00	0.25	3700.000	12400.000	NA	350.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10299	Methylene chloride	2.00	2.20	7.000	2530000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED07195	Aroclor-1254	0.00	0.17	630.000	12400.000	NA	350.000	ug/kg
SED07195	Zinc	0.00	0.17	195.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10199	Methylene chloride	1.20	1.40	7.000	2530000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
11199	Americium-241	0.00	0.50	0.677	76.000	0.023	0.378	pCi/g
11199	Benzo(a)anthracene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
11199	Benzo(a)pyrene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
11199	Benzo(b)fluoranthene	0.00	0.50	1300.000	34900.000	NA	660.000	ug/kg
11199	Chrysene	0.00	0.50	1300.000	34900.000	NA	660.000	ug/kg
11199	Fluoranthene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
11199	Indeno(1,2,3-cd)pyrene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
11199	Plutonium-239/240	0.00	0.50	0.126	50.000	0.096	0.050	pCi/g
11199	Pyrene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
11199	Zinc	0.00	0.50	243.000	501000.000	104.400	4.000	mg/kg
11199	Benzo(k)fluoranthene	0.00	1.80	1100.000	27000000.000	NA	660.000	ug/kg
11199	Pyrene	0.00	1.80	1100.000	22100000.000	NA	660.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
11099	Americium-241	0.00	0.50	0.199	76.000	0.023	0.041	pCi/g
11099	Benzo(a)anthracene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
11099	Benzo(a)pyrene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
11099	Chrysene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
11099	Fluoranthene	0.00	0.50	1600.000	22100000.000	NA	660.000	ug/kg
11099	Plutonium-239/240	0.00	0.50	0.126	50.000	0.096	0.050	pCi/g
11099	Pyrene	0.00	0.50	1600.000	22100000.000	NA	660.000	ug/kg
11099	Zinc	0.00	0.50	243.000	501000.000	104.400	4.000	mg/kg
11099	Aroclor-1254	0.00	1.80	1300.000	12400.000	NA	350.000	ug/kg
11099	Barium	0.00	1.80	148.000	32000.000	138.170	200.000	mg/kg
11099	Zinc	0.00	1.80	181.000	501000.000	104.400	4.000	mg/kg
11099	Manganese	0.00	1.80	812.000	1500.000	220.220	3.000	mg/kg
11099	Methylene chloride	1.20	2.00	7.000	2530000.000	NA	5.000	ug/kg
11099	Cobalt	2.00	2.00	17.200	1500.000	12.300	10.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10499	2-Methylnaphthalene	0.00	0.50	749.000	2040000.000	NA	660.000	ug/kg
10499	4-Methylphenol	0.00	0.50	2300.000	3400000.000	NA	660.000	ug/kg
10499	Americium-241	0.00	0.50	0.179	76.000	0.270	0.024	pCi/g
10499	Acenaphthene	0.00	0.50	1400.000	27000000.000	NA	660.000	ug/kg
10499	Anthracene	0.00	0.50	2600.000	27000000.000	NA	660.000	ug/kg
10499	Aroclor-1254	0.00	0.50	8400.000	12400.000	NA	350.000	ug/kg
10499	Benzo(a)anthracene	0.00	0.50	2600.000	34900.000	NA	660.000	ug/kg
10499	Benzo(b)fluoranthene	0.00	0.50	2600.000	34900.000	NA	660.000	ug/kg
10499	Benzo(k)fluoranthene	0.00	0.50	890.000	27000000.000	NA	660.000	ug/kg
10499	bis(2-Ethylhexyl)phthal	0.00	0.50	2600.000	3400000.000	NA	660.000	ug/kg
10499	Chrysene	0.00	0.50	2600.000	34900.000	NA	660.000	ug/kg
10499	Dibenz(a,h)anthracene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
10499	Fluoranthene	0.00	0.50	5200.000	22100000.000	NA	660.000	ug/kg
10499	Fluorene	0.00	0.50	2600.000	34900.000	NA	660.000	ug/kg
10499	Indeno(1,2,3-cd)pyrene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
10499	Naphthalene	0.00	0.50	2600.000	34900.000	NA	660.000	ug/kg
10499	Phenol	0.00	0.50	1400.000	3400000.000	NA	660.000	ug/kg
10499	Pyrene	0.00	0.50	5200.000	22100000.000	NA	660.000	ug/kg
10499	Zinc	0.00	0.50	374.000	501000.000	104.400	4.000	mg/kg
10499	Acenaphthene	0.00	1.50	2600.000	27000000.000	NA	660.000	ug/kg
10499	Americium-241	0.00	1.50	0.066	76.000	0.270	0.024	pCi/g
10499	Anthracene	0.00	1.50	5200.000	27000000.000	NA	660.000	ug/kg
10499	Benzo(a)anthracene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Benzo(a)pyrene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Benzo(b)fluoranthene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Benzo(k)fluoranthene	0.00	1.50	1800.000	27000000.000	NA	660.000	ug/kg
10499	bis(2-Ethylhexyl)phthal	0.00	1.50	2600.000	3400000.000	NA	660.000	ug/kg
10499	Chrysene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Dibenz(a,h)anthracene	0.00	1.50	1800.000	34900.000	NA	660.000	ug/kg
10499	Fluoranthene	0.00	1.50	10400.000	22100000.000	NA	660.000	ug/kg
10499	Fluorene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Indeno(1,2,3-cd)pyrene	0.00	1.50	1800.000	34900.000	NA	660.000	ug/kg
10499	Naphthalene	0.00	1.50	5200.000	34900.000	NA	660.000	ug/kg
10499	Phenanthrene	0.00	1.50	5200.000	22100000.000	NA	660.000	ug/kg
10499	Pyrene	0.00	1.50	10400.000	22100000.000	NA	660.000	ug/kg
10499	Zinc	0.00	1.50	50.00	501000.000	NA	4.000	mg/kg
10499	Americium-241	0.00	2.50	0.179	76.000	0.270	0.024	pCi/g
10499	Aroclor-1254	0.00	2.50	1100.000	12400.000	NA	350.000	ug/kg
10499	Carbon Tetrachloride	2.50	2.75	11.000	81500.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED01793	Benzo(b)fluoranthene	0.00	0.17	890.000	34900.000	NA	660.000	ug/kg
SED01793	Benzo(k)fluoranthene	0.00	0.17	890.000	27000000.000	NA	660.000	ug/kg
SED01793	Fluoranthene	0.00	0.17	1,410	22100000.000	0.720	0.240	mg/kg
SED01793	Nitrite	0.00	0.17	670.000	22100000.000	NA	660.000	ug/kg
SED01793	Pyrene	0.00	0.17	670.000	22100000.000	NA	660.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
PCB-31-16	Aroclor-1254	0.00	0.25	2300.000	12400.000	NA	350.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
CG49-006	Uranium-234	0.00	0.50	5.048	309.000	3.980	0.033	pCi/g
CG49-006	Uranium-235	0.00	0.50	0.252	15.000	0.220	0.033	pCi/g
CG49-006	Uranium-238	0.00	0.50	5.048	301.000	3.480	2.033	pCi/g

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED07895	Acenaphthene	0.00	0.17	890.000	40800000.000	NA	660.000	ug/kg
SED07895	Americium-241	0.00	0.17	1.000	76.000	0.270	0.024	pCi/g
SED07895	Anthracene	0.00	0.17	1800.000	27000000.000	NA	660.000	ug/kg
SED07895	Aroclor-1254	0.00	0.17	3300.000	12400.000	NA	350.000	ug/kg
SED07895	Benzo(a)anthracene	0.00	0.17	2600.000	34900.000	NA	660.000	ug/kg
SED07895	Benzo(b)fluoranthene	0.00	0.17	2600.000	34900.000	NA	660.000	ug/kg
SED07895	Benzo(k)fluoranthene	0.00	0.17	890.000	27000000.000	NA	660.000	ug/kg
SED07895	bis(2-Ethylhexyl)phthal	0.00	0.17	2600.000	3400000.000	NA	660.000	ug/kg
SED07895	Butylbenzylphthalate	0.00	0.17	890.000	3400000.000	NA	660.000	ug/kg
SED07895	Cadmium	0.00	0.17	2.000	164.000	1.890	1.000	mg/kg
SED07895	Chromium	0.00	0.17	34.000	1500.000	31.230	2.000	mg/kg
SED07895	Chrysene	0.00	0.17	2600.000	34900.000	NA	660.000	ug/kg
SED07895	Copper	0.00	0.17	22.000	3400.000	17.270	2.000	mg/kg
SED07895	Dibenz(a,h)anthracene	0.00	0.17	890.000	34900.000	NA	660.000	ug/kg
SED07895	Diethylphthalate	0.00	0.17	890.000	27000000.000	NA	660.000	ug/kg
SED07895	Fluoranthene	0.00	0.17	5200.000	22100000.000	NA	660.000	ug/kg
SED07895	Fluorene	0.00	0.17	2600.000	34900.000	NA	660.000	ug/kg
SED07895	Indeno(1,2,3-cd)pyrene	0.00	0.17	890.000	34900.000	NA	660.000	ug/kg
SED07895	Nickel	0.00	0.17	7.000	1500.000	5.250	2.000	mg/kg
SED07895	Selenium	0.00	0.17	1.000	164.000	1.000	1.000	mg/kg
SED07895	Zinc	0.00	0.17	923.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED08093	Toluene	0.00	0.17	31.000	31300000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED08093	Barium	0.00	0.17	193.000	26400.000	148.170	20.000	mg/kg
SED08093	Cobalt	0.00	0.17	12.000	1500.000	10.300	10.000	mg/kg
SED08093	Strontium	0.00	0.17	230.000	41100.000	207.440	40.000	mg/kg
SED08093	Toluene	0.00	0.17	6.000	31300000.000	NA	5.000	ug/kg
SED08093	Zinc	0.00	0.17	194.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED08093	Chromium	0.00	0.17	30.000	1500.000	27.220	1.000	mg/kg
SED08093	Copper	0.00	0.17	22.000	3400.000	17.270	2.000	mg/kg
SED08093	Iron	0.00	0.17	23000.000	30700.000	21010.010	100.000	mg/kg
SED08093	Mercury	0.00	0.17	0.170	23.000	0.220	0.000	mg/kg
SED08093	Nickel	0.00	0.17	369.000	41100.000	328.000	4.000	mg/kg
SED08093	Zinc	0.00	0.17	369.000	501000.000	104.400	4.000	mg/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
SED08093	Acetone	0.00	0.17	310.000	102000000.000	NA	100.000	ug/kg
SED08093	Toluene	0.00	0.17	38.000	31300000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10799	Americium-241	0.00	0.50	0.377	76.000	0.270	0.045	pCi/g
10799	Benzo(a)anthracene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10799	Benzo(a)pyrene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10799	Benzo(b)fluoranthene	0.00	0.50	1300.000	34900.000	NA	660.000	ug/kg
10799	Chrysene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10799	Fluoranthene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10799	Indeno(1,2,3-cd)pyrene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
10799	Pyrene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10799	Zinc	0.00	0.50	243.000	501000.000	104.400	4.000	mg/kg
10799	Aroclor-1254	0.00	1.80	1100.000	12400.000	NA	350.000	ug/kg
10799	Zinc	0.00	1.80	148.000	501000.000	104.400	4.000	mg/kg
10799	Methylene chloride	1.65	1.85	7.000	2530000.000	NA	5.000	ug/kg
10799	Methylene chloride	2.85	3.05	6.000	2530000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10699	Aroclor-1254	0.00	0.50	760.000	12400.000	NA	350.000	ug/kg
10699	Zinc	0.00	0.50	112.000	501000.000	104.400	4.000	mg/kg
10699	Aroclor-1254	2.00	2.20	6.000	12400.000	NA	350.000	ug/kg
10699	Methylene chloride	2.00	2.20	6.000	2530000.000	NA	5.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
PCB-31-10	Aroclor-1254	0.00	0.25	1500.000	12400.000	NA	350.000	ug/kg

Location	Analyte	Sbd_(ft)	Sed_(ft)	Result	Wrw_al	Mean+2sd	Mdl/rl	Units
10699	Americium-241	0.00	0.50	0.377	76.000	0.270	0.041	pCi/g
10699	Aroclor-1254	0.00	0.50	8400.000	12400.000	NA	350.000	ug/kg
10699	Barium	0.00	0.50	148.000	32000.000	138.170	200.000	mg/kg
10699	Benzo(a)anthracene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10699	Benzo(a)pyrene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10699	Benzo(b)fluoranthene	0.00	0.50	1300.000	34900.000	NA	660.000	ug/kg
10699	Chrysene	0.00	0.50	1100.000	34900.000	NA	660.000	ug/kg
10699	Fluoranthene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10699	Indeno(1,2,3-cd)pyrene	0.00	0.50	890.000	34900.000	NA	660.000	ug/kg
10699	Pyrene	0.00	0.50	2600.000	22100000.000	NA	660.000	ug/kg
10699	Zinc	0.00	0.50	537.000	501000.000	104.400	4.000	mg/kg
10699	Methylene chloride	1.65	1.85	7.000	2530000.000	NA	5.000	ug/kg
10699	Methylene chloride	2.85	3.05	6.000	2530000.000	NA	5.000	ug/kg
10699	Zinc	2.85	3.05	148.000	501000.000	104.400	4.000	mg/kg

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KEY

- Sediment WRW AL exceedance
- Sediment less than ALs
- Sediment sampled location
- IHSS 139.1 (N)(a) (Hydroxide Tank, KOH, and NaOH condensate)
- PAC 700-1108 (Bowman's Pond)
- Demolished structure
- Structure
- Lakes or ponds
- Paved area
- Dirt road
- Stream, ditch, or other drainage

N

300 0 300 Feet

Scale = 1:2,000

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

700-11char_gpp_12_03.apr March 2004

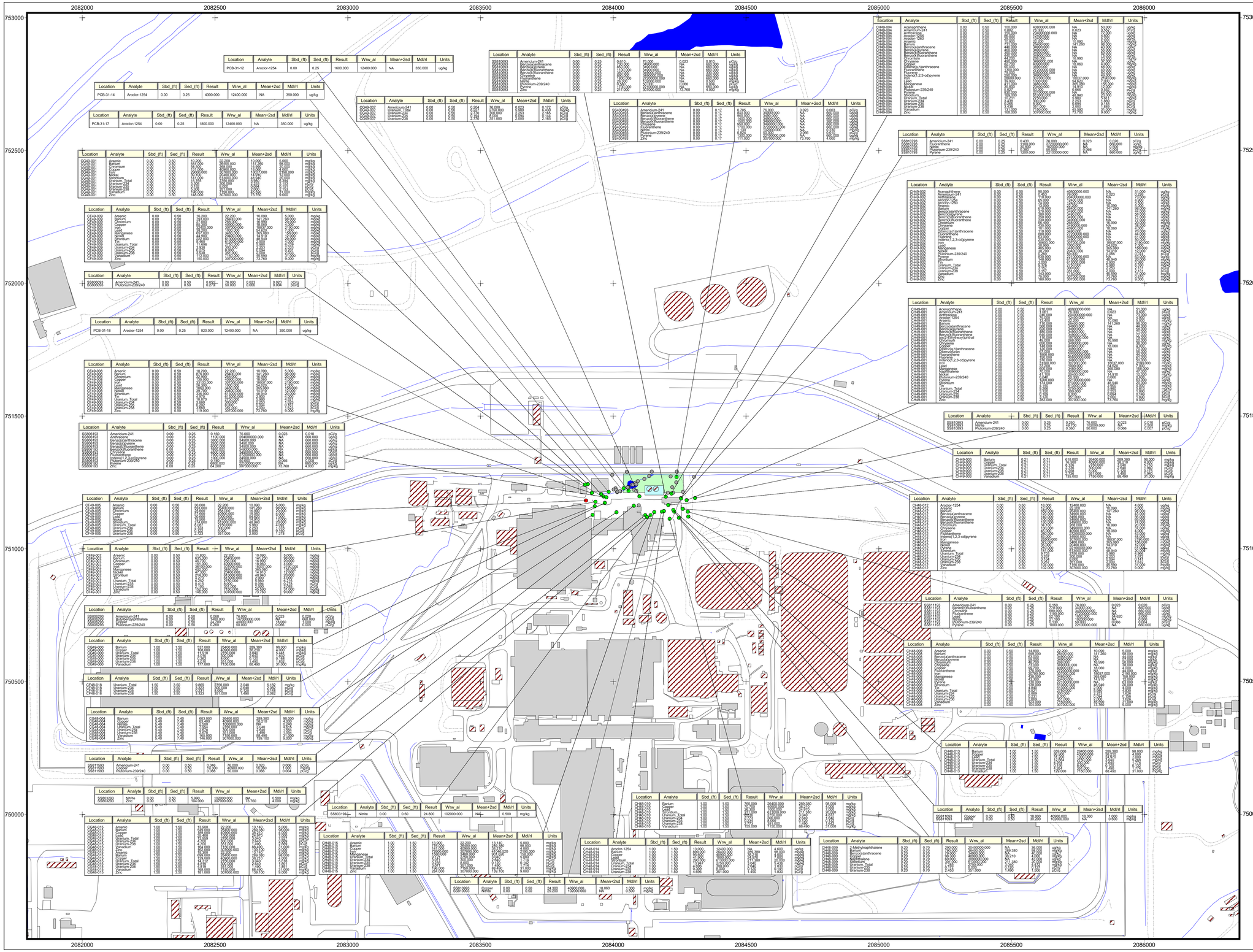

Figure 3

IHSS Group 700-11 Existing Soil Sampling Results Greater Than MDLs/RLs or Background Means Plus Two Standard Deviations

KEY

- Soil wildlife refuge worker exceedance
- Soil less than ALs
- Soil sampled location
- IHSS 139.1 (N)(a) (Hydroxide Tank, KOH, and NaOH condensate)
- PAC 700-1108 (Bowman's Pond)
- Demolished structure
- Structure
- Lakes or ponds
- Paved area
- Dirt road
- Stream, ditch, or other drainage

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N

300 0 300 Feet

Scale = 1:2,100

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

700-11char_gpp_12_03.apr March 2004

3.0 SAMPLING

The IHSS Group 700-11 sampling summary is presented in Table 2.

Table 2
IHSS Group 700-11 Sampling Summary

Category	Total
Number of Sampling Locations	25
Number of Samples	50
Number of Metal Analyses	28
Number of PCB Analyses	54
Number of Radionuclide Analyses	28
Number of SVOC Analyses	28
Number of VOC Analyses	14

All proposed sampling locations are located either within PAC 700-1108 or nearby surrounding areas. No characterization sampling locations are proposed in IHSS 139.1(N)(a). Four confirmation samples will be collected from this area after the concrete slab that supported the former steam condensate tanks is removed. The confirmation samples will include two samples from under the former tanks and two samples at the northern edge of the former concrete slab.

The proposed sampling specifications (number and type of samples) for IHSS Group 700-11 are listed in Table 3 and shown on Figure 4. A 36-foot statistical grid and biased sampling locations were applied at IHSS Group 700-11. Biased sampling locations were selected near outfalls of storm and foundation drains, and in the drainage area downgradient of Bowman's Pond. Additionally, 10 biased sampling locations for PCBs analyses only were selected in three areas formerly used for outside storage south, southwest, and west of IHSS Group 700-11. These select areas exist between the 700s-Area IHSS/PAC/UBC boundaries and have been included as part of the IHSS Group 700-11 characterization to target potential PCB sources.

As part of IHSS Group 700-5 SAP Addendum #IA-03-17 (DOE 2003), three locations were identified (CG49-012, CG49-015 and CG49-016) for sampling along the drainage into Bowman's Pond and will not be duplicated in this SAP Addendum. These sampling locations are shown on Figure 4. One of the samples, CG49-016, will be analyzed for dioxins in addition to metals, PCBs, radionuclides, SVOCs, and volatile organic compounds (VOCs) because the sampling location coincides with the previous maximum PCB detection reported in the area. Analytical results of the three sampling locations will be included with the Data Summary or Closeout Report for both IHSS Groups 700-11 and 700-5.

Proposed new sampling locations are the starting point for IHSS Group characterization. After characterization starts, the number and type of samples may change based on sample results. Changes to sampling specifications will be considered in consultation with the regulatory agencies. If contaminant concentrations are found to be above ALs near the grid boundary, additional samples will be collected in consultation with the regulatory agencies and a contact record will be issued. Biased sampling locations will be field-checked and the locations adjusted, if necessary, through the consultative process.

4.0 REFERENCES

DOE, 1991, Assessment of Known, Suspect, and Potential Environmental Releases of Polychlorinated Biphenyls (PCBs), Preliminary Assessment/Site Description, Rocky Flats Plant, Golden, Colorado, October.

DOE, 1992, Historical Release Report for the Rocky Flats Plant, Golden, Colorado, June.

DOE, 1999a, Annual Historical Release Report for the Rocky Flats Plant, Golden, Colorado, September.

DOE, 1999b, Closeout Report for the Site Characterization of Bowmans Pond (PAC 700-1108) and Steam Condensate Holding Tanks (IHSS 139.1N), Rocky Flats Environmental Technology Site, Golden, Colorado, September.

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

DOE, 2003, Industrial Area Sampling and Analysis Plan FY03 Addendum #IA-03-17, Rocky Flats Environmental Technology Site, Golden, Colorado, October.

DOE, CDPHE, and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement, U.S. Department of Energy, Colorado Department of Public Health and Environment, and U.S. Environmental Protection Agency, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

Table 3
IHSS Group 700-11 Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-018	2084055.323	751279.335	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-019	2084042.554	751245.676	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-021	2084113.622	751257.218	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-022	2084065.319	751217.788	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CG49-023	2084100.853	751223.559	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Surface soil	0.0-0.5'	Metals	6200	6010	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Subsurface soil	0.5-2.5'	Metals	6200	6010	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CG49-025	2083965.368	751209.605	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Biased – upgradient confluence of storm drain and drainage to Bowman's Pond
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Surface soil	0.0-0.5'	Metals	6200	6010	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Subsurface soil	0.5-2.5'	Metals	6200	6010	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CG49-026	2084086.896	751212.643	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Biased – Bldg 774 foundation drain outfall
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-017	2084149.157	751262.99	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-018	2084184.691	751268.761	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-019	2084220.225	751274.532	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-020	2084255.76	751280.303	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-022	2084207.456	751240.873	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Surface soil	0.0-0.5'	Metals	6200	6010	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Subsurface soil	0.5-2.5'	Metals	6200	6010	Statistical sample location

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Statistical sample location
700-11	PAC 700-1108	CH49-023	2084242.991	751246.644	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Statistical sample location
700-11	PAC 700-1108	CH49-024	2084230.222	751212.985	Surface soil	0.0-0.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-024	2084230.222	751212.985	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Statistical sample location
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Surface soil	0.0-0.5'	Metals	6200	6010	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Surface soil	0.0-0.5'	Radionuclides	HPGe	Alpha spec	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Surface soil	0.0-0.5'	SVOCs	N/A	8270	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Subsurface soil	0.5-2.5'	Metals	6200	6010	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Subsurface soil	0.5-2.5'	Radionuclides	HPGe	Alpha spec	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Subsurface soil	0.5-2.5'	SVOCs	N/A	8270	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CH49-025	2084142.191	751275.838	Subsurface soil	0.5-2.5'	VOCs	8260	8260	Biased – downgradient of Bowman's Pond and upgradient of confluence with roadside ditch
700-11	PAC 700-1108	CG48-028	2084113.86	751138.056	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CG48-028	2084113.86	751138.056	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-027	2084121.911	751161.754	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-027	2084121.911	751161.754	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CH48-052	2084160.648	751161.146	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CH48-052	2084160.648	751161.146	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-029	2084033.652	751124.536	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-029	2084033.652	751124.536	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-030	2083959.368	751148.689	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-030	2083959.368	751148.689	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-031	2083972.432	751120.738	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-031	2083972.432	751120.738	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG48-032	2084040.488	751152.791	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	On-Site Laboratory Method	Off-Site Laboratory Method	Comments
700-11	PAC 700-1108	CG48-032	2084040.488	751152.791	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-028	2083993.7	751268.85	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-028	2083993.7	751268.85	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-029	2084029.246	751267.027	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-029	2084029.246	751267.027	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-030	2084002.207	751240.443	Surface soil	0.0-0.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area
700-11	PAC 700-1108	CG49-030	2084002.207	751240.443	Subsurface soil	0.5-2.5'	PCBs	N/A	8082	Biased – Area North of B774, PCB analysis only to characterize past storage area

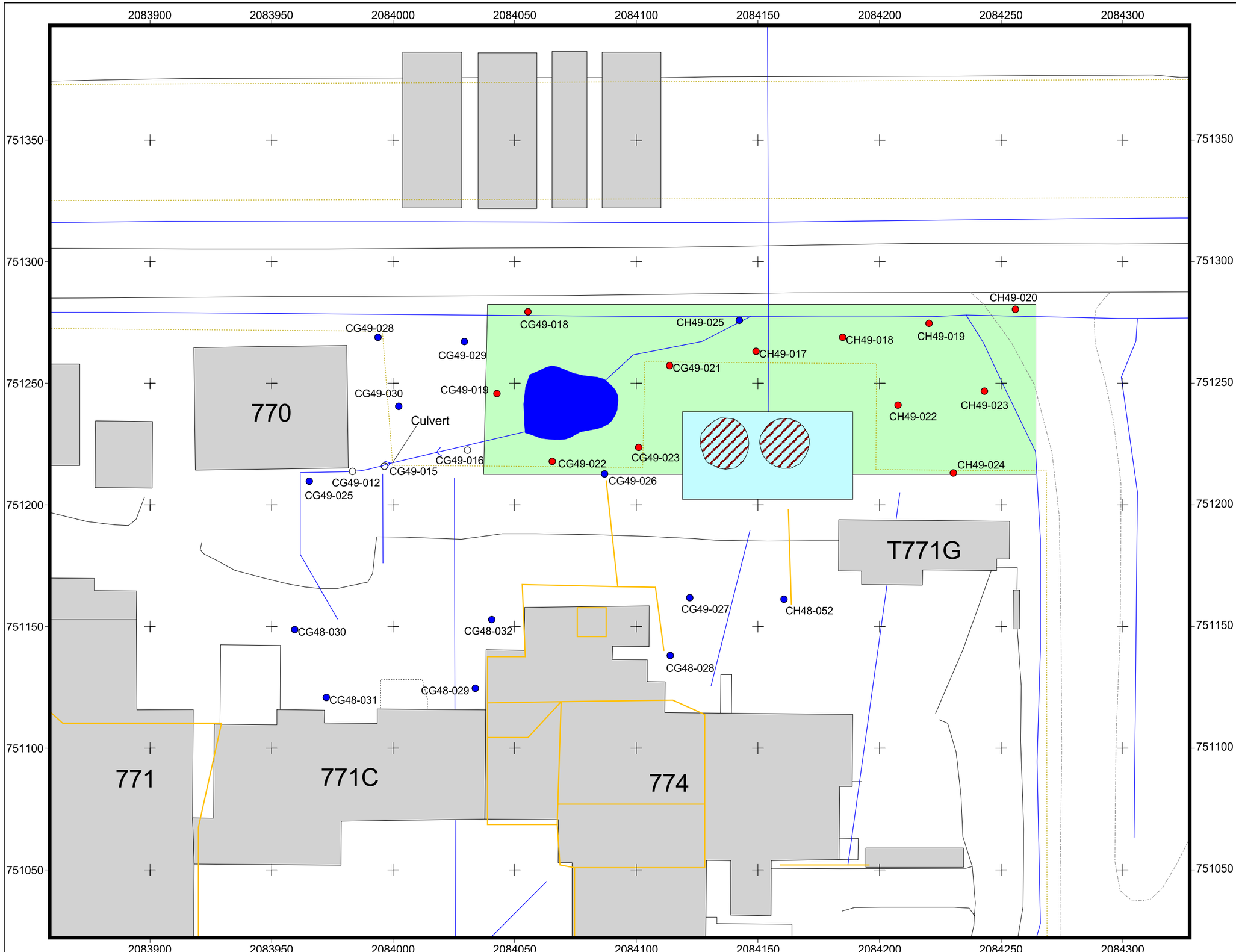

Figure 4

IHSS Group 700-11 (IHSS 139.1 (N)(a) and PAC 700-1108) Proposed Sampling Locations

KEY

- Statistical sampling location
- Biased sampling location
- Biased sampling location IHSS Group 700-5 (IASAP #IA-03-17)
- IHSS 139.1(N)(a)
- PAC 700-1108 (Bowman's Pond)
- Structure
- Demolished structure
- Foundation drain
- Stream, ditch, or other drainage
- Dirt road
- Paved road
- Surface topography (2 ft interval)
- Fence (removed)
- Bowman's Pond

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N

30 0 30 Feet

Scale = 1:450
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

700-11char_gpp_12_03.apr March 2004