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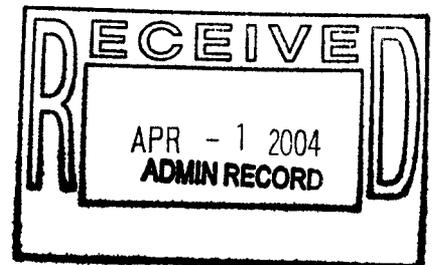
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**Draft Industrial Area
Sampling and Analysis Plan
Fy04 Addendum #IA-04-14
IHSS Group 400-4**

Approval received from the Colorado Department of Public Health and Environment

()

Approval letter contained in the Administrative Record



March 2004

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ACRONYMS

| | |
|-------|--|
| bgs | below ground surface |
| DOE | U S Department of Energy |
| HPGe | high-purity germanium |
| HRR | Historical Release Report |
| IA | Industrial Area |
| IASAP | Industrial Area Sampling and Analysis Plan |
| IHSS | Individual Hazardous Substance Site |
| MDL | method detection limit |
| µg/kg | micrograms per kilogram |
| mg/kg | milligrams per kilogram |
| NFAA | no further accelerated action |
| N/A | not applicable |
| OPWL | Original Process Waste Lines |
| PAC | Potential Area of Concern |
| pCi/g | picocuries per gram |
| PCOC | potential contaminant of concern |
| RL | reporting limit |
| SAP | Sampling and Analysis Plan |
| SWD | Soil Water Database |
| 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-04-14 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for Potential Areas of Concern (PACs) proposed for characterization. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS Group 400-4 and associated PACs listed in Table 1. The locations of the IHSS Group PACs proposed for this characterization are shown on Figure 1. The PCOCs, listed by PAC, are identified in Table 2 and include radionuclides, metals, and semivolatile organic compounds (SVOCs).

Table 1
IASAP Addendum #IA-04-14 IHSS Group

| IHSS Group | IHSS/PAC/UBC Site |
|-------------------|---|
| 400-4 | PAC 400-803 – Miscellaneous Dumping, Building 460 Storm Drain |
| | PAC 400-804 – Road North of Building 460 |

Table 2
PCOCs at IHSS Group 400-4

| IHSS Group | IHSS/PAC/UBC Site | PCOCs | Media | Data Source | Sampling Location Method |
|-------------------|---|----------------------------------|--------------|--|---------------------------------|
| 400-4 | PAC 400-803 – Miscellaneous Dumping, Building 460 Storm Drain | Radionuclides Metals SVOCs | Surface | HRRs (DOE 1992-2003) Process knowledge (IASAP [DOE 2001]) | Bias |
| | PAC 400-804 – Road North of Building 460 | Radionuclides | Surface | HRRs (DOE 1992-2003) Process knowledge (IASAP [DOE 2001]) | Statistical |

2.0 IHSS GROUP 400-4

2.1 Existing Characterization Information

Existing concentrations and activities greater than background means plus two standard deviations, or method detection limits (MDLs) for existing data and reporting limits (RLs) for data collected as part of previous accelerated actions, are presented on Figures 2 and 3. These figures illustrate sampling results for surface and subsurface soils, respectively, within a 50-foot buffer surrounding IHSS Group 400-4. The predominant analyte groups that were detected above background means plus two standard deviations or MDLs/RLs on both figures are metals, radionuclides, and SVOCs. Volatile organic compounds (VOCs) were also detected but at very low concentrations.

Existing information and data for these PACs are available in Appendix C of the IASAP (DOE 2001), the Historical Release Reports (HRRs) (DOE 1992-2003), and the IA Data Summary Report (DOE 2000). Current data for accelerated actions are found in the Soil Water Database (SWD).

2.2 Sampling

The proposed sampling specifications (number and types of samples) for IHSS Group 400-4 are summarized in Tables 3 and 4. 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 sampling results. Changes to sampling specifications will be considered in consultation with the regulatory agencies.

Table 3
IHSS Group 400-4 Sampling and Analysis Summary

| Category | Total |
|---------------------------------|--------------|
| Number of Sampling Locations | 6 |
| Total Number of Samples | 14 |
| Number of Radionuclide Analyses | 6 |
| Number Metal Analyses | 4 |
| Number of SVOC Analyses | 4 |

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Three types of sampling strategies are used to determine sampling locations: statistical, geostatistical, and biased. Geostatistical methods were not used to determine sampling locations in this Addendum. Statistical grids have computer-generated random start points and orientations. Additionally, the grids have been extended outside the PACs to provide additional sampling locations if needed. The IASAP 11-meter statistical grid was used to determine sampling locations at PAC 400-804, and contains two locations within the PAC boundary. Based on location of subsurface storm drains associated with the miscellaneous dumping in this area and likelihood of contamination, biased sampling locations were used for characterization of PAC 400-803. PAC 400-803 contains numerous subsurface sections of corrugated metal piping which daylight at various locations along the southern PAC boundary. The starting point of the drain system begins on the north side of Building 444, approximately 130 feet east of the intersection of 5th Street and Cottonwood Avenue. The sample locations were strategically placed near storm drain inputs and outfalls in order to trace the potential path of contamination. Figure 4 illustrates the locations of the storm drains and associated biased sample locations near drain inputs and outfalls for PAC 400-803, as well as the two statistical sample locations for PAC 400-804.

PAC 400-804, as well as a large portion of PAC 400-803, is covered with asphalt. Samples located in an asphalt covered area will be collected within native soil beneath any asphalt and road base present.

IHSS 157 2, directly adjoining to the south, will be sampled as part of IASAP Addendum #IA-03-14 (IHSS Groups 400-5 and 400-6 [DOE 2003a]). IHSS 160, also directly adjoining to the south, will be sampled as part of IASAP Addendum #IA-03-09 (IHSS Group 600-4 [DOE 2003b]).

IHSS 117 3, which is directly adjoining to the northeast, received no further accelerated action (NFAA) approval in 1999 (DOE 1999) and will not be sampled as part of this IASAP Addendum.

Two Original Process Waste Lines (OPWL) are present beneath PAC 400-803. Line P-5 runs north to south from Building 444 and is located approximately 4 feet below ground surface (bgs). Line P-4 runs east to west, is located approximately 3.5 feet bgs, and crosses the easternmost portion of PAC 400-803. Figure 4 shows the location and approximate depths of the OPWL. IHSS Group 400-4 PACs are the result of releases to surface soil, and therefore no OPWL samples will be collected as part of this IASAP Addendum. Confirmation samples associated with OPWL removal in this area will be collected as part of the OPWL Notification #03-14 (DOE 2003c).

3 0 REFERENCES

DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

DOE, 1999, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

DOE, 2000, Rocky Flats Environmental Technology Site Industrial Area Data Summary Report, Golden, Colorado, September

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

DOE, CDPHE, and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement, Rocky Flats Environmental Technology Site, Golden, Colorado, July

DOE, 2003a, Industrial Area Sampling and Analysis Plan, FY03 Addendum #IA-03-14, IHSS Groups 400-5 and 400-6, Rocky Flats Environmental Technology Site, August

DOE, 2003b, Industrial Area Sampling and Analysis Plan, FY03 Addendum #IA-03-09, IHSS Group 600-4, Rocky Flats Environmental Technology Site, August

DOE, 2003c, Final Industrial Area Sampling and Analysis Plan, FY03 Addendum #IA-03-11, IHSS Group 000-2, Original Process Waste Lines, Rocky Flats Environmental Technology Site, August

**Table 4
Sampling Specifications for IHSS Group 400-4**

| IHSS Group | IHSS/PAC/UBC Site | Location Code | Easting | Northing | Media | Depth Interval | Analyte | Onsite Laboratory Method | Offsite Laboratory Method |
|------------|---|---------------|-------------|------------|--------------|----------------|---------------|--------------------------|---------------------------|
| 400-4 | PAC 400-803 – Miscellaneous Dumping, Building 460 Storm Drain | BX37-024 | 2082288 850 | 748946 836 | Surface soil | 0'-0 5' | Metals | N/A | 6010 |
| | | BX37-024 | 2082288 850 | 748946 836 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |
| | | BX37-024 | 2082288 850 | 748946 836 | Surface soil | 0'-0 5' | SVOCs | N/A | 8270 |
| | | BZ37-022 | 2082654 353 | 748950 746 | Surface soil | 0'-0 5' | Metals | N/A | 6010 |
| | | BZ37-022 | 2082654 353 | 748950 746 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |
| | | BZ37-022 | 2082654 353 | 748950 746 | Surface soil | 0'-0 5' | SVOCs | N/A | 8270 |
| | | CA38-023 | 2082800 656 | 748998 399 | Surface soil | 0'-0 5' | Metals | N/A | 6010 |
| | | CA38-023 | 2082800 656 | 748998 399 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |
| | | CA38-023 | 2082800 656 | 748998 399 | Surface soil | 0'-0 5' | SVOCs | N/A | 8270 |
| | | CA38-024 | 2082914 284 | 749011 767 | Surface soil | 0'-0 5' | Metals | N/A | 6010 |
| | | CA38-024 | 2082914 284 | 749011 767 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |
| | | CA38-024 | 2082914 284 | 749011 767 | Surface soil | 0'-0 5' | SVOCs | N/A | 8270 |
| | | BY38-024 | 2082362 666 | 748982 644 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |
| | | BX37-023 | 2082335 362 | 748959 182 | Surface soil | 0'-0 5' | Radionuclides | HPGe | Alpha Spec |

Figure 1
IHSS Group 400-4
Location Map

KEY

- PAC
- Dirt Road
- Paved Road
- ~ Stream
- ▭ Lake
- Fence
- ▨ Structure
- ▩ Demolished
- ▩ Standing

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 Datum: NAD 27

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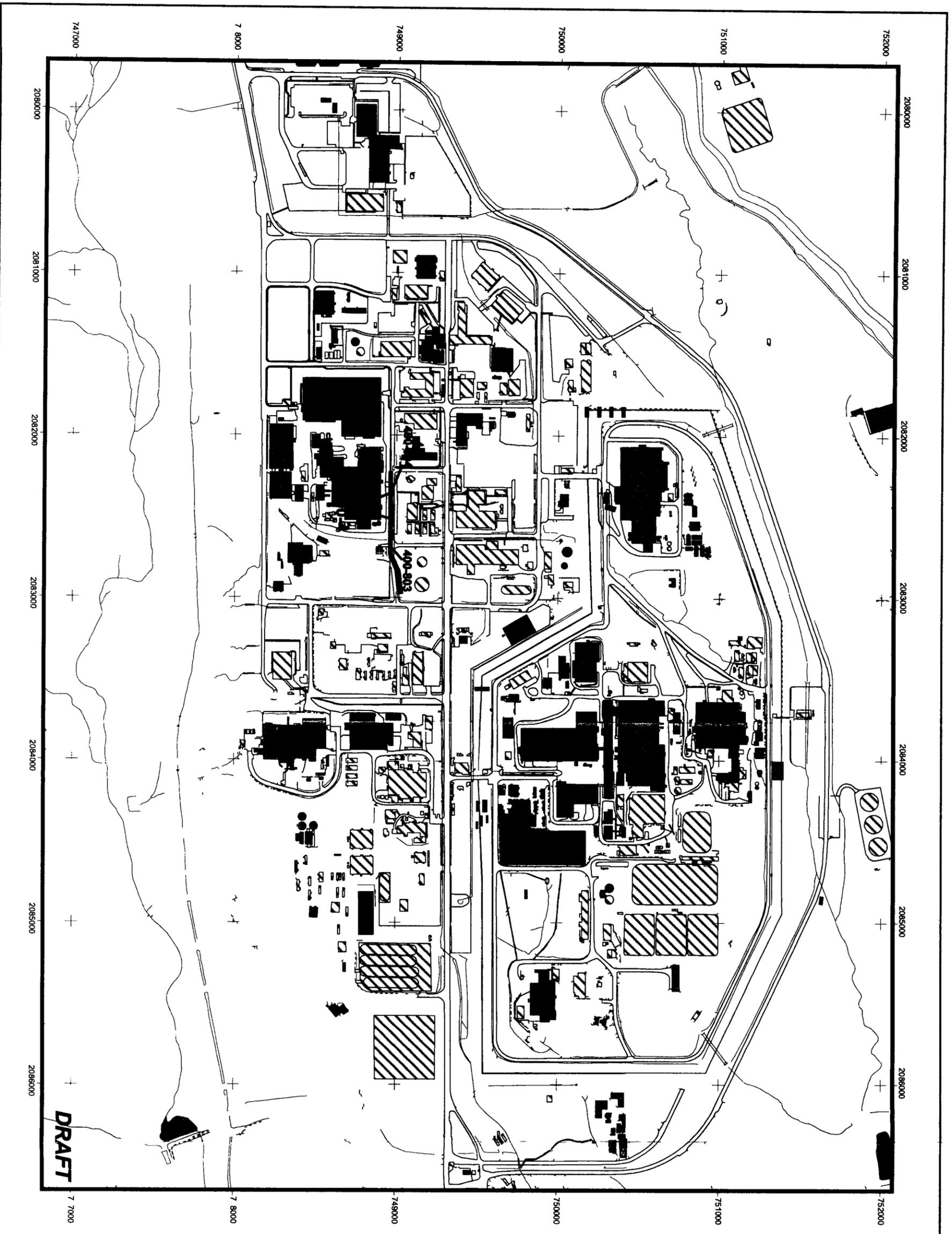


Figure 2
Existing Surface Soil Sample Results
Greater Than Background Means
Plus Two Standard Deviations
or MDLs/RLs

KEY

- Sample Locations**
- Exceeds WRW Action Level
 - Exceeds Background or MDL/RL
 - Below Background and MDL/RL
- PAC**
- OPWL
- Dirt Road
- Stream
- Storm Drain
- Structure
- ▨ Demolished
 - ▨ Standing
- UBC
- Paved Road
- Asphalt

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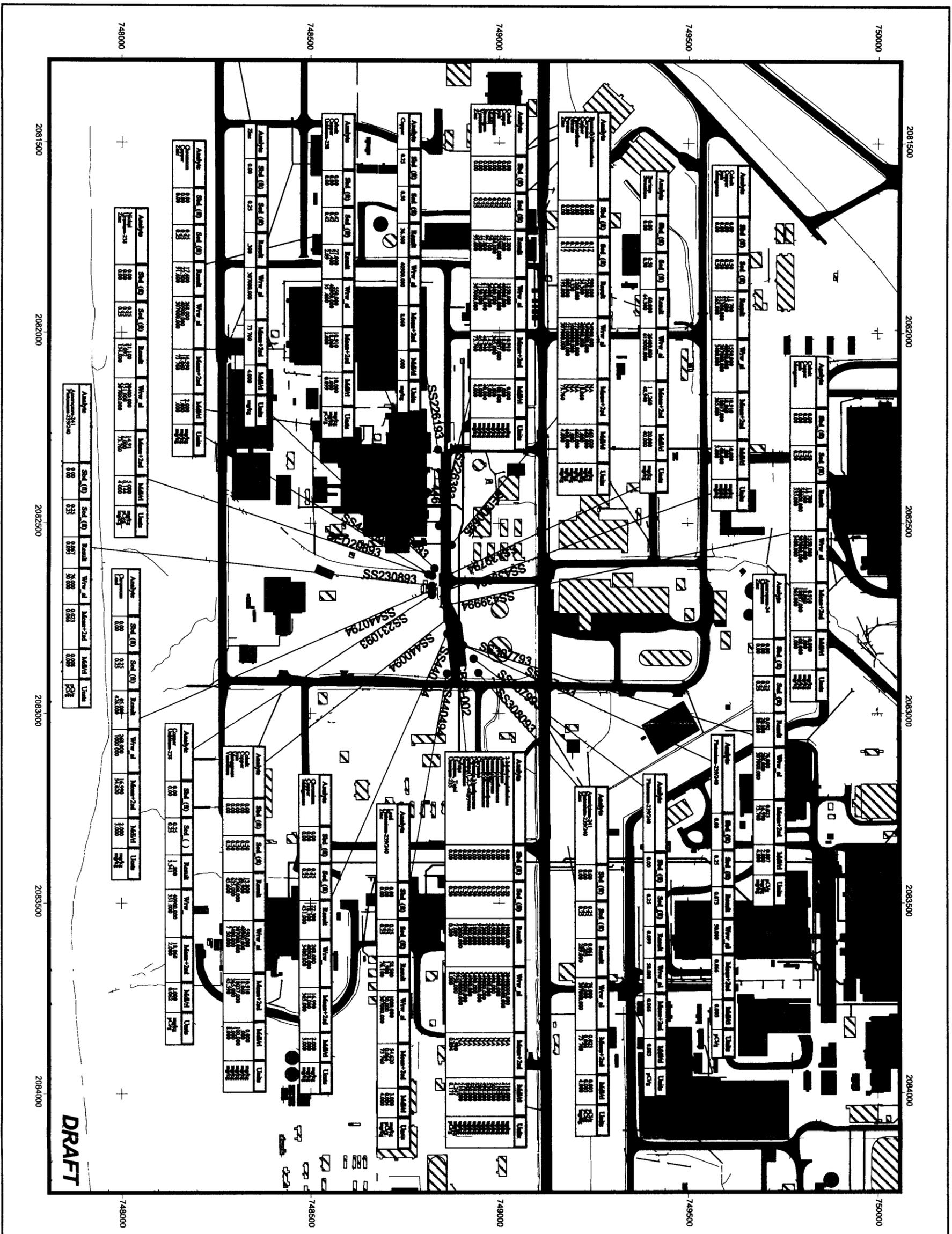
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Figure 3
Extending Subsurface Soil Sample Results
Greater Than Background Means
Plus Two Standard Deviations
or MDLs/RLs

KEY

Sample Locations

- Exceeds WRW Action Level
- Exceeds Background or MDL/RL
- Below Background and MDL/RL
- PAC

- ∩ OPWL
- ∩ Dirt Road
- ∩ Stream
- ∩ Storm Drain
- Structure
- ▨ Demolished
- ▨ Standing
- UBC
- ▨ Paved Road
- ▨ Asphalt

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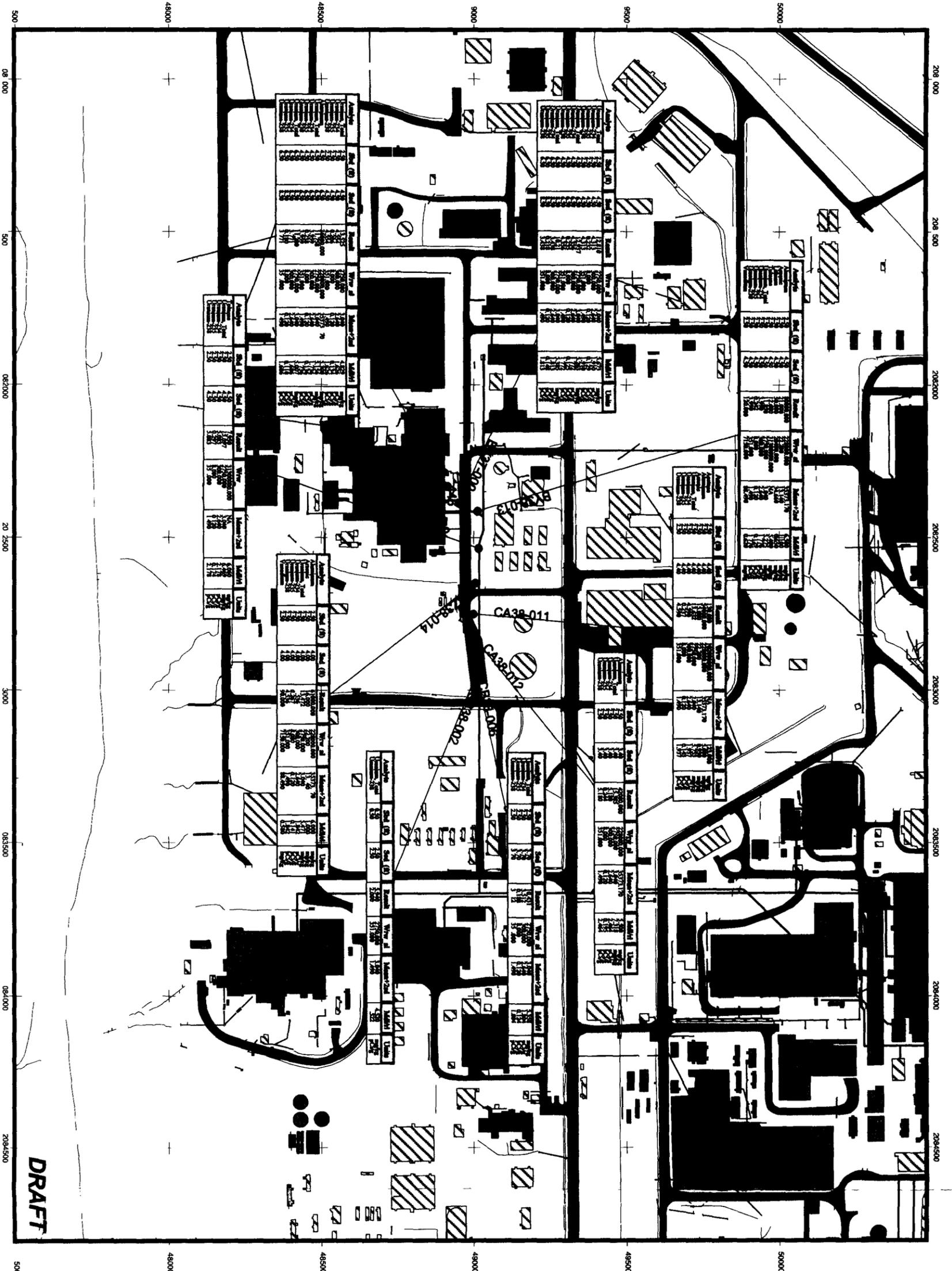


Figure 4
IHSS Group 400-4
Proposed Sampling Locations

KEY

- Sample Locations**
- Proposed Biased Locations
 - Proposed Statistical Locations
 - Existing Sample Locations
 - PAC
 - ∩ OPWL
 - Dirt Road
 - ~ Stream
 - ∩ Storm Drain
 - Structure
 - ▨ Demolished
 - ▨ Standing
 - UBC
 - Paved Road
 - Asphalt

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