



TechLaw, Inc.

7411 Beach Drive East, Port Orchard, WA 98366

Tel: (360) 871-8750, Fax: (360) 871-8763

www.techlawinc.com

March 31, 2008

Mr. Earl Liverman
Federal On-Scene Coordinator
United States Environmental Protection Agency
1910 Northwest Boulevard, Suite 208
Coeur d'Alene, ID 83814

Subject: Removal Assessment Report, Revision 2
Pend Oreille Village
EPA Contract No. EP-S7-06-03
Technical Direction Document (TDD) No. 07-06-0005
Document No. TO-001-07-09-0006-DCN147

Dear Mr. Liverman:

TechLaw, Inc., (TechLaw) Superfund Technical Assessment and Response Team - 3 (START-3) is submitting three copies of the Removal Assessment (RA) Report, Revision 2 for the Pend Oreille Village site located near Metaline Falls, in Pend Oreille County, Washington. This RA Report describes the assessment and sampling activities completed at the Pend Oreille Village during August and September 2007.

Please contact me at (770) 331-8761 if you have any questions or comments regarding this report.

Sincerely,

William R. (Ray) Doyle
START-3 Program Manager

Enclosure

cc: Sharon Nickels, EPA Project Officer
Bryan McKinnon, TechLaw, Inc. START-3 Removal Coordinator/Project Manager
Libby Burris, TechLaw, Inc. START-3 Central Files Administrator

PEND OREILLE VILLAGE
REMOVAL ASSESSMENT REPORT
METALINE FALLS, PEND OREILLE COUNTY, WASHINGTON

Revision 2

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY

Region 10

Seattle, Washington

Contract No.	:EP-S7-06-03
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EPA Work Assignment Manager	:Earl Liverman
Telephone No.	:208-664-4858
Prepared by	:TechLaw, Inc. - START-3
START-3 Project Manager	:Bryan McKinnon
Telephone No.	:360-871-8751

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1.0 INTRODUCTION

The United States Environmental Protection Agency (EPA) performed a removal assessment (RA) at the Pend Oreille Village Site (POV) and the Grandview Mine and Mill Site (Upper Level), located in Pend Oreille County, Washington (Figure 1). The goal of the RA was to gather information to support a decision regarding the need for further action under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

This document has been prepared in accordance with TDD No.07-06-0005, which the EPA assigned to the TechLaw, Inc., (TechLaw) Superfund Technical Assessment and Response Team - 3 (START-3) under Contract No. EP-S7-06-03. This report documents the results previous investigations and this RA conducted by TechLaw START-3 at the POV and Upper Level during the week of 13 August 2007.

This report contains the following sections: Section 1 - Introduction; Section 2 – Site Background and History; Section 3 – Summary of Previous Investigations; Section 4 – Field Sampling Event – 2007; Section 5 – Investigation-Derived Waste; Section 6 – Sample Collection and Analytical Parameters; Section 7 – Soil Sampling Analytical Results/Discussion; Section 8 – Quality Assurance/Quality Control; Section 9 – Summary; and Section 10 – References.

2.0 BACKGROUND AND HISTORY

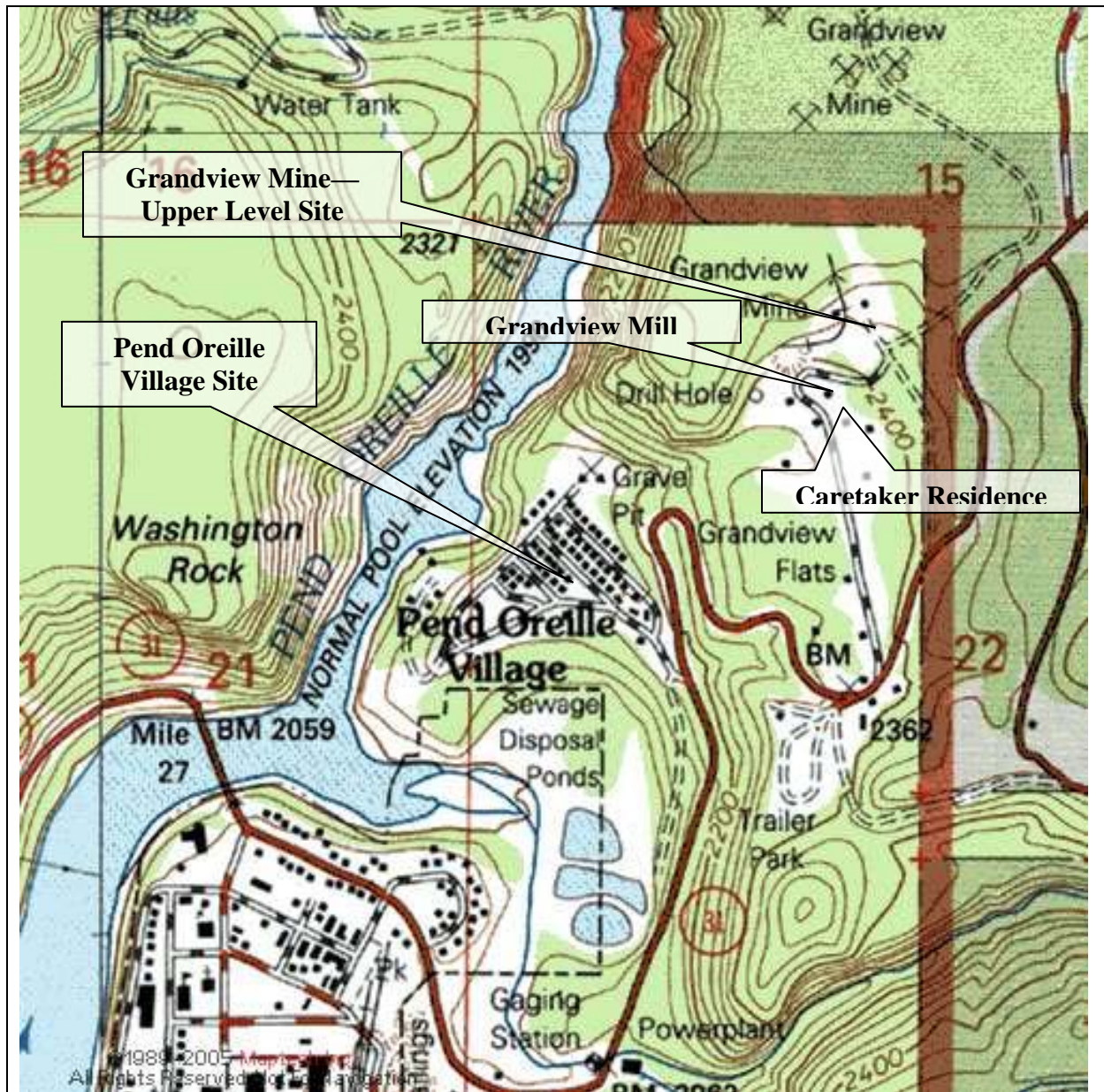
The following section contains a brief description of the POV and the Upper Level. Refer to the documents listed below under Section 4.0 for more detailed information.

2.1 Pend Oreille Village

The Pend Oreille Village is located off Highway 31, one-half of a mile north of Metaline Falls, Washington, at latitude 48°52'05.65" N, longitude 117°21'53.17" W (Figure 1; Appendix A, Figures A-1 and A-2). The POV is a small unincorporated community of about 30 residents and with about five (5) to ten (10) children living within the village. Currently, the 31 residential lots are owned by various interests, including a mining company, a public utility district, and private parties. The Grandview Mine and Mill tailings pile is adjacent to the POV.

2.2 Upper Level

The Upper Level Site is located three-quarters of a mile from the east bank of the Pend Oreille River, two miles northeast of Metaline Falls off of Grandview Flats Road at latitude 48 52' 22.04" N, longitude 117 21' 26.16" W (Figure 1). Access to the Upper Level Site is restricted. It is bordered to the west by steeply sloping wooded hills. The east bank of the Pend Oreille River is approximately one-fifth of a mile west of the Upper Level. The southern portion is also bordered by steep slopes leading downhill to the former Grandview Mill and tailings pile. An occupied caretaker's residence is located approximately 200 feet southwest of the Upper Level (Appendix A, Figure A-23).



Metalline Falls, Pend Oreille County, Washington

DATE: 1989

SCALE: 1:24,000

SOURCE: Maptech



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FIGURE 1

Title: Topographical Site Location Map

Site: Pend Oreille Village

City: Metalline Falls

State: Washington

TDD: 07-06-0005

The 200 acre Upper Level Site was active from 1924 through 1955. Approximately 5,300 feet of underground workings were developed while the mine was in operation. Mining was conducted at two levels; the main tunnel was at 2,424 feet above mean sea level and the lower level was 200 feet beneath the main tunnel operations. The ore was broken up underground by drilling and blasting and was subsequently transported up to the surface for further crushing and processing.

Process wastes and mill tailings were discharged into a former wastewater ditch that emptied into a vegetated canyon. The exact dates the process wastes and tailings were discharged into the ditch and canyon and their respective volumes are unknown. Whether by ditch or wooden flume, the resulting accumulation of suspected tailings presently lay on approximately one acre of ground, approximately one-fifth of a mile southwest of the Grandview Mill (E & E, 2001). Access to the tailings pile is restricted.

Currently, only the blacksmith and machine shop, the magazine shack, and what appeared to be a diamond core storage shack remain on the property today.

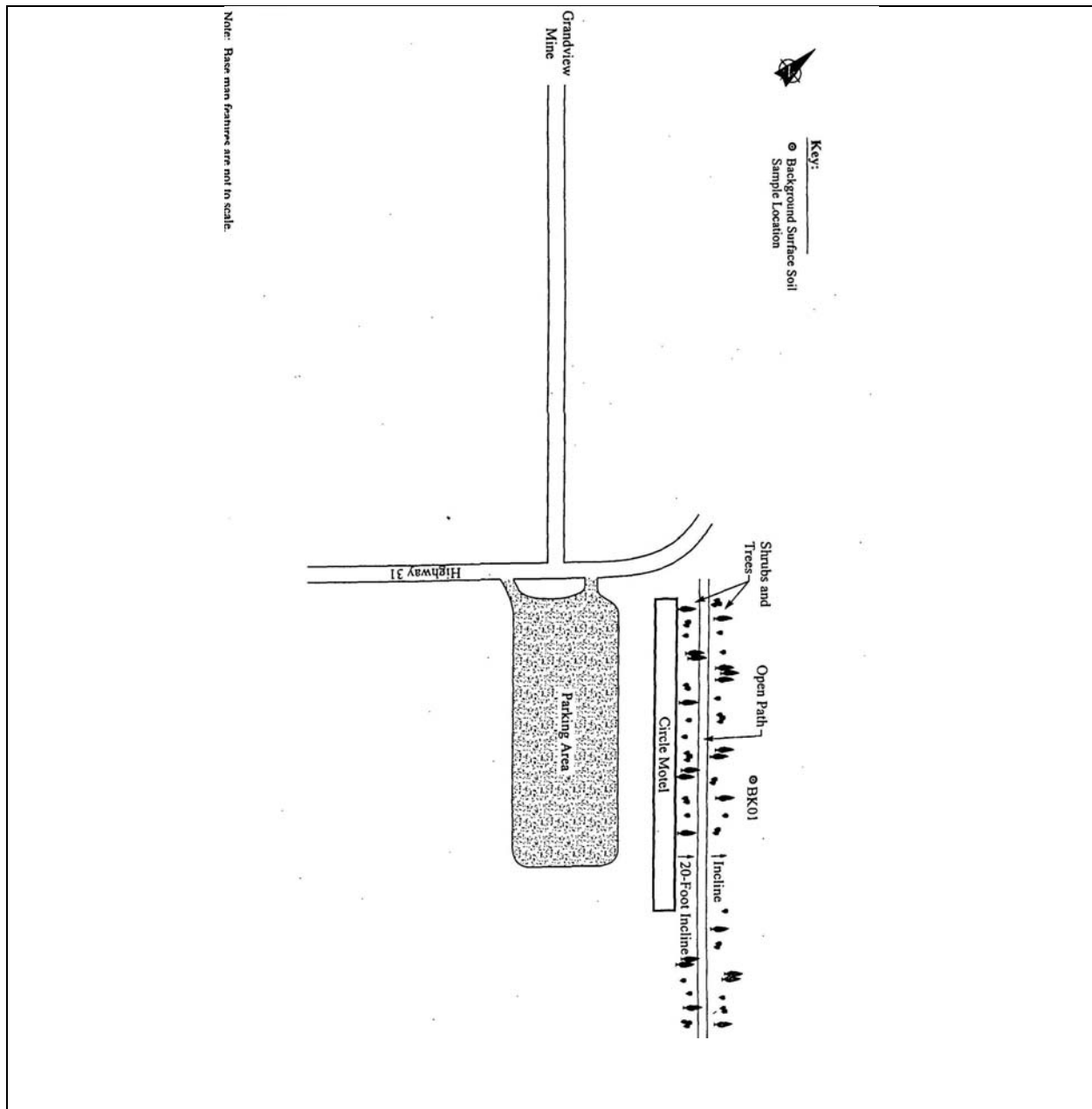
3.0 SUMMARY OF PREVIOUS INVESTIGATIONS

3.1 Grandview Mine Preliminary Assessment/Site Inspection – 2001

In October 2000, the EPA conducted a combined Preliminary Assessment and Site Inspection (PA/SI) at the Upper Level. This event included the collection of samples from potential sources including a suspected tailings pile, a waste rock pile area, and an area where abandoned containers and drums existed prior to their removal by Washington Resources (E & E, 2001). In addition, off-site locations were identified as possible receptors of contamination and where samples were also collected from including groundwater wells, an unnamed spring, a former waste water drainage ditch, and the Pend Oreille River (refer to Figures 2, 3, 4, and 5).

Arsenic, cadmium, copper, lead, selenium, and zinc were detected within these samples at levels exceeding one or more of the following guidelines: the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Soil Cleanup Level for Industrial Properties; the EPA Region 6, 2007 Human Health Medium Specific Screening Levels (HHMSSLs); the EPA Current National Recommended Water Quality Criterion; Ecology Sediment Quality Standard (WAC 173-204-320); and the Ecology Sediment Cleanup Screening Level/Minimum Cleanup Level (WAC 173-204-420/WAC 173-204-520) (Appendix I).

In addition, radionuclides were detected within samples collected from the above mentioned sources and receptors. Results were compared to the EPA's U.S. Background Levels in Soil (Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A] September 1994) (Appendix I). According to this PA/SI report, no known previous environmental investigations have occurred at the site (E & E, 2001).



Metaline Falls, Pend Oreille County, Washington

DATE: 02/20/2001

SCALE: Not to Scale

SOURCE: E&E PA/SI Report 2001



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FIGURE 2

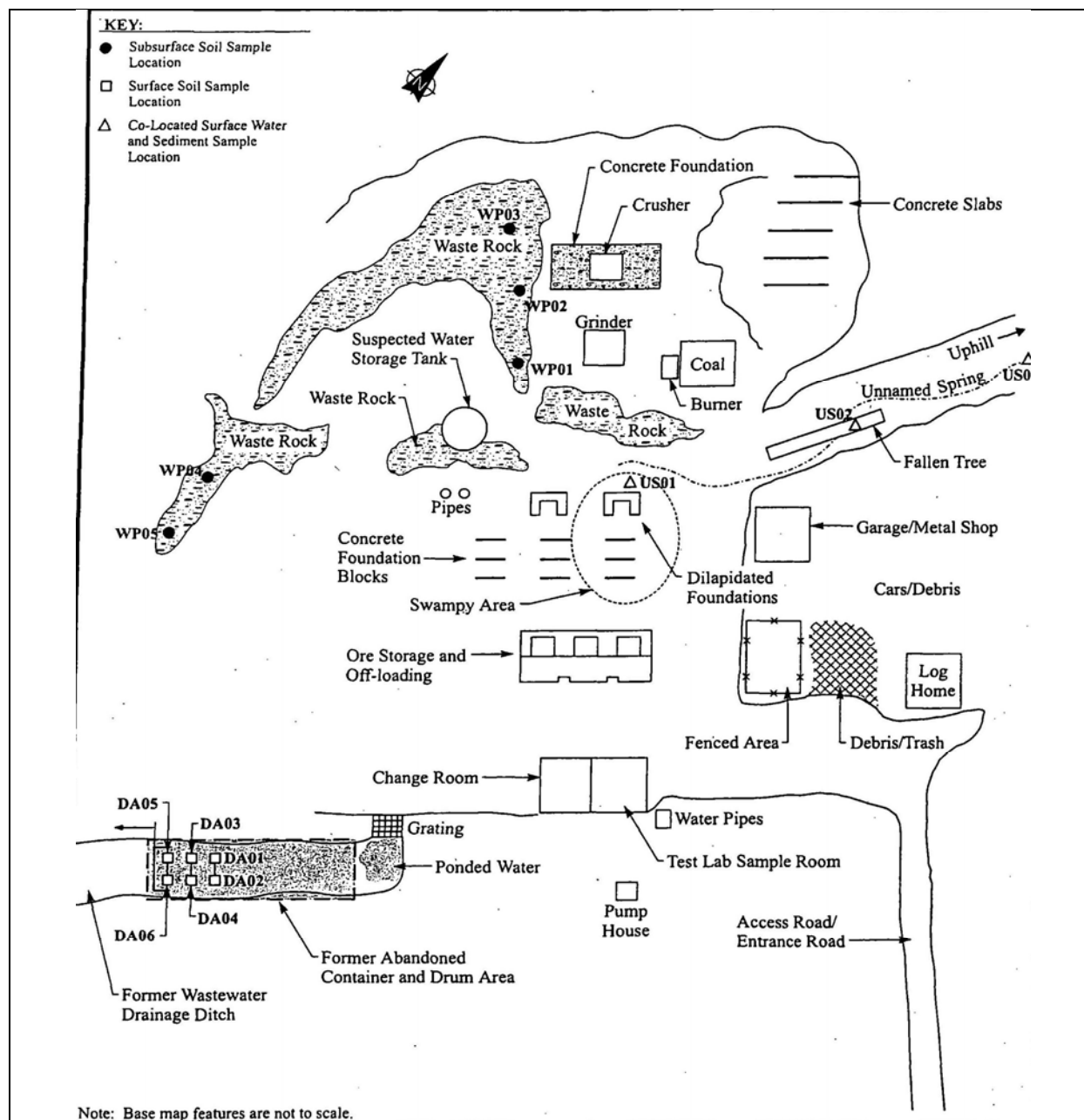
Title: Background Surface Water Sample Locations

Site: Pend Oreille Village

City: Metaline Falls

State: Washington

TDD: 07-06-0005



Metalline Falls, Pend Oreille County, Washington

DATE: 02/20/2001

SCALE: Not to Scale

SOURCE: E&E PA/SI Report 2001



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FIGURE 3

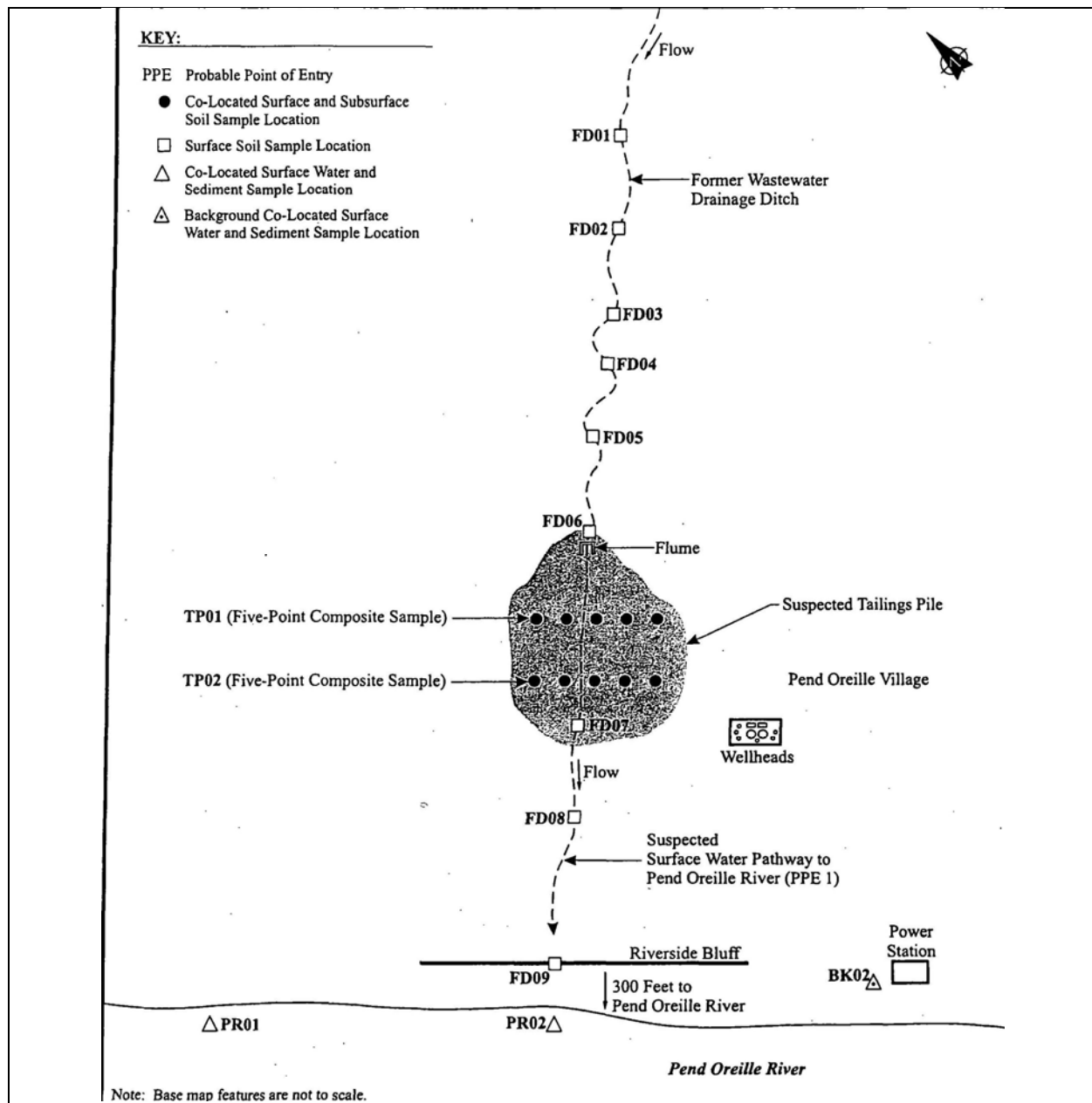
Title: Sample Location Map Grandview Mill

Site: Pend Oreille Village

City: Metalline Falls

State: Washington

TDD: 07-06-0005



Metaline Falls, Pend Oreille County, Washington

DATE: 02/20/2001

SCALE: Not to Scale

SOURCE: E&E PA/SI Report 2001



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FIGURE 4

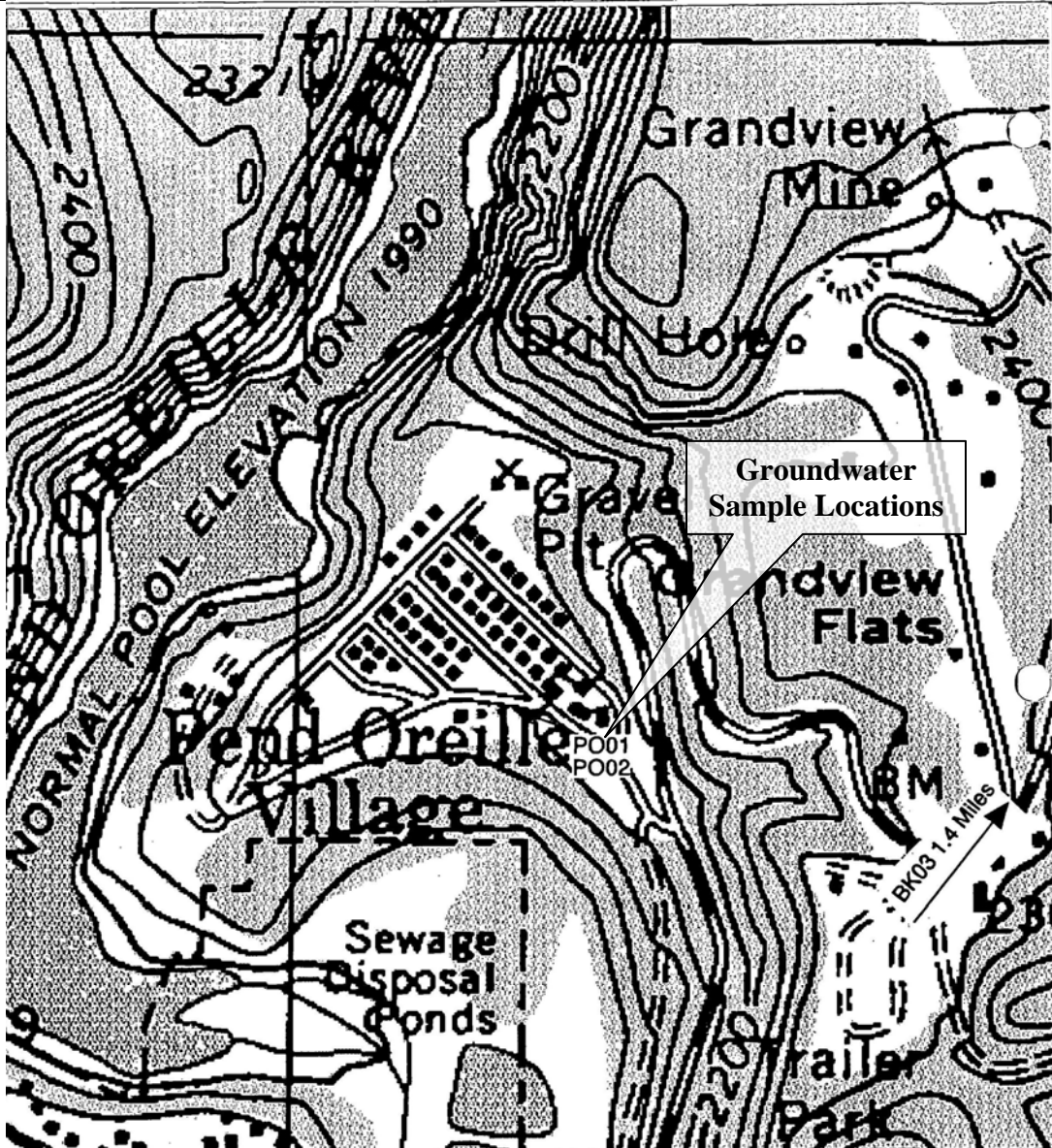
Title: Sample Location Map PPE to Pend Oreille River

Site: Pend Oreille Village

City: Metaline Falls

State: Washington

TDD: 07-06-0005



Metline Falls, Pend Oreille County, Washington
DATE: 02/20/2001
SCALE: Scale Approximated
SOURCE: E&E PA/SI Report 2001



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Contract No.: EP-S7-06-03

FIGURE 5

Title: Groundwater Sample Location Map
Site: Pend Oreille Village
City: Metline Falls
State: Washington
TDD: 07-06-0005

3.2 Preliminary Assessments and Site Investigations Report – Lower Pend Oreille River Mines and Mills – 2002

In June 2001, the EPA investigated potential contaminant sources to the lower reach of the Pend Oreille River. The Confederated Tribes of the Colville Indian Reservation identified 21 mines and mills, including the Upper Level Site/Grandview Mill, for EPA to assess under CERCLA (Cawston, 1999; Passmore, 2000). Between June 17 and 30, 2001, sampling was performed at five of the 21 mines and mills (E & E, 2002). Samples were collected from surface water and sediment at the probable points of entry (PPE) from the Upper Level between the Pend Oreille Mine and Mill (located approximately two miles north of Metaline Falls) and the co-located surface water and sediment background samples—located on the Pend Oreille River up-gradient of the Josephine Mine, the Upper Level, and the Pend Oreille Mine/Mill. Lead and zinc were found within the samples at elevated concentrations, exceeding the EPA's Current National Recommended Water Quality Criterion and Ecology Sediment Quality Standard (see Appendix I). No additional samples were collected from the Grandview Mine and Mill during this PA/SI.

3.3 Grandview, Josephine, and Pend Oreille Mines/Mills Trip Report – 2002

On 22 July 2002, the EPA, Bureau of Land Management (BLM), and START-2 visited the Upper Level of the Grandview Mine and Mill. A visual inspection of the property and surrounding area was performed, and on-site field screening was conducted by BML using a Field Portable X-Ray Fluorescence (FPXRF) instrument. Locations screened included the waste rock area west of the caretaker's house; an area south of the caretaker's house atop an approximately 20-foot-high pile of waste rock; on the west side of a former truck loading shed foundation (EPA, 2002).

The results of the FPXRF screenings showed lead levels in exceeding both the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses and for Industrial Properties and the HHMSSL (Appendix B).

3.4 Grandview and Josephine Mines Removal Assessment Report – 2003

On 18 August 2003, the EPA, BLM, and START-2, returned to the Upper Level of the Grandview Mine and Mill to perform a second assessment consisting solely of a site reconnaissance. No samples were collected nor was any field screening performed during this assessment.

4.0 FIELD SAMPLING EVENT – 2007

This section outlines field observations and sampling activities conducted at the Sites as part of the RA that took place during the week of 13 August 2007, by TechLaw START-3. Individual subsections address the sampling investigation and rationale for specific activities. The investigation was conducted in accordance with the EPA-approved Site Specific Sampling Plan (SSSP) dated 10 August 2007. This plan describes in detail the sampling strategy, sampling methodology, and analytical program used to investigate potential hazards. Results from samples collected at the POV were compared to the recommended 250 milligrams per kilogram (mg/kg) cleanup level per the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses.

Results from samples collected at the Upper Level were compared to the MTCA Method A Soil Cleanup Level for Industrial Properties of 1000 mg/kg and the EPA Region 6 HHMSSLs.

Site work began the week of 14 August 2007. The following three analytical screening instruments were used during the investigation: a Ludlum Model 192 micoRTM gamma radiation meter (Ludlum Measurements, Inc., Sweetwater, Texas); an Innov-XTM FPXRF (Innov-X systems, Inc., Woburn, Massachusetts); and a Mini-DataRAM (Thermo MIE, Waltham, Massachusetts).

Photographs depicting sample locations and other relevant information were taken using a digital camera (Appendix C and D). Property sketches were generated to document on-site locations of samples and other features to assist with the preparation of site maps and figures (Appendix A).

4.1 POV Site

This section discusses the residential lots and sampling locations. The residential lots sampled are depicted on Figures A-3 through A-22 (Appendix A) and described in Table 1. Analytical results for each lot sampled are summarized in Table 7, located in Appendix E.

4.1.1 Soil Sampling

During the RA, samples were collected for laboratory analyses to determine if hazardous substances are present in on-site soils. The samples were analyzed through the Contract Laboratory Program (CLP) for target analyte list (TAL) metals. A total of 121 soil samples, including duplicate soil samples, were collected from 20 residential lots within the POV (and the caretaker's residence located at the Lower Level of the Grandview Mine and Mill).

Samples were collected from developed (house or trailer) and undeveloped lots, with front and back-yard sample sets established for each developed lot sampled. Undeveloped lots were regarded as one yard or space. In the case of both developed and undeveloped lots, a sample set consisted of four soil samples comprised of five aliquots, each, collected from the locations, at designated depths below ground surface (bgs). The four sample depths were as follows: 0 to 6-inches bgs, 6 to 12-inches bgs, 12 to 18-inches bgs, and 18 to 24-inches bgs. Each lot was assigned a sample identification (ID) using a schematic that included the site name (POV), the lot and block number, the sample depth, surface (SS) or subsurface (SB) designation, and a sample number (01). All duplicate samples collected were given the sample number 09. A summary of the samples collected from the 20 lots is provided in Table 1.

4.1.2 FPXRF Screening

Gravel driveways from six residential lots at the POV were screened for lead concentrations using an FPXRF instrument. The six gravel driveways were constructed of similar gravel; light gray, silvery gravel containing white bands, and powdery to the touch. (The gravel rocks range from pea-size to 3-inches in diameter and were allegedly brought down from the Upper Level of the Grandview Mine and Mill.) The six driveways showed concentrations exceeding the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses for lead of 250 mg/kg with the field screening results for the six driveways summarized in Table 2.

TABLE 1
POV SITE – SAMPLING SUMMARY

Lot No.	Block No.	Address	No. of Samples Collected
2	1	122 A Street	9*
4	1	Undeveloped	5*
5	1	Undeveloped	4
6	1	Undeveloped	4
3	2	122 & 124 Larsen Boulevard	9*
4	2	Undeveloped	4
7	2	Undeveloped	5*
8	2	161 & 163 A Street	8
9	2	119 A Street	9*
10	2	Undeveloped	4
11	2	Undeveloped	4
12	2	61 A Street	8
1	3	Undeveloped	5*
2	3	Abandon homes	9*
3	3	Undeveloped	5
5	3	95 B Street	9*
6	3	Undeveloped	4
7	3	Undeveloped	5*
3	5	Undeveloped	5*
4	5	Undeveloped	5*
NA	NA	Caretaker	5*

Note: * = Duplicate sample collected from lot

TABLE 2
POV SITE – DRIVEWAY FPXRF SCREENING RESULTS

Location		Address	Lead Screening Results (parts per million)
Lot	Block		
2	1	122 A Street	3,265
8	2	161 & 163 A Street	2,040
9	2	119 A Street	1,981
			2,337
5	3	95 B Street	4,213
6	3	Undeveloped	5,080

The EPA conducted time-critical removal actions at the residential driveways with elevated lead concentrations in September 2007. The driveways were excavated to depths ranging from 6- to 18-inches. FPXRF screening was performed in the bottom of each driveway excavation to verify that remaining contaminant concentrations did not exceed the cleanup level. Thereafter, the driveways were backfilled with clean soil obtained from Dan Dawson Construction Company, Ione, Washington, and graded and compacted for surface water control. Additional information regarding the removal actions can be found in the Final Removal Action Letter Report (December 6, 2007; Document Control Number: TO-001-07-09-0006-DCN119).

4.2 Upper Level Site

This section discusses the sampling locations selected at the Upper Level. The sample locations are depicted on Figure A-24 (Appendix A) and described in Table 3. Analytical results for each sample are summarized in Tables 8 through 10, located in Appendix F.

4.2.1 Soil Sampling

In addition to collecting samples from residential lots at the POV, surface soil samples were collected from the Upper Level Site to determine if hazardous substances are present in on-site soils. These samples were also analyzed through the CLP for TAL metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and gamma spectroscopy (radionuclides). A total of six surface soil samples, including two duplicate soil samples, were collected from the Upper Level Site.

Each sample was assigned an ID using a scheme that included the site name (Upper Level Site [UL]), surface (SS) soil designation, and a sample number (01). The duplicate samples collected were given the sample numbers 05 and 06. Two duplicate samples were required because the samples were sent to different laboratories for analysis. A summary of the samples collected and their locations is provided in Table 3.

TABLE 3
UPPER LEVEL SITE – SOIL SAMPLING SUMMARY

Sample ID	Sample Location
UL-SS-01	North of blacksmith/machine shop, near rusted-out, cylindrical tank and electric cars
UL-SS-02	East of concrete pad; north of diamond core storage shack
UL-SS-03	East of blacksmith/machine shop; south of diamond core shack; adjacent to gravel pad
UL-SS-04	Northwest of intersection of north access road and gravel pad; south of diamond core storage shack; southwest of brush pile
UL-SS-05	Duplicate of sample UL-SS-01; analyzed for TAL metals, VOCs, SVOCS, and pesticides/PCBs
UL-SS-06	Duplicate of sample UL-SS-06; analyzed for radionuclides

4.2.2 FPXRF Screening

Four locations at the Upper Level were screened using the FPXRF. All four locations yielded concentrations exceeding the MTCA Method A Soil Cleanup Level for Industrial Properties for lead of 1,000 mg/kg. The field screening results for the Upper Level Site are summarized in Table 4.

TABLE 4
THE UPPER LEVEL SITE – FPXRF SCREENING RESULTS

Location	Lead Screening Results (parts per million)
Blacksmith/Machine Shop	3,083
	3,059
Magazine Area	1,645
Diamond Core Storage Shack	5,114
	2,288
Electric Cars	2,588
	1,801

5.0 INVESTIGATION-DERIVED WASTE

Investigation-derived waste (IDW) generated during the RA sampling efforts consisted of disposable sampling equipment and personal protective equipment and minimal quantities of sampling equipment rinsate. Solid IDW was disposed as non-hazardous municipal waste while

the rinsate was collected at different intervals and was poured on the ground away from any residence or play area.

6.0 SAMPLE COLLECTION AND ANALYTICAL PARAMETERS

START-3 personnel collected a total of 36 surface soil and 91 subsurface soil samples (including duplicate samples) from 20 lots within the POV and from four locations within the Upper Level. Collection of the POV samples followed the Superfund Lead Contaminated Residential Sites Handbook (the Handbook) (EPA, 2003). In addition, START-3 adhered to TechLaw's Standard Operating Procedures (TLSOPs) for sample collection, including: Field Activity Logbooks (TLSOP, 03-01-02), Sample Packaging (TLSOP, 04-02-00), Soil Sampling (TLSOP, 07-03-00), VOC Soil and Sediment Sampling (TLSOP, 07-03-00), Borehole Sampling (TLSOP, 07-05-01), and Sampling Equipment Decontamination (TLSOP, 02-03-01). Regarding the use of field instruments, the following guidance documents were followed: X-Ray Fluorescence (XRF) – EPA SW-846 Method 6200, TechLaw Environmental Services Assistance Team (ESAT) XRF SOP (FASP-049), and the manufacturer's instructions.

The lots sampled and corresponding sampling locations are depicted in the figures provided in Appendix A, and summarized in Table 7, located in Appendix E. Sample locations and results from the caretakers residence at Grandview Mine and Mill and the Upper Level are collocated in Appendices A and E.

6.1 Sample Collection Methods

The following sections describe in further detail the soil sampling methods utilized within the Sites. Samples of any type were not collected from properties without obtaining written or verbal access from the owner.

6.1.1 Composite Soil Sampling

Composite soil samples consisting of up to five aliquots were collected from the residential lots comprising the POV Site. Auger refusal was met at several soil boring locations due to the presence of large rocks natural to the area's geology; therefore, five aliquots were not collected for each sample depth. Duplicate soil samples were collected from the same aliquot locations using excess soil and were homogenized with the original sample prior to its placement in an additional sample jar.

Four composite samples were collected from each location: 6-inches bgs, 6 to 12-inches bgs, 12 to 18-inches bgs, and 18 to 24-inches bgs. Although the Handbook recommends adding additional quadrants for residential yards greater than 5,000 square feet, the field sampling protocol was altered. A single, 5-point composite sample was collected from each of the front and back yards (regardless of size), at each of the four depth intervals, from each developed lot. Open areas not covered with pavement were sampled. A minimum of one, 5-point composite sample was collected from each undeveloped lot. At larger, undeveloped lots, a sample comprised of up to 10 aliquots was collected to obtain a better representation of the lot. Sample bore holes were backfilled with the removed soil or potting soil and the turf, if present, to minimize the effect of field activities.

Stainless steel, handheld augers were utilized to bore to the desired sample depths. A clean auger bucket was used to collect the soil sample at each of the four depths. The soil from each aliquot was placed directly from the auger bucket into stainless steel bowls for homogenization. The soil samples were homogenized and collected with disposable polystyrene (poly) spoons and placed into the appropriate pre-cleaned sampling containers. One, 8-ounce glass jar was collected for each sample for TAL metals analysis. Duplicate sample volumes required an additional 8-ounce jar per sample. No additional sample volume was required for matrix spike and matrix spike duplicate (MS/MSD) samples.

6.1.2 Grab Soil Sampling

Four surface soil grab samples were collected from the Upper Level Site. In addition, two duplicate soil samples were collected from two locations and sent to different laboratories for various analyses. The duplicate samples were collected from the same sample locations using excess soil and were homogenized with the original sample prior to its placement in an additional sample jar.

Samples collected for VOC analyses were placed directly into the appropriate containers using direct push, 5-gram Core N' One™ samplers. Three, 5-gram Core N' One™ samplers were necessary for each sample. In addition, one, 2-ounce glass jar with a Teflon lined lid was collected per sample for percent moisture. Extra sample volume was collected for the duplicate sample; three additional Core N' One™ samplers and one 2-ounce glass jar. An additional double volume was required for the MS/MSD samples; six additional Core N' One™ samplers. The 2-ounce jar for percent moisture was not required for the MS/MSD samples.

For TAL metals, SVOCs, and pesticides/PCBs analysis, the soil was placed directly from the ground into stainless steel bowls for homogenization. The soil samples were homogenized and collected with disposable poly spoons and placed into the appropriate pre-cleaned sample containers. Three, 8-ounce glass jars were collected per sample: one jar for TAL metals; one jar for SVOCs; and one jar for pesticides/PCBs. Duplicate sample volumes required three additional 8-ounce jars per sample. No additional volume was required for MS/MSD samples.

Five samples (four samples and one duplicate) were also collected for radionuclide analysis and sent to EPA's National Air and Radiation Environmental Laboratory (NAREL). The soils were collected using a poly scoop and placed directly into the plastic sample containers provided by NAREL. Between 300 grams (g) and 500 g of soil were required for NAREL to perform the analysis. Each container was placed onto a digital scale and tared before weighing out the soil material during sample collection. An additional 300 g to 500 g were collected for the duplicate; no additional volume was necessary for the MS/MSD sample.

6.1.3 FPXRF Screening

During the RA, it was observed that several driveways within the POV were constructed with similar gravel. The gravel appeared light gray to silver with bands of white, was smooth and un-weathered, powdery to the touch. According to a POV resident, the gravel was brought down from the Grandview Mine (TechLaw No. 1, 2007). Six driveways constructed from the suspect gravel were identified for field screening of lead concentrations using the FPXRF. A randomly

selected location within the visible boundaries of each driveway was screened and a disposable, gallon-size zipper locking bag was placed on the ground surface to act as a barrier between the potentially contaminated gravel and the FPXRF. No gravel samples were collected for laboratory analysis.

The FPXRF was used to screen soil and gravel for lead, although other metals could be detected in addition to lead during the screening process. At the beginning of each day, the FPXRF was self-calibrated and calibrated to the National Institute of Standards and Technology (NIST) Standards. The FPXRF was then placed against the soil surface, the trigger activated, and the instrument left in place for sixty seconds. The results for each sample screened were data logged (electronically stored) within the instrument's personal digital assistant (PDA) component in both spectrum and spreadsheet formats. These results contained information about the types of metals found in the soil and their respective concentrations (measured in parts per million, the equivalent of mg/kg).

6.2 Sample Preservation and Storage

Grass, leaves and other vegetative material, rocks, and other debris unsuitable for analysis were removed as much as practicable from samples before being placed into sample containers. Samples were stored on ice in coolers at an approximate temperature of 4 degrees Celsius while continuously maintained under the custody of START-3 personnel until shipped to the laboratory.

6.3 Analytical Parameters/Qualifiers

Samples collected for VOCs, SVOCs (including pesticides/PCBs), and TAL metals were analyzed by Contract Laboratory Program Analytical Services (CLPAS) during the August 2007 sampling event. Analytical methods for VOC and SVOC were completed using EPA Method SOM01.1 by ChemTech Consulting Group in Mountainside, New Jersey. Analytical methods for inorganic parameters were completed using EPA Method ILM05.3 by Bonner Analytical in Hattiesburg, Mississippi. Radionuclide samples were analyzed by NAREL in Montgomery, Alabama, for gamma spectroscopy under the guidelines established in AM/SOP-12, AM/SOP-13, AM/SOP-14, and AM/SOP-18. Samples collected during the August 2007 sampling event were analyzed by EPA's Manchester Environmental Laboratory (MEL) in Port Orchard, Washington. Analytical methods for inorganic parameters were completed using EPA SW-846 Methods 6010C/6020A.

All data from analyses performed were reviewed and validated by an EPA or TechLaw chemist. Data qualifiers were applied, as necessary, according to statements of work, analytical methods, and the following guidance:

- U.S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA, 2002b).
- U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA, 1999a).

- MEL Quality Assurance Manual and Standard Operating Procedures.
- U.S. EPA National Air and Radiation Environmental Laboratory Quality Assurance Project Plan.

Copies of the data Quality Assurance (QA) memoranda are included in Appendices G and H. The summary analytical tables are presented as Appendices E and F; the complete set of analytical data is presented as Appendices G and H. During the validation process, qualifiers were applied to organic and inorganic data, as appropriate. These qualifiers and their definitions are listed below.

U: Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for dilutions and moisture content.

J: Indicates the compound or analyte was analyzed for and detected. However, the associated value is considered to be an estimate due to identified Quality Control (QC) deficiencies. Data flagged with a “J” may be usable for decision-making purposes, depending on the data quality objectives (DQOs) of the project.

UJ: Indicates the compound or analyte was analyzed for and not detected. However, the associated detection limit is considered to be an estimate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NJ: Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N: Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (usable for decision-making purposes).

R: The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.

H High bias

K: Unknown bias

L: Low bias

Q: Detected concentration is below the method reporting limit/contract required quantitation limit, but is above the method detection limit.

For gamma spectroscopy analysis, nuclides that are not detected do not appear in the analysis summary report, with the exception of Barium (Ba)-140, Cesium (Cs)-137, Iridium (Ir)-131, Potassium (K)-40, Radon (Ra)-226, and Ra-228. If one of these six nuclides is undetected, NAREL reports it as ND or “Not detected” and provides a sample-specific estimate of the minimum detectable concentration (MDC).

7.0 SOIL SAMPLING ANALYTICAL RESULTS/DISCUSSION

This section discusses the areas evaluated and analytical results. Soil sampling locations are depicted on Figures A-3 through A-22, located in Appendix A. Inorganic analytical results for the POV Site are summarized in Table 7. The Upper Level Site inorganic, organic and radionuclide analytical results are summarized in Tables 8 through 10 respectively. Tables 7 through 10 are presented in Appendices E and F.

7.1 Applicable or Relevant and Appropriate Requirements (ARARs) Exceedances

Soil analytical results for TAL metals, VOCs, and pesticides/PCBs were compared to the EPA Region 6 HHMSSLs and the Ecology MTCA cleanup levels for unrestricted land use and industrial properties. The samples analyzed for radionuclides were compared to the EPA U.S. Background Levels in Soil (Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994).

Data summary tables for all the soil samples collected are provided in Appendices E and F. Exceedances of the aforementioned ARARs are documented for each sample. Concentrations of constituents exceeding the EPA Region 6 HHMSSLs are shaded in the summary data tables. Constituents that are elevated above the MTCA Method A Soil Cleanup Levels are in bold in the tables. The complete set of raw analytical data sheets are presented as Appendices G and H.

7.2 Soil Sampling Results

The following discussion of hazardous constituents detected at elevated levels in samples collected at the POV and Upper Level Sites includes only those hazardous constituents that may be associated with site operations and those hazardous constituents that may pose a threat to human health or the environment. Refer to Appendices H and I for the raw analytical data.

7.2.1 POV Site Soil Results

Highlights from the analytical results are summarized below:

- Lead and cadmium were the inorganic constituents detected at elevated concentrations in soil samples collected from the POV. Samples from five lots contained concentrations of lead that exceeded one or more ARARs. Three of the lots only had lead exceedances in surface soil samples; two lots had lead exceedances in surface and subsurface soil samples. Samples at five lots contained six surface soil and six subsurface soil samples that yielded concentrations of cadmium exceeding the MCTA Cleanup Levels for unrestricted land use. Table 5 below provides a summary of the elevated soil concentrations. The complete data table for the POV is presented in Appendix E, Table 7.
- Based on EPA Region 10 policy, evaluation of aluminum, calcium, iron, magnesium, potassium, and sodium (common earth crust elements) is beyond the scope of this report. For this reason, these elements are not discussed or summarized in Appendix E, Table 7.

TABLE 5
POV SITE – ARAR EXCEEDANCES

ARARs			Lead (mg/kg)	Cadmium (mg/kg)
EPA Region 6 HHMSSL			400	39
MTCA Cleanup Level for Residential Soil			250	2
Sample ID	Lot No.	Block No.	Lead (mg/kg)	Cadmium (mg/kg)
PO-21-A-SS-01	2	1	-	-
PO-21-A-SS-05			-	-
PO-41-A-SS-01	4	1	-	-
PO-41-B-SB-02			-	-
PO-51-A-SS-01	5	1	357	6.8
PO-51-B-SB-02			251	5.8
PO-51-C-SB-03			292	3.2
PO-32-A-SS-01	3	2	290 J	8.2
PO-72-A-SS-01	7	2	-	-
PO-72-B-SB-02			-	-
PO-92-A-SS-05*	9	2	-	-
PO-122-A-SS-01	12	2	280 J	6.6
PO-122-B-SB-02			-	9.4
PO-122-C-SB-03			450 J	16.1
PO-122-D-SB-04			-	5.2
PO-23-A-SS-01	2	3	251	-
PO-23-D-SB-04			-	-
PO-23-D-SB-08			-	-
PO-23-D-SB-09*			-	-
PO-53-A-SS-01	5	3	-	5.4
PO-53-B-SB-09*			-	-
PO-45-D-SB-04	4	5	-	-
GV-CTR-A-SS-01	Caretaker's Residence		414	6.8 J
GV-CTR-B-SB-02			-	2.6 J
GV-CTR-A-SS-09*			399	7.5 J

Notes:

PO	Pend Oreille Village	SS	Surface soil sample
A	0 – 6-inches bgs	SB	Subsurface soil sample
B	6 – 12-inches bgs	GV	Grandview Mine
C	12 – 18-inches bgs	CTR	Caretaker's Residence
D	18 – 24-inches bgs	-	Concentration is below ARARs
J	Reported value is estimated	*	Duplicate Sample

- The soil samples collected at the POV were not analyzed for VOCs, SVOCs, pesticides/PCBs, or radionuclides.

7.2.2 Upper Level Site Soil Results

Highlights from the analytical results from the Upper Level Site are summarized below:

- Lead was detected at concentrations exceeding ARARs in four surface soil samples collected from the Upper Level Site. Arsenic and cadmium were also detected at concentrations exceeding the MTCA Method A Soil Cleanup Levels for Industrial Properties in several samples. One sample yielded an arsenic concentration that exceeded the EPA Region 6 HHMSSL as well. Sample UL-SS-04 was collected northwest of the access road and gravel pad intersection and contained elevated concentrations of all three above-mentioned inorganics. Table 6 below provides a summary of the elevated concentrations in the surface soil samples. The complete inorganic data summary table for the Upper Level Site is presented in Appendix F, Table 8.
- One VOC, methylene chloride, was detected at a concentration exceeding the MTCA Cleanup Level for industrial properties from one surface soil sample collected from the Upper Mine. Sample UL-SS-02, collected north of the diamond core storage shack, contained 23 JH micrograms per kilogram (ug/kg) of methylene chloride. The complete organic data summary table for the Upper Level Site is presented in Appendix F, Table 9.
- No SVOC, pesticide, or PCB constituents were detected at elevated concentrations that exceeded the ARARs. Table 9 in Appendix F provides a summary of the organic data.
- The radionuclides were evaluated against the EPA's U.S. Background Levels in Soil (Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A], September, 1994). Several radionuclides, protactinium-231, lead-210, radium-226, and uranium-235, were detected at elevated concentrations exceeding three times the typical background levels. Sample UL-SS-03, located east of the blacksmith/machine shop was the only soil sample not containing a radionuclide exceedance. Protactinium-231 was detected at an elevated concentration in sample UL-SS-04. One sample, UL-SS-06, contained lead-210 at an elevated concentration. Radium-226 and uranium-235 were detected in four of the five samples collected from the Upper Level Site. Table 10 in Appendix F provides a summary of the radionuclide data.

TABLE 6
THE UPPER LEVEL SITE –INORGANIC ARAR EXCEEDANCES

ARARs		Lead (mg/kg)	Arsenic (mg/kg)	Cadmium(mg/kg)
EPA Region 6 HHMSSL		400	22	39
MTCA Cleanup Level for Industrial Properties		1,000	20	2
Sample ID	Location	Lead (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)
UL-SS-01	North of blacksmith/machine shop, near rusted-out, cylindrical tank and electric cars	6,180	-	22.8
UL-SS-02	East of concrete pad; north of diamond core storage shack	5,060	20.5	9.7
UL-SS-03	East of blacksmith/machine shop; south of diamond core shack; adjacent to gravel pad	-	-	3
UL-SS-04	Northwest of intersection of north access road and gravel pad; south of diamond core storage shack; southwest of brush pile	8,990	73.6	32.1
UL-SS-05	Duplicate of sample UL-SS-01	5,510	-	29.2

Notes: UL Upper Level Site

SS Surface soil sample

- Concentration is below ARARs

8.0 QUALITY ASSURANCE/QUALITY CONTROL

The QA/QC measures established for this RA were developed in accordance with the TechLaw, Inc. *Program Quality Assurance Project Plan for Sample Collection and Analysis for START Sampling Activities, EPA Region 10* (dated April 2007). During the August 2007 sampling event, 120 surface soil, and three water QC samples were analyzed for TAL Metals at the POV site. Also during the August 2007 event, a total of six surface soil samples and two water QC samples were collected for analyses. Four surface soils and one water QC sample were analyzed for VOCs, SVOCs, SVOC, pesticides and PCBs, TAL metals, and gamma spectroscopy. One duplicate surface soil sample was collected for VOCs, SVOCs, and TAL metals, while one duplicate surface soil sample was also collected for gamma spectroscopy analysis, and one water QC sample was collected for only VOCs. Organic analysis was performed in accordance with the *USEPA Contract Laboratory Program Statement of Work for Trace Organic Analysis SOM01.1* (EPA, 2005). Inorganic analysis was performed in accordance with *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis ILM05.3* (EPA, 2004). Specific QA/QC requirements for analyses of the POV Site and Upper Level Site samples are presented in the CLP statement of work and the project SSSP (TechLaw, 2007).

All data from analyses performed were reviewed and validated by an EPA or TechLaw chemist. Data qualifiers were applied, as necessary, according to statements of work, analytical methods, and the following guidance:

- U.S. EPA CLP National Functional Guidelines for Inorganic Data Review (EPA, 2002b).
- U.S. EPA CLP National Functional Guidelines for Organic Data Review (EPA, 1999a).
- MEL Quality Assurance Manual and Standard Operating Procedures.

Copies of the data QA memoranda are included in Appendices G and H.

8.1 Satisfaction of Data Quality Objectives

The DQOs for the Sites were established using the *Guidance for the Data Quality Objective Process* (EPA, 2000). The data quality achieved during field sample collected and sample analyses conducted at the laboratories produced sufficient data to meet DQOs established in the SSSP (TechLaw, 2007).

8.2 Quality Assurance/Quality Control Samples

Samples were collected or processed in the field to assist analysis of QA/QC measures. QC samples included temperature blanks, fifteen field duplicate, one trip blank, and five equipment rinsate blanks. One temperature blank sample per shipment cooler was submitted; trip blank samples were submitted for VOC analysis only. QC samples for all analyses included MS/MSD at a rate of one sample per 20 sample media.

8.3 Project-Specific Data Quality Objectives

The following describes the laboratories' ability to meet project DQO for precision, accuracy, and completeness, and the overall success of the field team and the laboratories at meeting project DQO for representativeness and comparability. The laboratory and field team were able to meet the project DQO for all samples, with the exception of antimony. Antimony values were qualified R (rejected) due to matrix spike recoveries outside the acceptable range.

8.3.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples measure the precision of the analytical method.

The relative percent difference (RPD) values were reviewed for all samples. No samples were qualified solely on laboratory QC outliers.

8.3.2 Accuracy

Accuracy measures the reproducibility of sampling and analytical methodology. Laboratory accuracy is defined as the spike percent recovery (%R).

Spike %Rs were met for all elements with the exception of antimony, manganese, selenium. Antimony was qualified as J or R; manganese and selenium data were qualified J or UJ. These data may be biased low; all data for sample data group (SDG) MJ8A75 may be biased low.

8.3.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by the total possible data). Laboratory data were reviewed for data validation and usability.

The total number of data points evaluated was 946. Of those points, 14.4% of those were qualified due to failing internal standard; 1.1% of those were qualified due to calibration, 0.7% of those were qualified due to extremely low and unacceptable instrument response.

8.3.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point or environmental condition. The number and selection of samples were determined in the field to account accurately for Site variations and sample matrices. The DQO for representativeness of 90% was met.

8.3.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this Site followed applicable field sampling techniques and specific analytical methodology as applied to groundwater, sediment, and soil. The DQO for comparability was met.

8.3.5.1 Laboratory Quality Assurance/Quality Control Parameters

Routine internal QC checks are a function of laboratories conducting QC checks in accordance with the EPA-approved analytical methods. The laboratories have a QC program it uses to ensure the reliability and validity of the analyses performed at the laboratory.

8.3.6 Holding Times/Temperatures

The holding time from the date of collected to the date of digestion and analyses were met for all elements as defined in the SSSP. No samples were qualified based solely on exceeding holding times or temperature requirements.

8.3.7 Laboratory Blanks

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of calcium, silver and sodium. Affected samples were qualified (U) for calcium, silver and sodium.

8.3.8 Equipment Rinsate Blanks

Four equipment rinsate blanks were collected during the August 2007 sampling event; three at the POV Site and one for Upper Level Site. No analytes were detected within equipment rinsate blanks collected in the field.

8.3.9 Trip Blanks

Trip blanks were provided at the required rate of 1 per 10 samples for organic analysis. No trip blanks were provided for inorganic or gamma spectroscopy analysis. Trip blank requirements were met.

9.0 SUMMARY

9.1 POV Site

In August 2007, the EPA and START-3 collected 120 soil samples from twenty residential lots and analyzed for TAL metals. Five residential lots contained cadmium and lead at elevated concentrations compared to the Ecology MTCA Method A Soil Cleanup Level for Unrestricted Land Uses. In addition, one of the five residential lots contained lead at a concentration exceeding the EPA Region 6 HHMSSL for lead. Further CERCLA or other response actions are recommended.

9.2 Upper Level Site

In August 2007, the EPA and START-3 collected soil samples from four locations within the Upper Level Site and analyzed for TAL metals, VOCs, SVOCs, pesticides, PCBs, and radionuclides. Three of the four sample locations contained lead at concentrations exceeding both the Ecology MTCA Method A Soil Cleanup Level for Industrial Properties and the EPA Region 6 HHMSSL. In addition, all four sample locations contained cadmium exceeding the Ecology MTCA Method A Soil Cleanup Level for Industrial Properties. Arsenic was found at two locations exceeding the Ecology MTCA Method A Soil Cleanup Level for Industrial Properties, and at one location arsenic exceeded the EPA Regions 6 HHMSSL.

In one sample, a VOC (methylene chloride) was detected at a concentration exceeding the Ecology MTCA Method A Soil Cleanup Level for Industrial Properties. No SVOC, pesticide, or PCB constituents were detected at elevated concentrations that exceeded the ARARs.

Several radionuclides were detected at elevated concentrations exceeding three times the typical background levels when compared to the EPA's U.S. Background Levels in Soil (Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A], September 1994). The radionuclides include the following: protactinium-231, lead-210, radium-226, and uranium-235. With the exception of Cesium 137, the radionuclides occur naturally and are ubiquitous in the environment, particularly for Pend Oreille County, a mining mineral provenance. Cesium 137 is a remnant of atmospheric fallout associated with Cold War testing of nuclear weapons.

Further CERCLA or other response actions are recommended.

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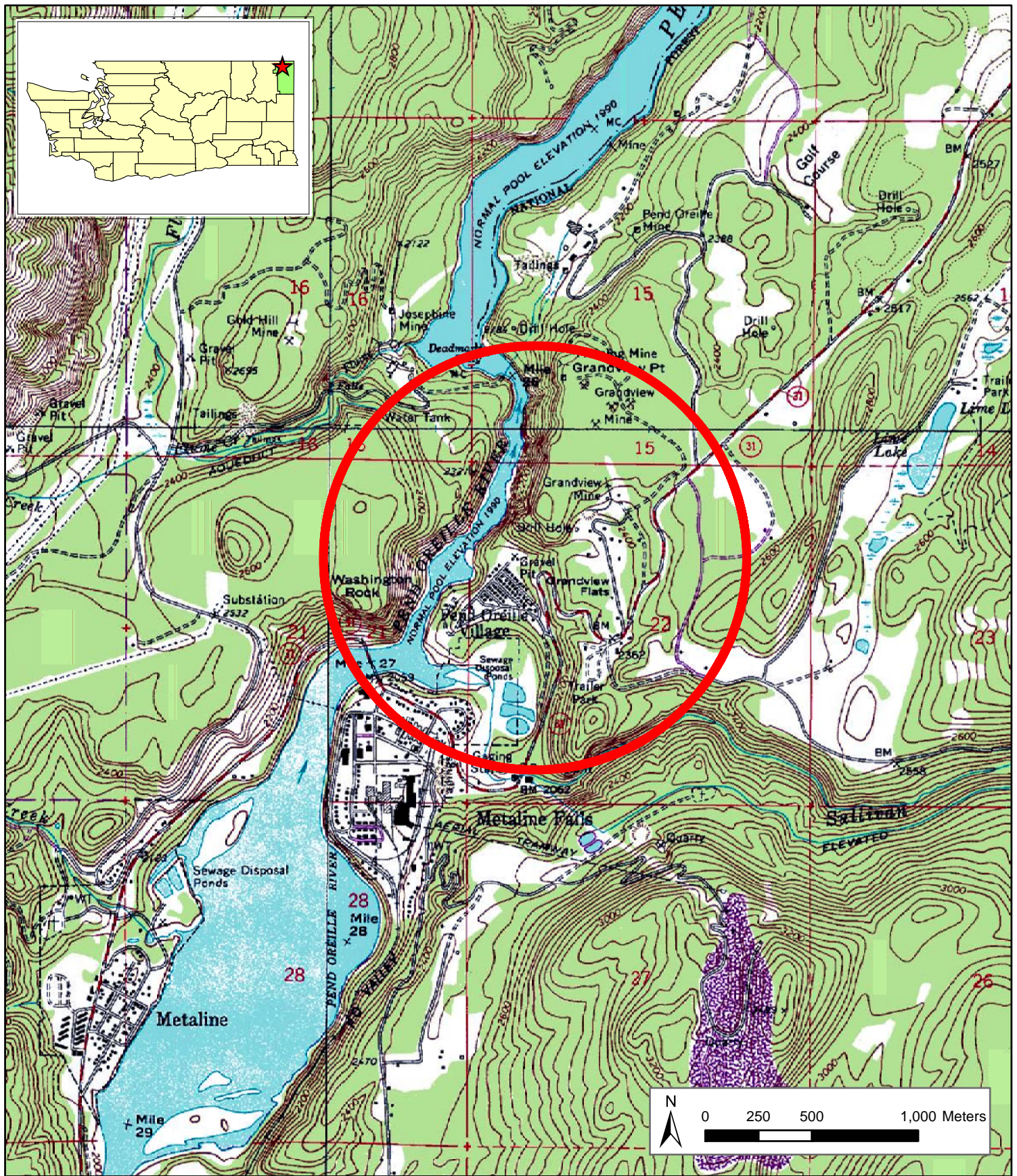
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APPENDIX A

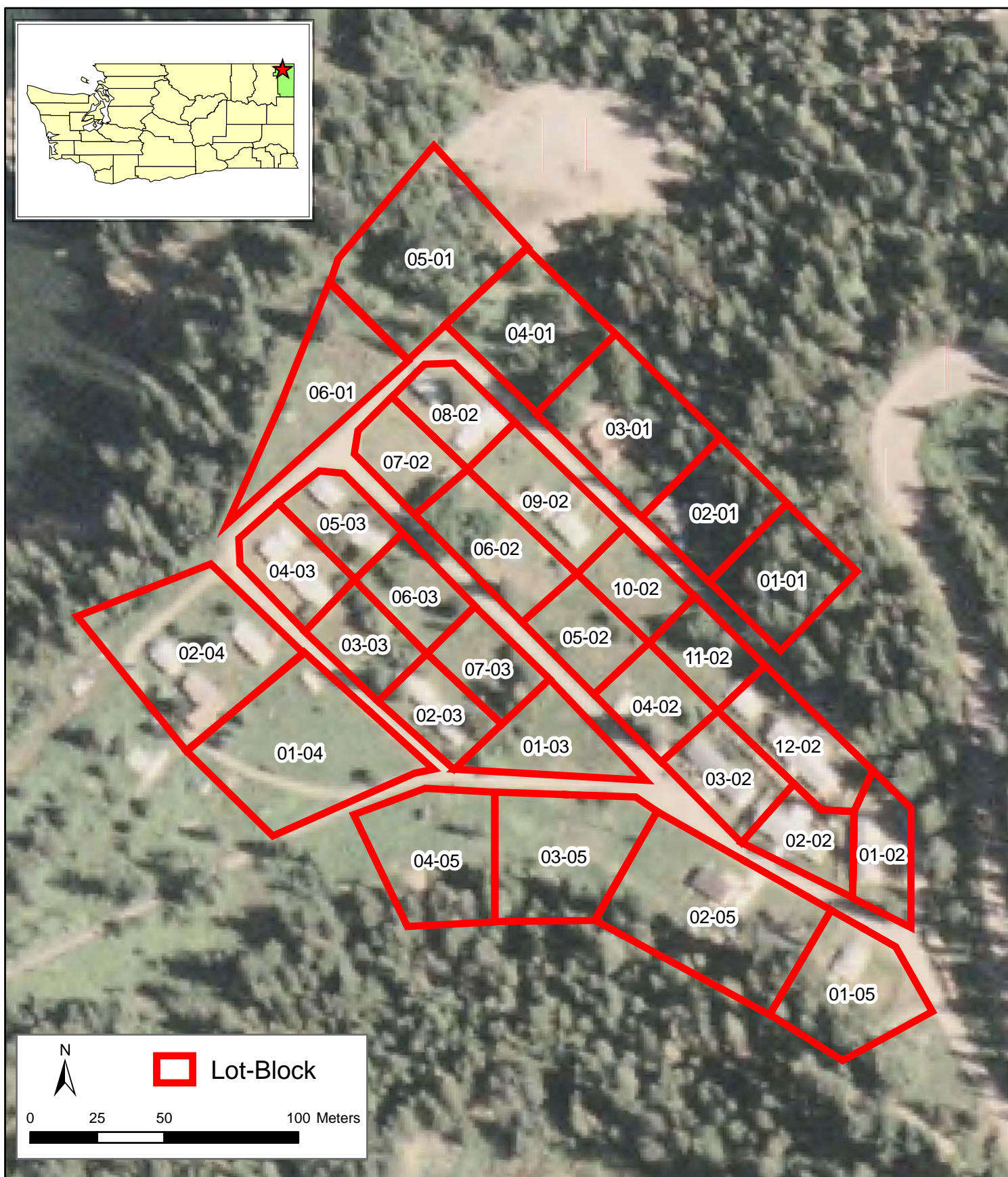
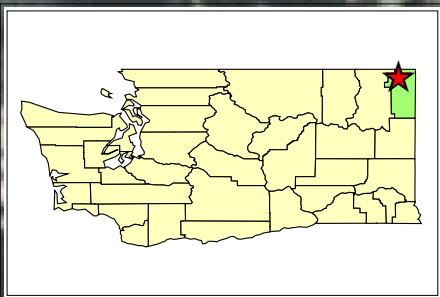
Figures



Source: Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 01/17/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-1
Site Location
Pend Oreille Village
Pend Oreille County, Washington

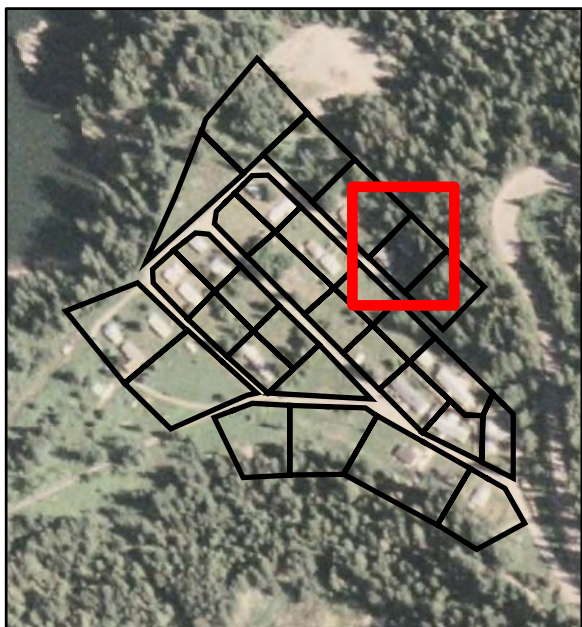


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Lot #10, Section 22,
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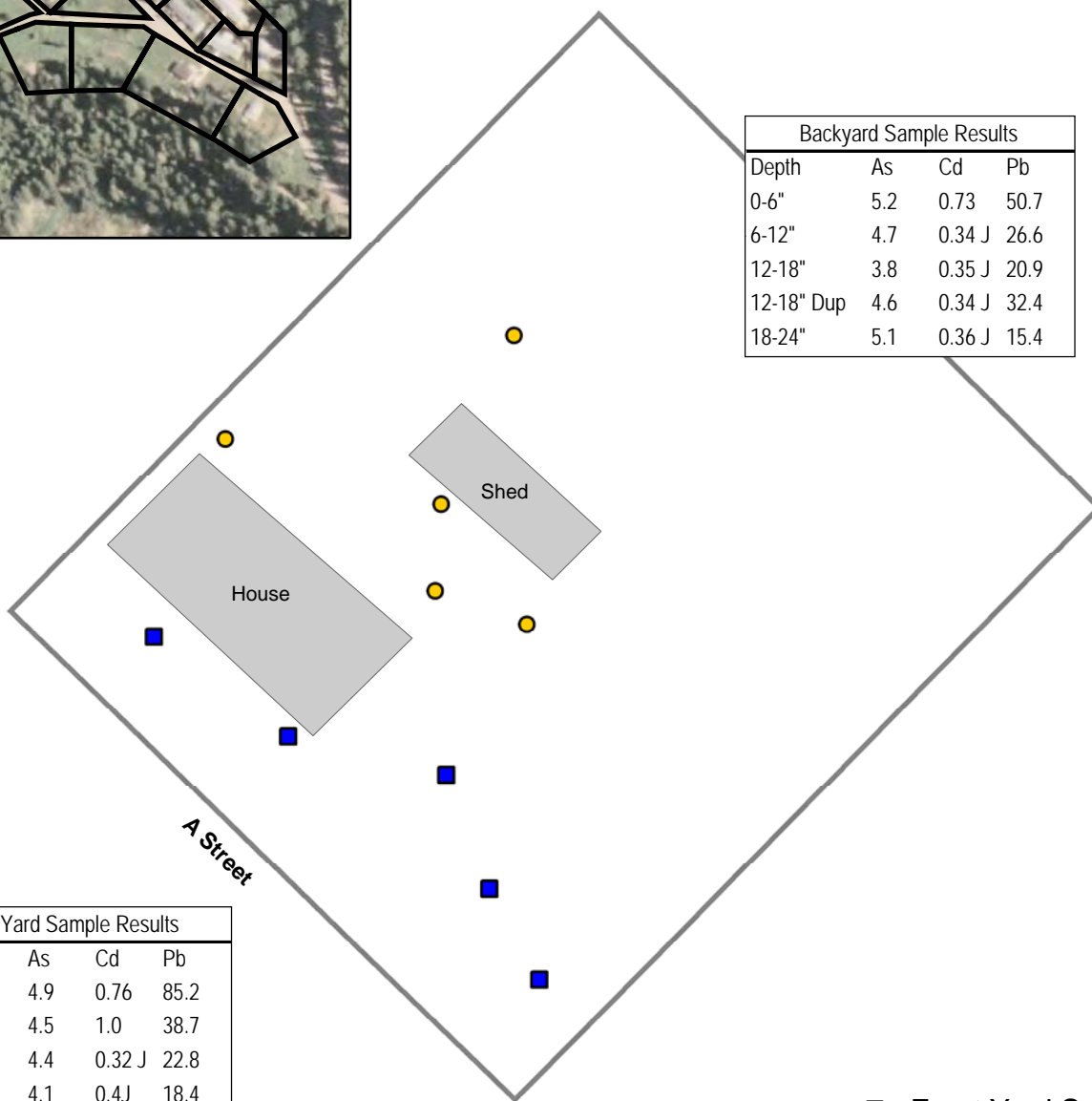


Figure A-2
Plat Map
Pend Oreille Village
Pend Oreille County, Washington



Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	5.2	0.73	50.7
6-12"	4.7	0.34 J	26.6
12-18"	3.8	0.35 J	20.9
12-18" Dup	4.6	0.34 J	32.4
18-24"	5.1	0.36 J	15.4

Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	4.9	0.76	85.2
6-12"	4.5	1.0	38.7
12-18"	4.4	0.32 J	22.8
18-24"	4.1	0.4J	18.4



- Front Yard Samples
- Backyard Samples

J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Date: 02/22/08
 by: MKS
 Project: Region 10 START-3 07-09-0005



Figure A-3
Contaminants of Concern
Lot # 02, Block # 01
(02-01)



Riverside Drive

A Street

Sample Results			
Depth	As	Cd	Pb
0-6"	6.2	0.61	31.7
0-6" Dup	5.7	0.56	30.5J
6-12"	4.8	0.56	22.4
12-18"	4.5	0.52J	23.8
18-24"	4.6	0.47J	26.9J

◆ Sample Locations

0 2.5 5 10 Meters



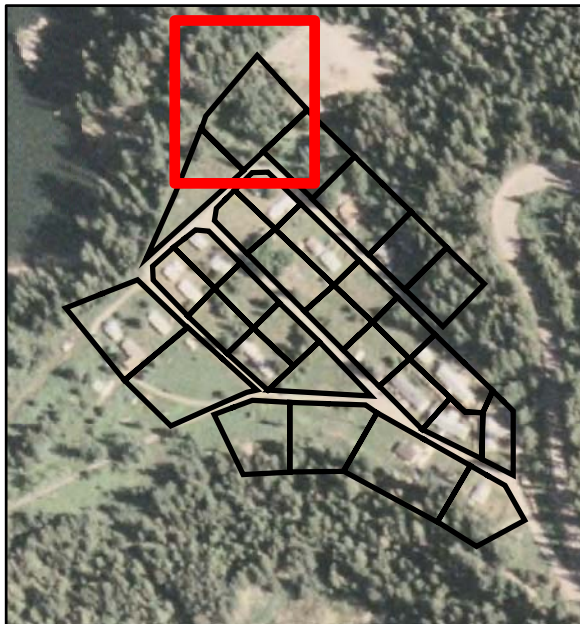
J – Estimated Concentration



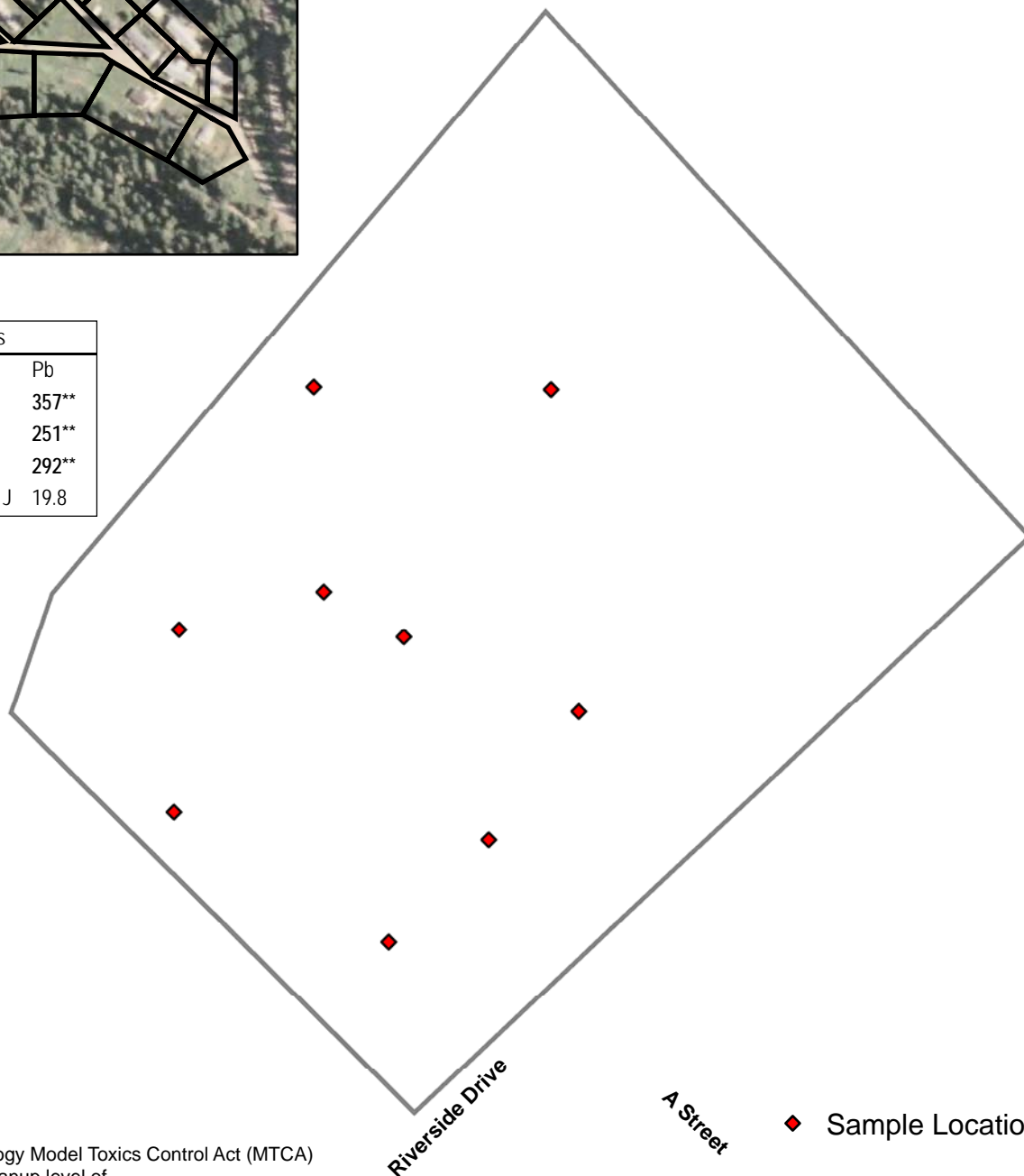
Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-4
Contaminants of Concern
Lot # 04, Block # 01
(04-01)



Sample Results			
Depth	As	Cd	Pb
0-6"	10.2	6.8*	357**
6-12"	6.2	3.2*	251**
12-18"	6.1	5.8*	292**
18-24"	3.9	0.21J	19.8



◆ Sample Locations

0 2.5 5 10 Meters



Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)
Method A Site specific Cleanup level of
*2 mg/kg for Cadmium **250 mg/kg for Lead
J – Estimated Concentration



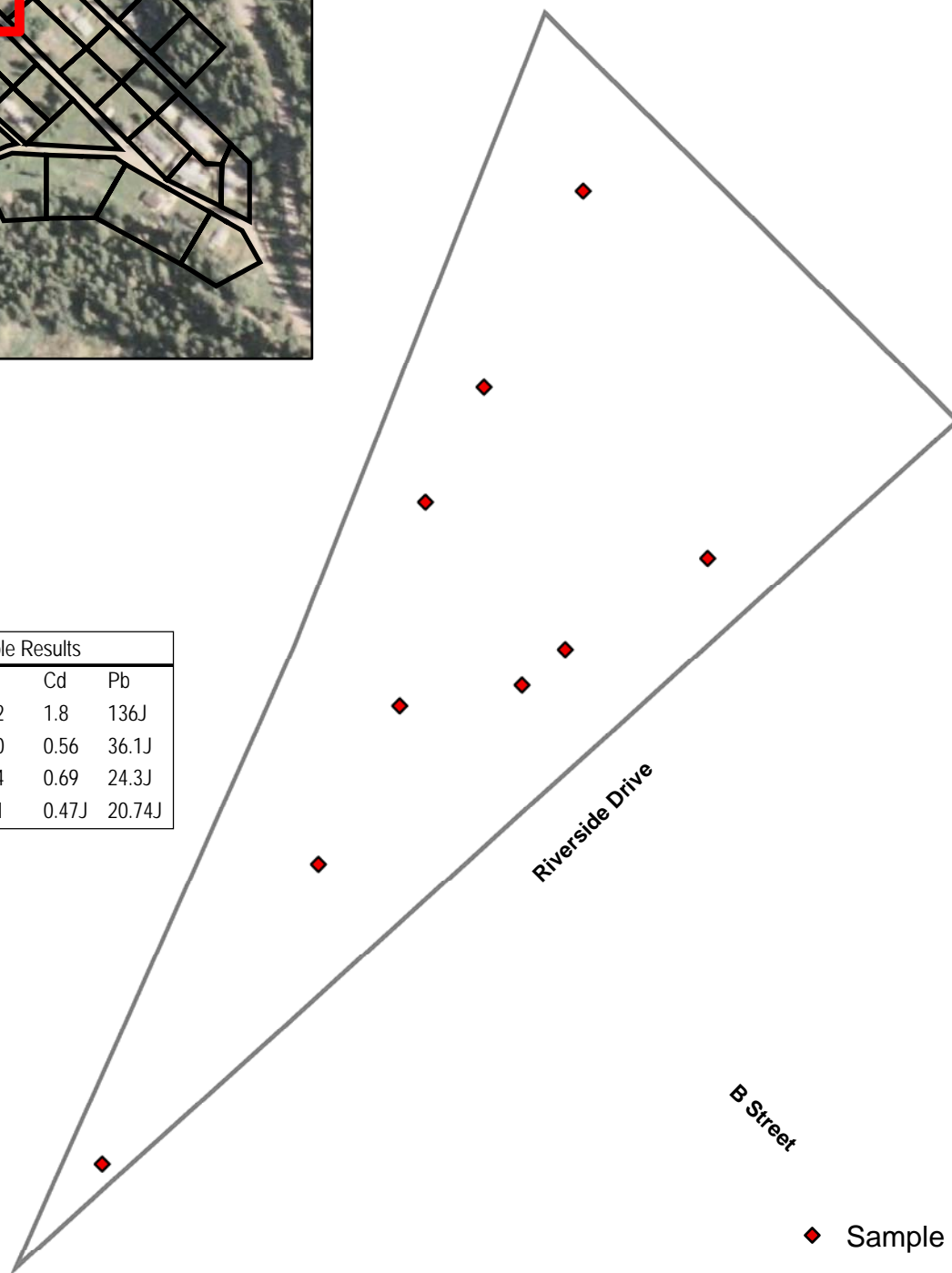
Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-5
Contaminants of Concern
Lot # 05, Block # 01
(05-01)



Sample Results			
Depth	As	Cd	Pb
0-6"	4.2	1.8	136J
6-12"	5.0	0.56	36.1J
12-18"	4.4	0.69	24.3J
18-24"	4.1	0.47J	20.74J



◆ Sample Locations

0 2.5 5 10 Meters

J – Estimated Concentration



Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005

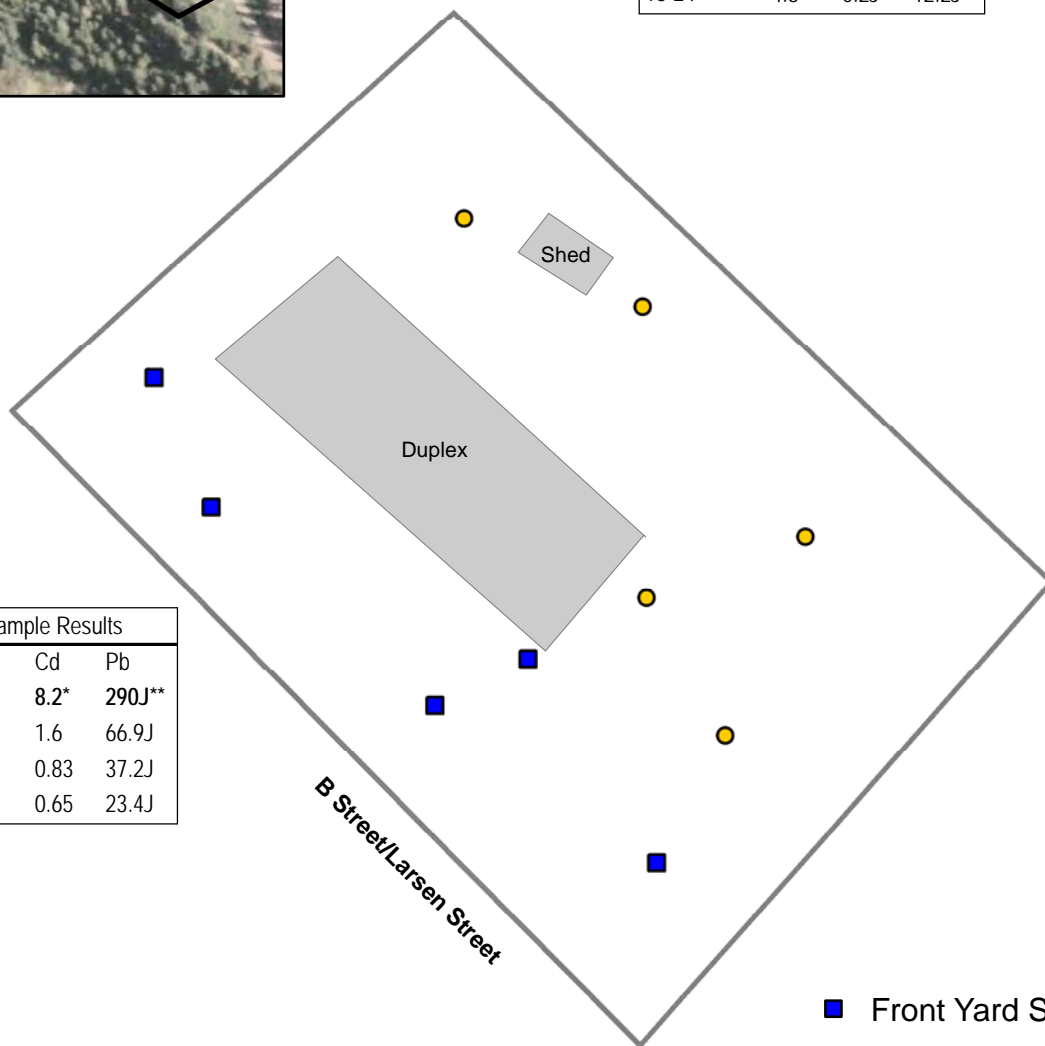


Figure A-6
Contaminants of Concern
Lot # 06, Block # 01
(06-01)



Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	4.8	0.48J	27.4J
6-12"	5.4	0.48J	22.7J
12-18"	4.4	0.35J	14.8
12-18" Dup	5.6	0.8	39.3J
18-24"	4.8	0.2J	12.2J

Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	6.3	8.2*	290J**
6-12"	5.5	1.6	66.9J
12-18"	5.7	0.83	37.2J
18-24"	5.1	0.65	23.4J



- Front Yard Samples
- Backyard Samples

Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)
 Method A Site specific Cleanup level of
 *2 mg/kg for Cadmium **250 mg/kg for Lead
 J – Estimated Concentration

0 2.5 5 10 Meters



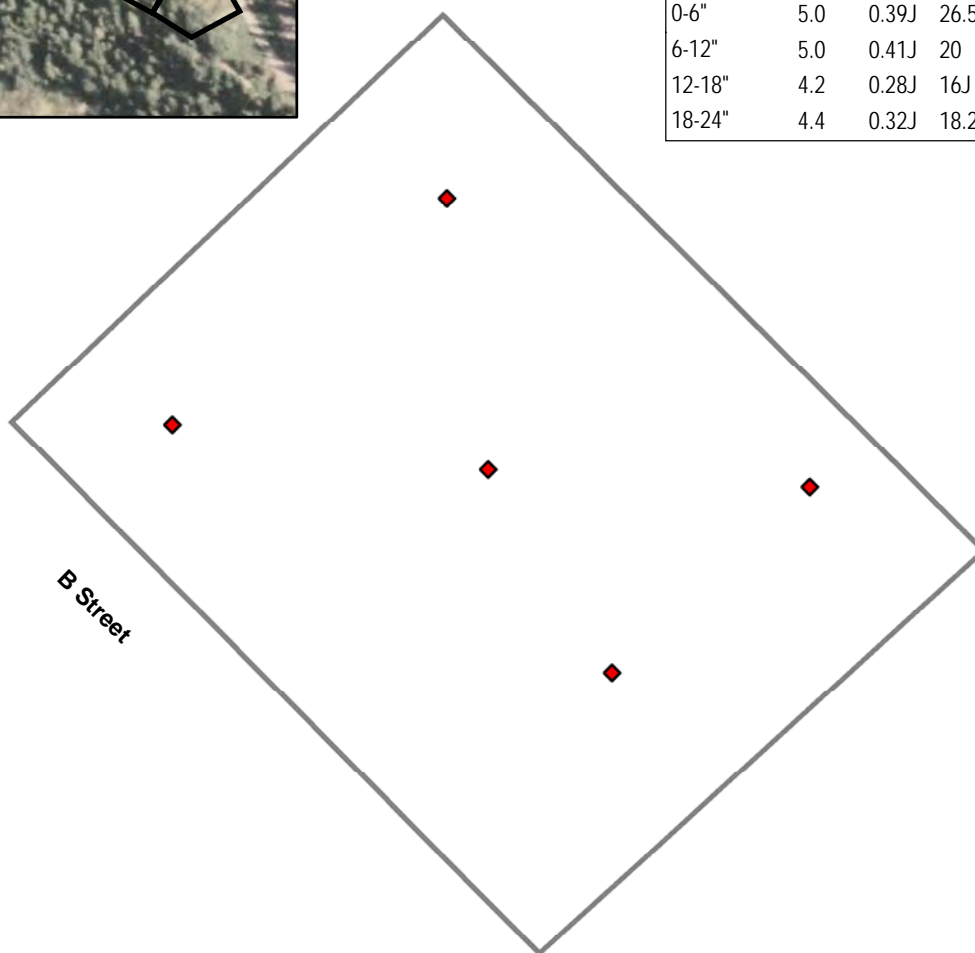
Source: USGS TerraServer DOQQ &
 Northeast Washington
 Surveyors Plat Map GOV
 Lot #10, Section 22,
 Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3
 07-09-0005



Figure A-7
Contaminants of Concern
Lot # 03, Block # 02
(03-02)



Sample Results			
Depth	As	Cd	Pb
0-6"	5.0	0.39J	26.5
6-12"	5.0	0.41J	20
12-18"	4.2	0.28J	16J
18-24"	4.4	0.32J	18.2J



◆ Sample Locations

0 2.5 5 10 Meters

J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005



Figure A-8
Contaminants of Concern
Lot # 04, Block # 02
(04-02)



Riverside Drive

B Street

Sample Results			
Depth	As	Cd	Pb
0-6"	1.6U	0.99	43.1J
6-12"	1.1UJ	1.2	32.1J
12-18"	1.1U	0.86	18.5J
12-18" Dup	1.3U	0.83	20.1J
18-24"	1.1U	0.93	19.9

◆ Sample Locations

0 2.5 5 10 Meters

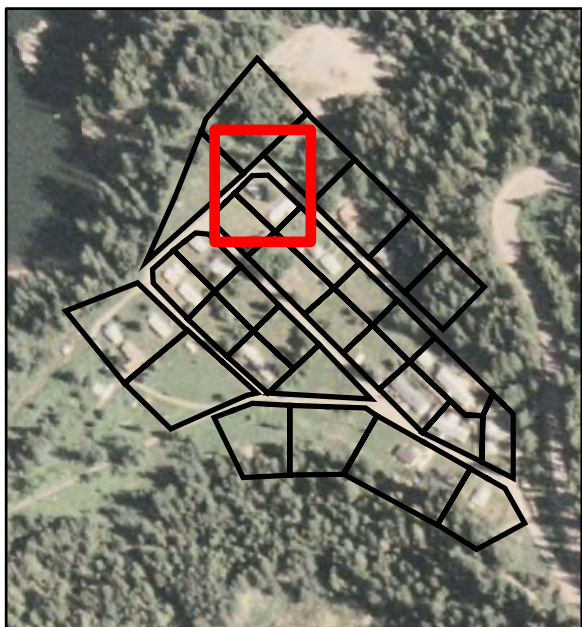
J – Estimated Concentration
 U – Undetected Constituent
 UJ – Undetected Constituent & Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005

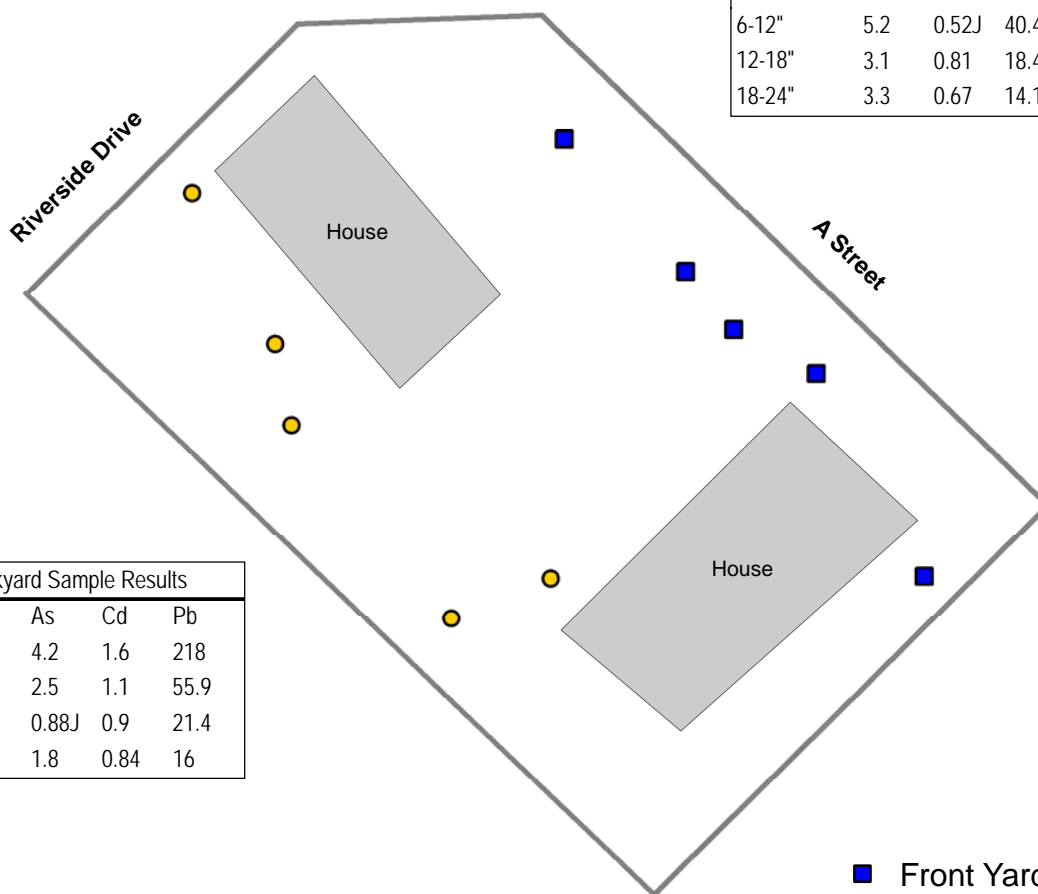


Figure A-9
Contaminants of Concern
Lot # 07, Block # 02
(07-02)



Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	5.0	0.61	70.9
6-12"	5.2	0.52J	40.4
12-18"	3.1	0.81	18.4
18-24"	3.3	0.67	14.1

Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	4.2	1.6	218
6-12"	2.5	1.1	55.9
12-18"	0.88J	0.9	21.4
18-24"	1.8	0.84	16



■ Front Yard Samples
● Backyard Samples

0 2.5 5 10 Meters

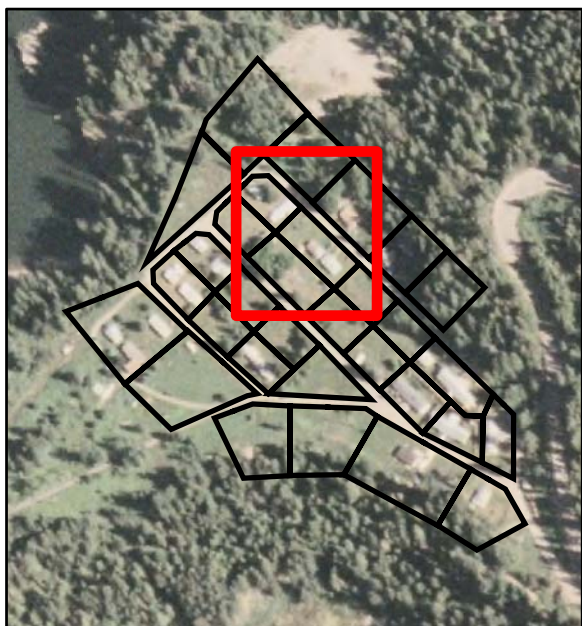
J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
Lot #10, Section 22, Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3 07-09-0005

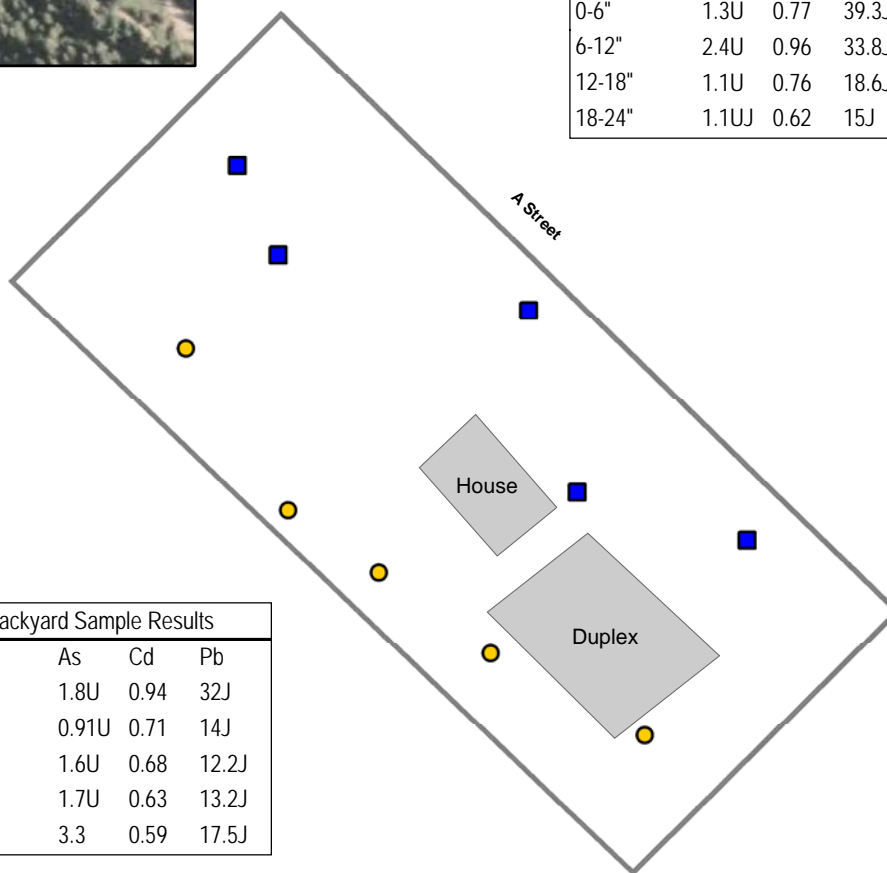


Figure A-10
Contaminants of Concern
Lot # 08, Block # 02
(08-02)



Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	1.3U	0.77	39.3J
6-12"	2.4U	0.96	33.8J
12-18"	1.1U	0.76	18.6J
18-24"	1.1UJ	0.62	15J

Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	1.8U	0.94	32J
6-12"	0.91U	0.71	14J
12-18"	1.6U	0.68	12.2J
18-24"	1.7U	0.63	13.2J
D Dup	3.3	0.59	17.5J



- Front Yard Samples
- Backyard Samples

J – Estimated Concentration
 U – Undetected Constituent
 UJ – Undetected Constituent & Estimated Concentration

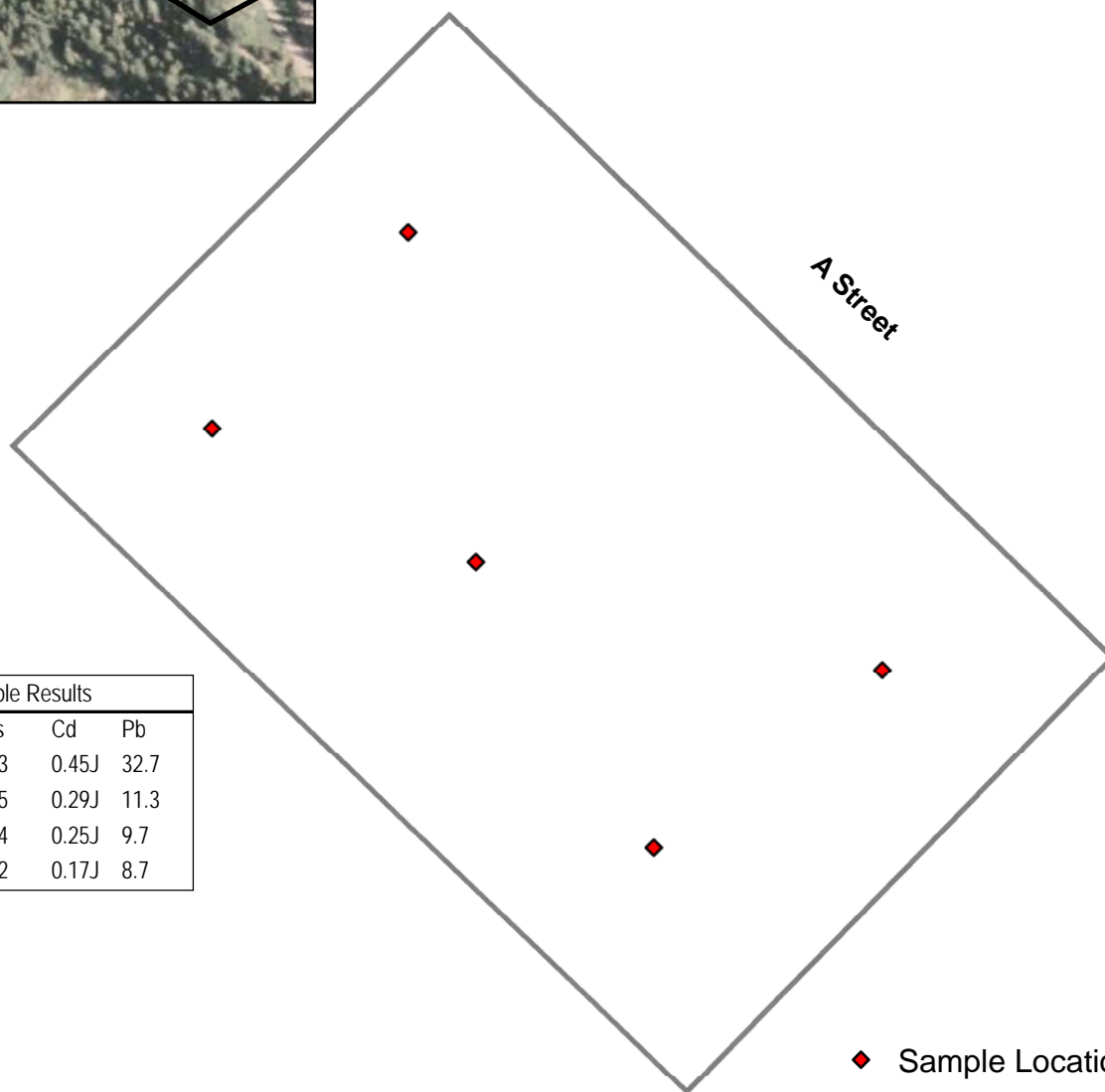
0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005



Figure A-11
Contaminants of Concern
Lot # 09, Block # 02
(09-02)



Sample Results			
Depth	As	Cd	Pb
0-6"	5.3	0.45J	32.7
6-12"	4.5	0.29J	11.3
12-18"	3.4	0.25J	9.7
18-24"	4.2	0.17J	8.7

◆ Sample Locations



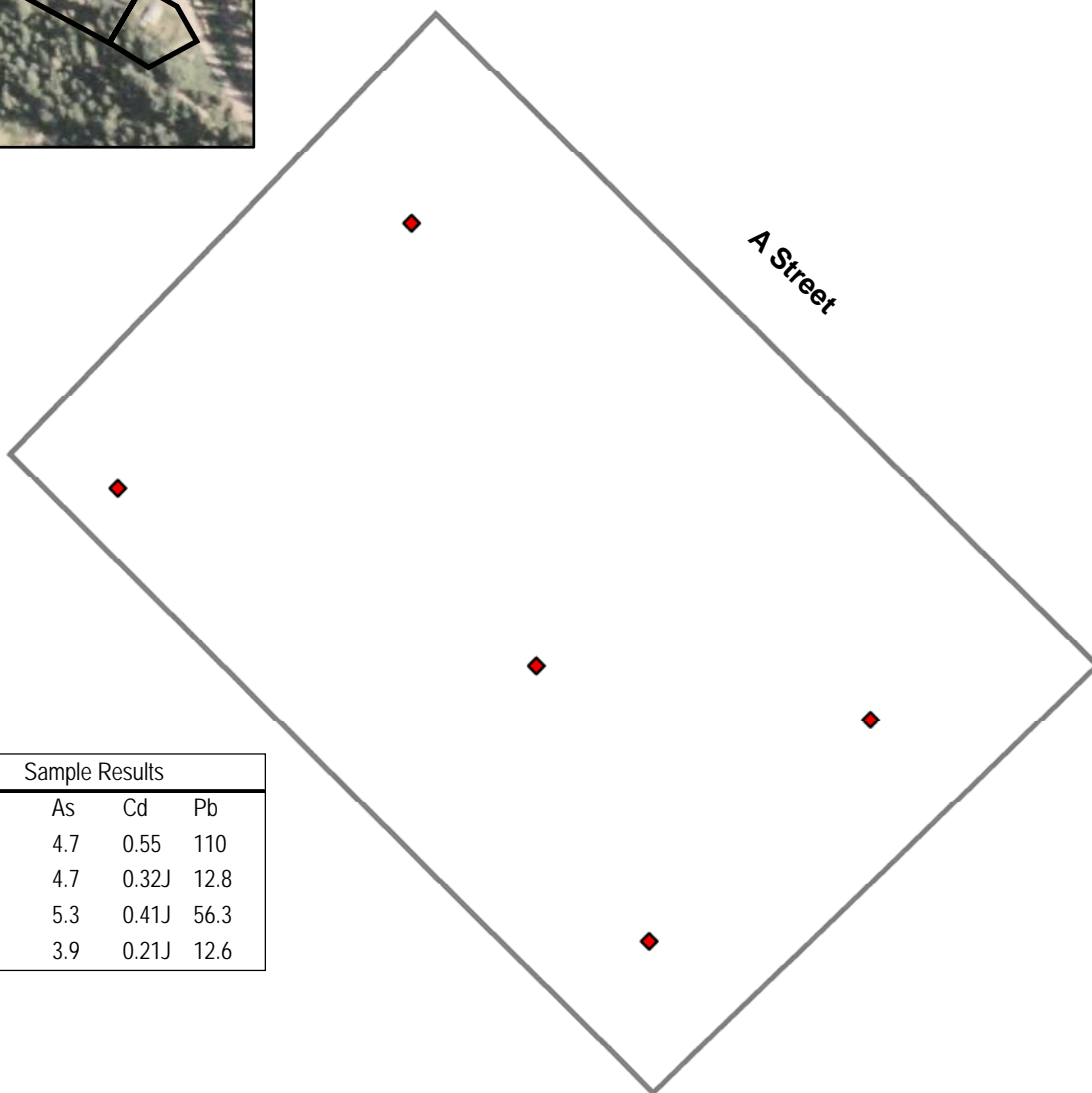
J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3
 07-09-0005



Figure A-12
Contaminants of Concern
Lot # 10, Block # 02
(10-02)



Sample Results			
Depth	As	Cd	Pb
0-6"	4.7	0.55	110
6-12"	4.7	0.32J	12.8
12-18"	5.3	0.41J	56.3
18-24"	3.9	0.21J	12.6

◆ Sample Locations

0 2.5 5 10 Meters

J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3
 07-09-0005

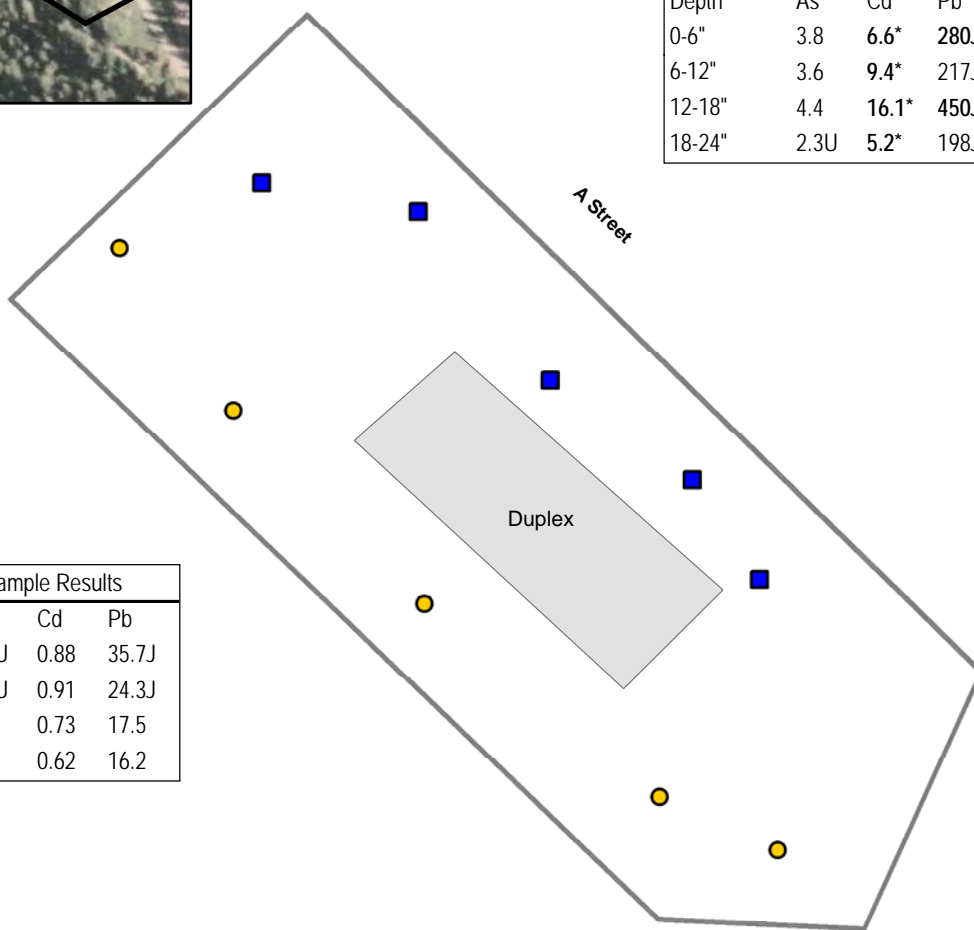


Figure A-13
Contaminants of Concern
Lot # 11, Block # 02
(11-02)



Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	3.8	6.6*	280J**
6-12"	3.6	9.4*	217J
12-18"	4.4	16.1*	450J**
18-24"	2.3U	5.2*	198J

Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	1.7U	0.88	35.7J
6-12"	1.9U	0.91	24.3J
12-18"	5.0	0.73	17.5
18-24"	3.5	0.62	16.2



■ Front Yard Samples

● Backyard Samples

0 2.5 5 10 Meters

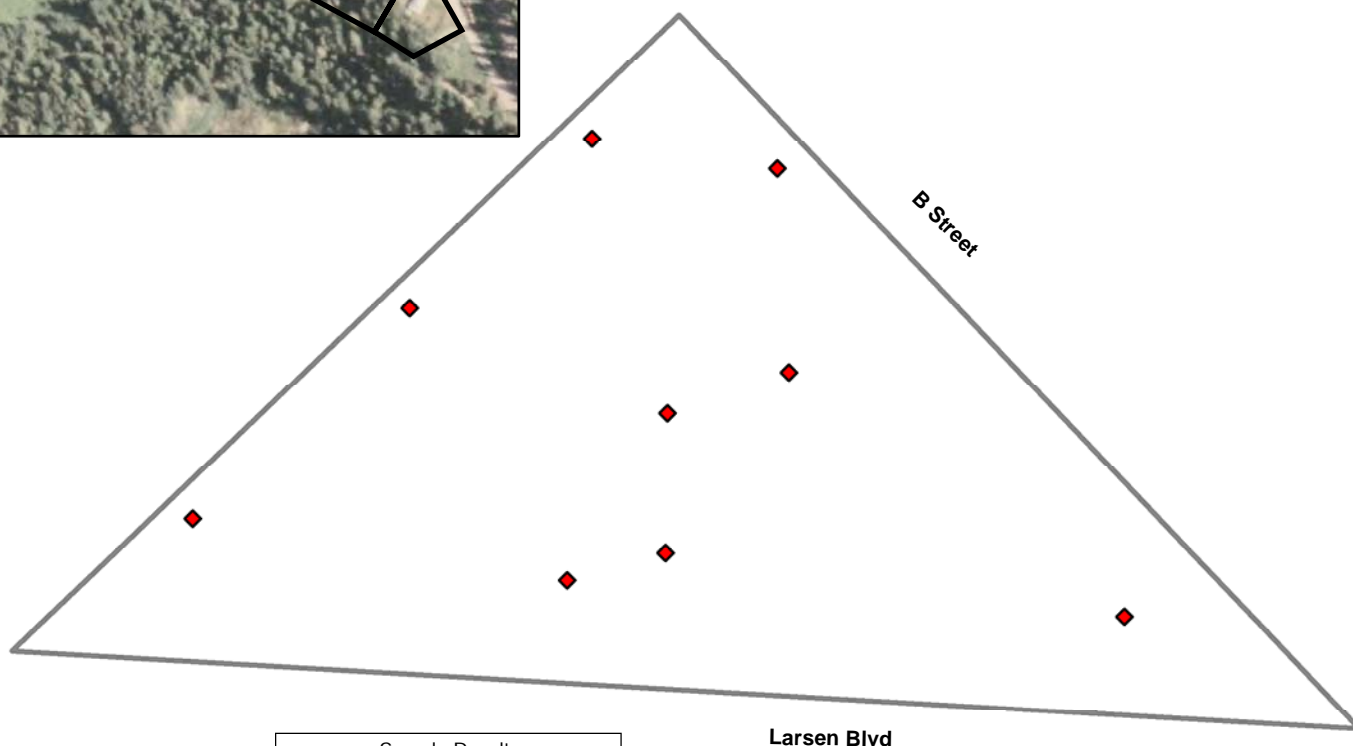
Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)
 Method A Site specific Cleanup level of
 *2 mg/kg for Cadmium **250 mg/kg for Lead
 J – Estimated Concentration
 U – Undetected Constituent



Source: USGS TerraServer DOQQ &
 Northeast Washington
 Surveyors Plat Map GOV
 Lot #10, Section 22,
 Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3
 07-09-0005



Figure A-14
Contaminants of Concern
Lot # 12, Block # 02
(12-02)



Sample Results			
Depth	As	Cd	Pb
0-6"	4.6	1.3	107
6-12"	2.7	1.0	34.9
12-18"	2.8	0.67	14.9
12-18" Dup	1.9	0.62	14.2
18-24"	2.9	0.63	14.9

◆ Sample Locations

0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005

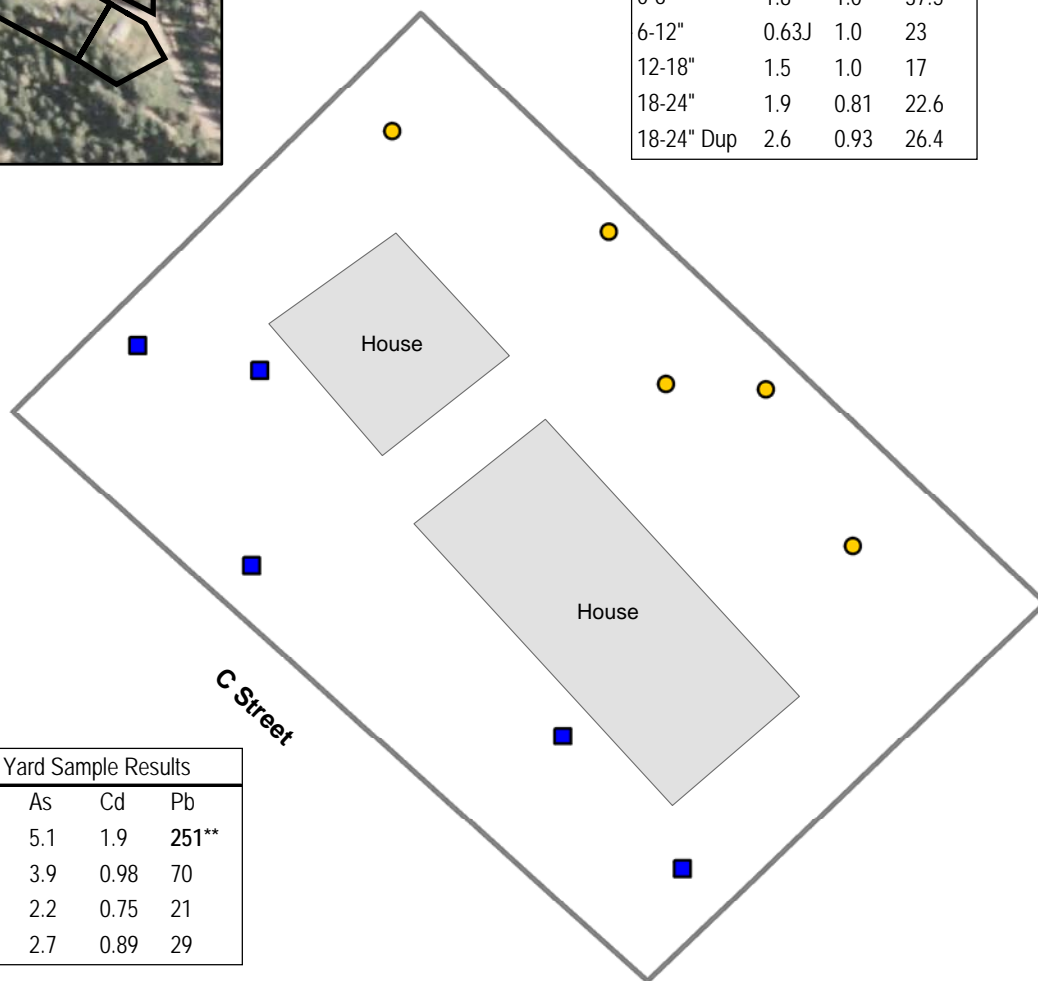


Figure A-15
Contaminants of Concern
Lot # 01, Block # 03
(01-03)



Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	1.8	1.0	37.5
6-12"	0.63J	1.0	23
12-18"	1.5	1.0	17
18-24"	1.9	0.81	22.6
18-24" Dup	2.6	0.93	26.4

Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	5.1	1.9	251**
6-12"	3.9	0.98	70
12-18"	2.2	0.75	21
18-24"	2.7	0.89	29



Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)
 Method A Site specific Cleanup level of
 **250 mg/kg for Lead
 J – Estimated Concentration

■ Front Yard Samples
 ● Backyard Samples

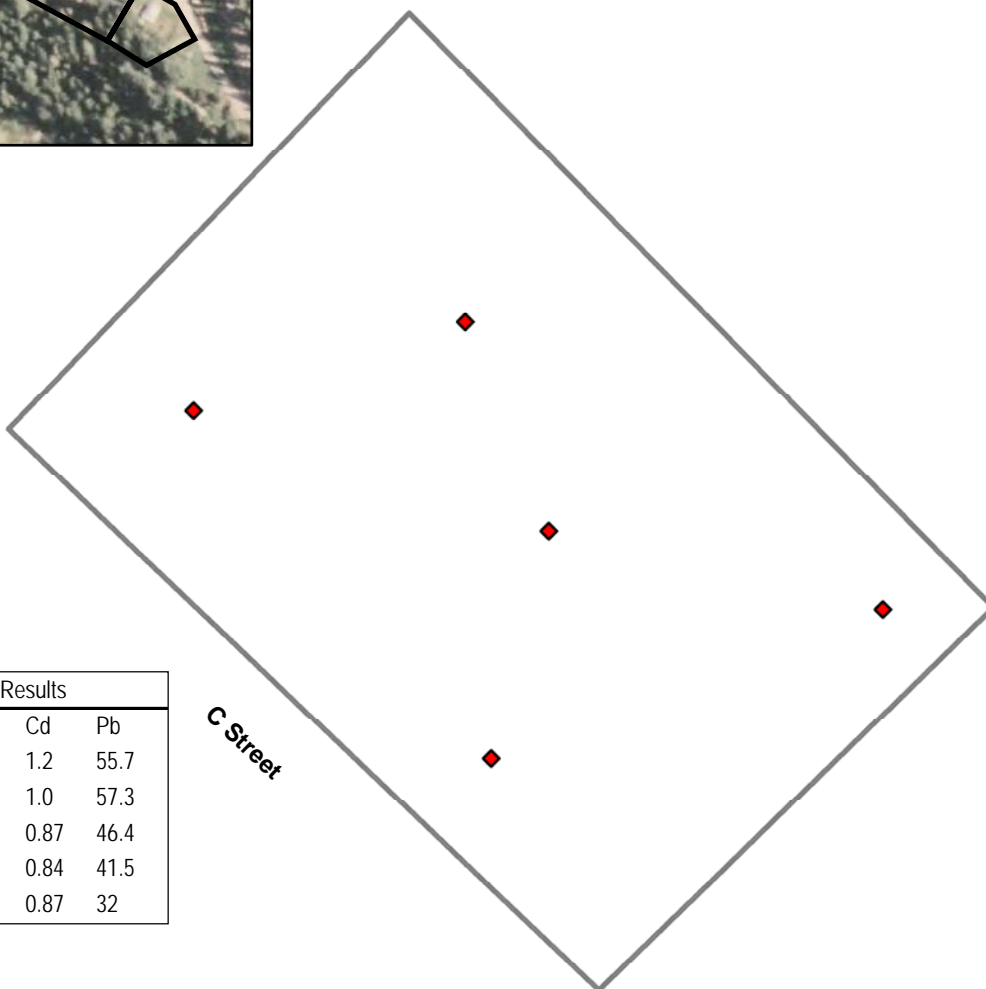
0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ &
 Northeast Washington
 Surveyors Plat Map GOV
 Lot #10, Section 22,
 Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3
 07-09-0005



Figure A-16
Contaminants of Concern
Lot # 2, Block # 03
(02-03)



Sample Results			
Depth	As	Cd	Pb
0-6"	6.0	1.2	55.7
6-12"	7.9	1.0	57.3
6-12" Dup	6.1	0.87	46.4
12-18"	6.6	0.84	41.5
18-24"	5.6	0.87	32

◆ Sample Locations

0 2.5 5 10 Meters



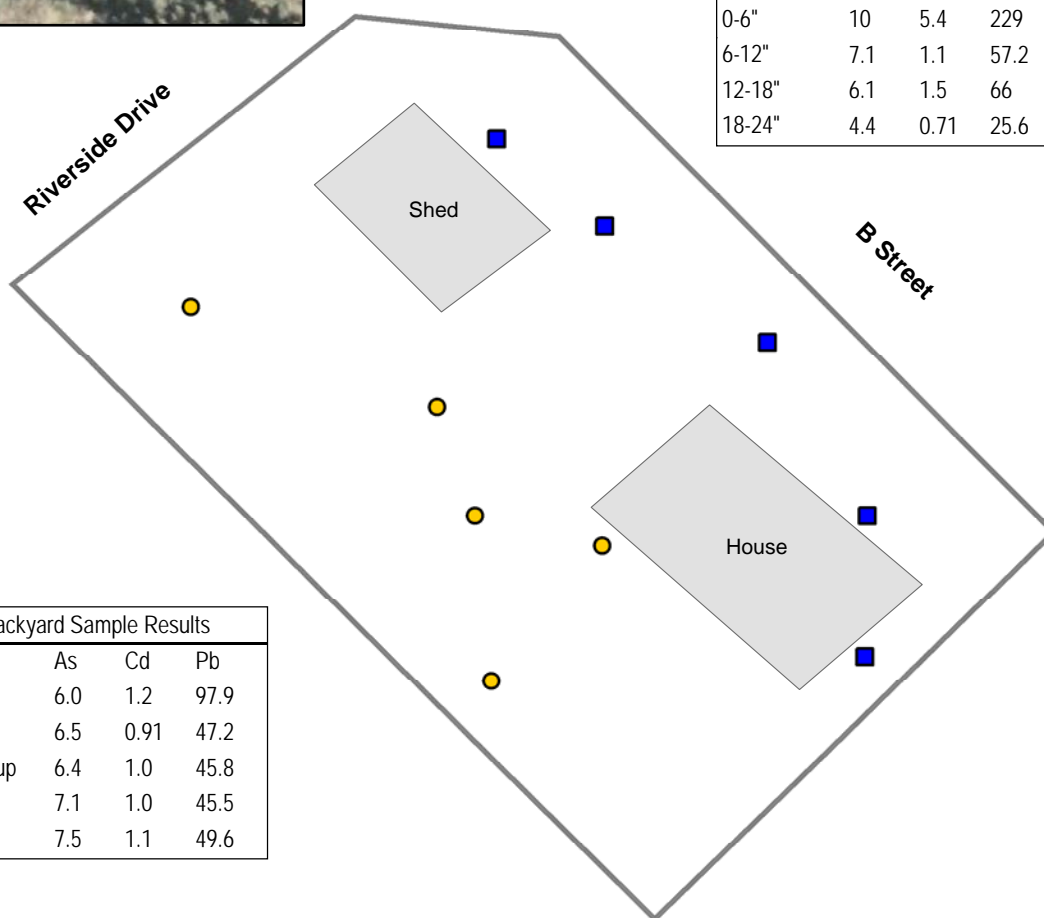
Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-17
Contaminants of Concern
Lot #03, Block # 03
(03-03)



Front Yard Sample Results			
Depth	As	Cd	Pb
0-6"	10	5.4	229
6-12"	7.1	1.1	57.2
12-18"	6.1	1.5	66
18-24"	4.4	0.71	25.6



Backyard Sample Results			
Depth	As	Cd	Pb
0-6"	6.0	1.2	97.9
6-12"	6.5	0.91	47.2
6-12" Dup	6.4	1.0	45.8
12-18"	7.1	1.0	45.5
18-24"	7.5	1.1	49.6

■ Front Yard Samples
● Backyard Samples

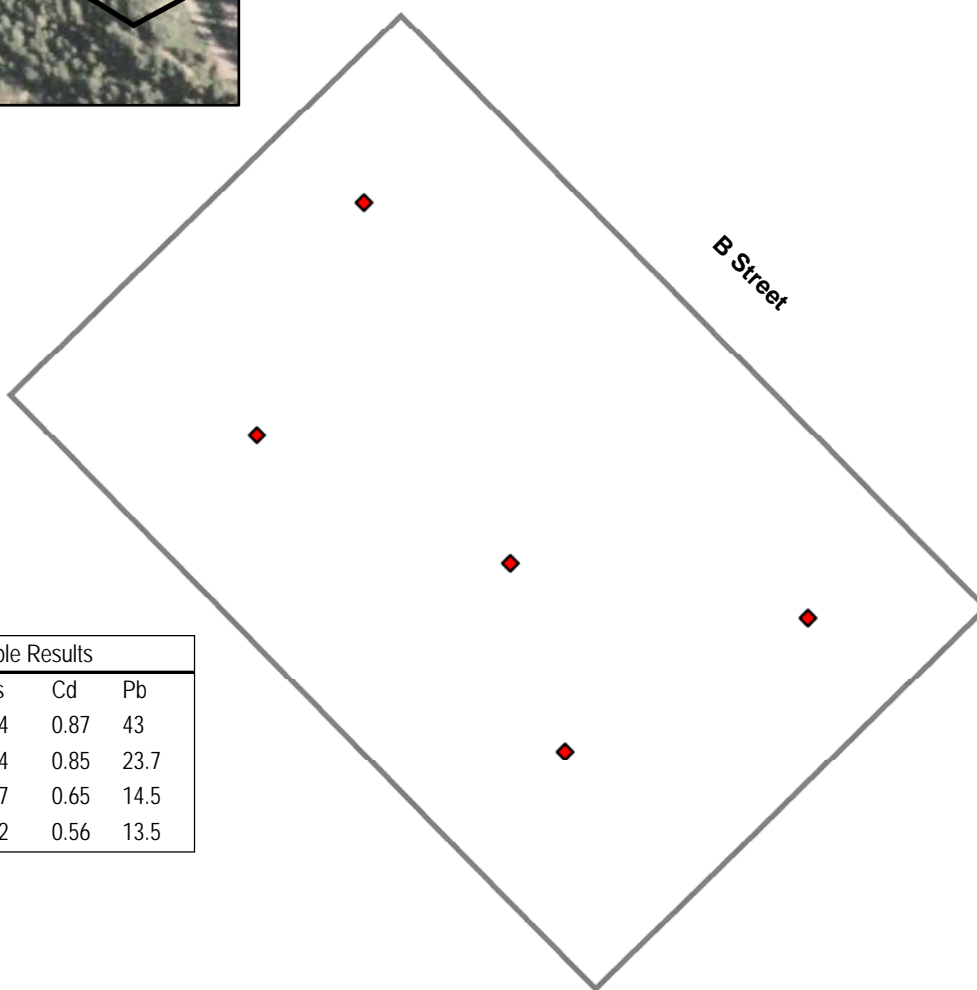
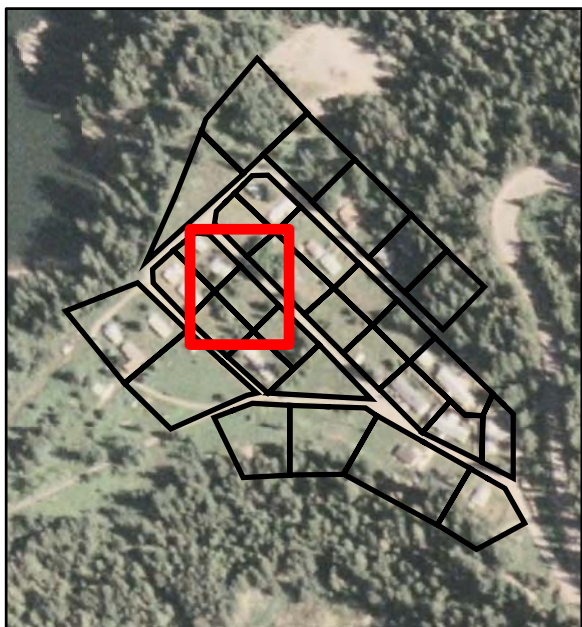
0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ & Northeast Wasington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005



Figure A-18
Contaminants of Concern
Lot # 5, Block # 03
(05-03)



Sample Results			
Depth	As	Cd	Pb
0-6"	6.4	0.87	43
6-12"	5.4	0.85	23.7
12-18"	4.7	0.65	14.5
18-24"	4.2	0.56	13.5

◆ Sample Locations

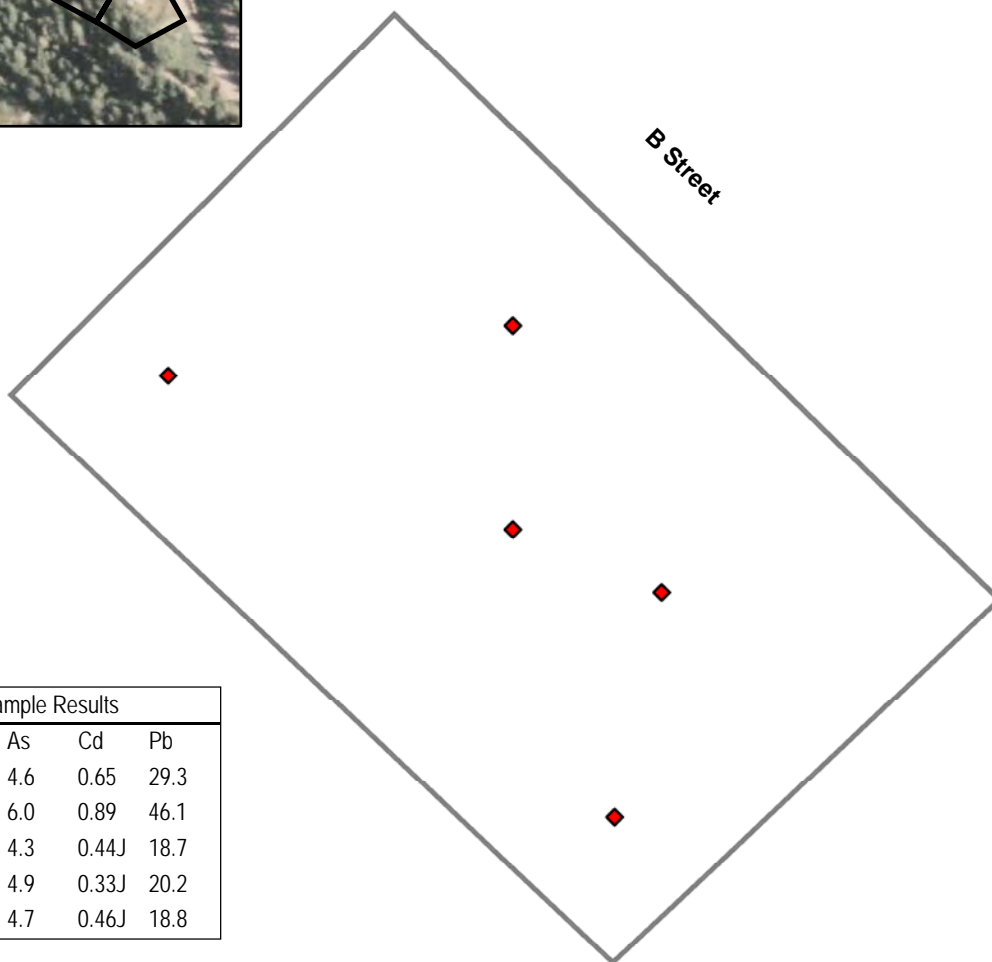
0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-19
Contaminants of Concern
Lot # 06, Block # 03
(06-03)



Sample Results			
Depth	As	Cd	Pb
0-6"	4.6	0.65	29.3
0-6" Dup	6.0	0.89	46.1
6-12"	4.3	0.44J	18.7
12-18"	4.9	0.33J	20.2
18-24"	4.7	0.46J	18.8

◆ Sample Locations

J – Estimated Concentration

0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005

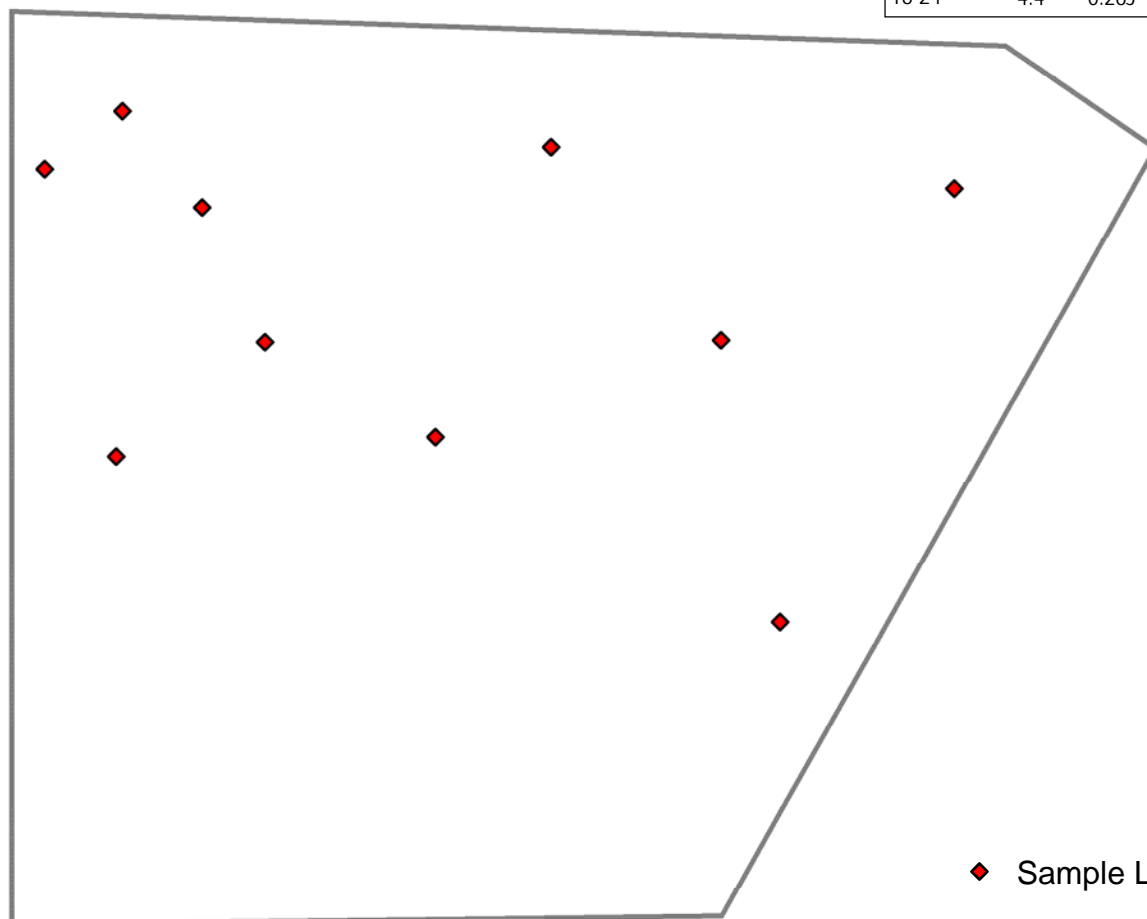


Figure A-20
Contaminants of Concern
Lot # 07, Block # 03
(07-03)



Sample Results			
Depth	As	Cd	Pb
0-6"	5.7	0.51J	44.6
6-12"	4.5	0.33J	19.8
6-12" Dup	4.7	0.28J	20.9
12-18"	5.1	0.33J	17.5
18-24"	4.4	0.26J	14.6

Larsen Blvd



◆ Sample Locations

J – Estimated Concentration

0 2.5 5 10 Meters



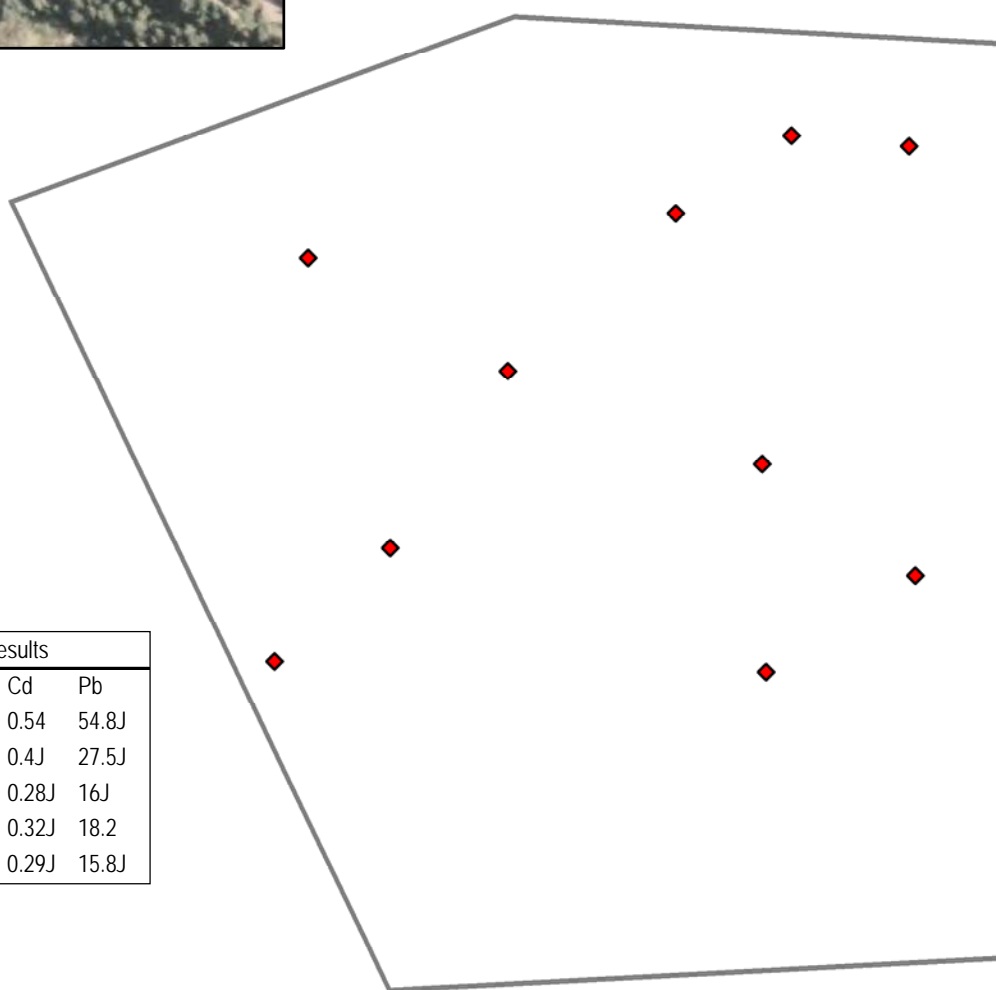
Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 02/22/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-21
Contaminants of Concern
Lot # 03, Block # 05
(03-05)



Larsen Blvd



Sample Results			
Depth	As	Cd	Pb
0-6"	4.6	0.54	54.8J
6-12"	5.4	0.4J	27.5J
12-18"	4.2	0.28J	16J
18-24"	4.4	0.32J	18.2
18-24" Dup	4.6	0.29J	15.8J

◆ Sample Locations

0 2.5 5 10 Meters



J – Estimated Concentration



Source: USGS TerraServer DOQQ & Northeast Washington Surveyors Plat Map GOV
 Lot #10, Section 22, Township 39N, Range 43E
 Date: 02/22/08
 By: MKS
 Project: Region 10 START-3 07-09-0005



Figure A-22
Contaminants of Concern
Lot # 04, Block # 05
(04-05)

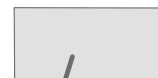


House

Shed



Cement
Pad



Sample Results			
Depth	As	Cd	Pb
0-6"	4.7	6.8J*	414**
0-6" Dup	5.6	7.5J*	399*
6-12"	4.8	2.6J*	182
12-18"	4.9	0.9J	42.1
18-24"	4.5U	0.5UJ	19.8

◆ Sample Locations

0 2.5 5 10 Meters



*Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)

Method A Site specific Cleanup level of
250 mg/kg for Lead and/or 2 mg/kg for Cadmium

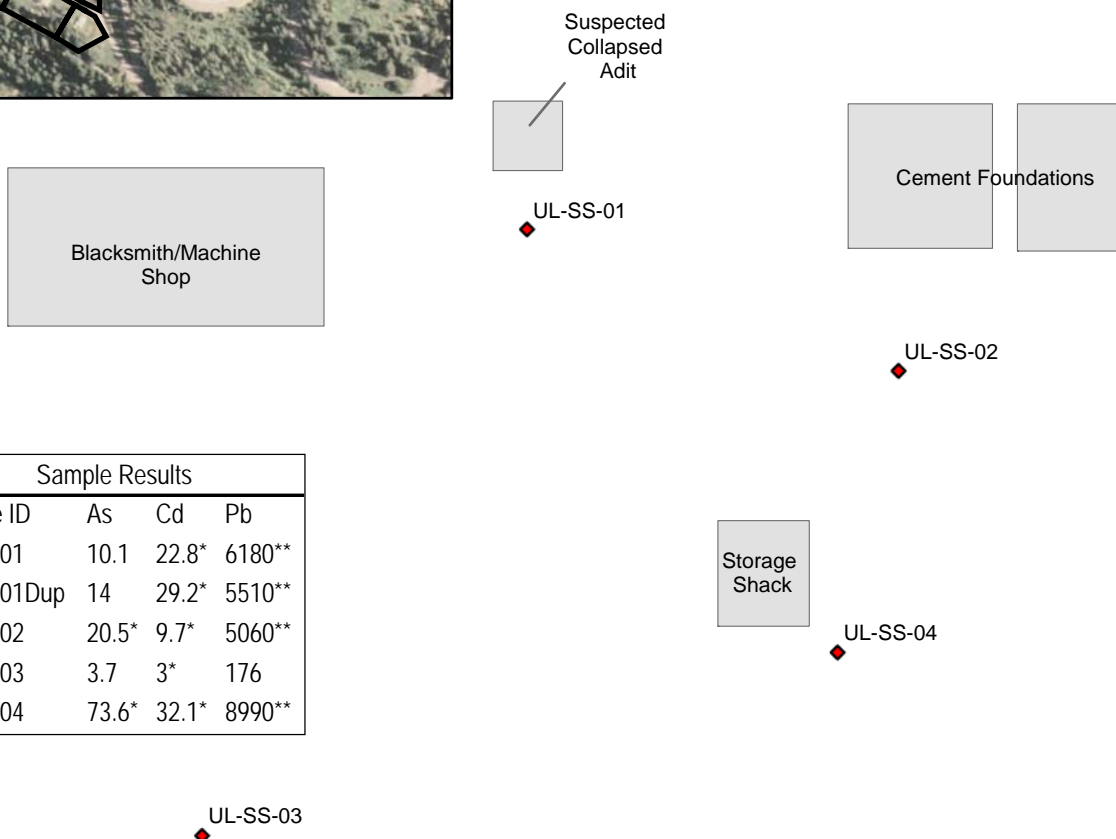
**Exceeds EPA Region 6 HHMS Screening of 400 mg/kg for Lead



Source: USGS TerraServer DOQQ &
Northeast Washington
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Lot #10, Section 22,
Township 39N, Range 43E
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07-09-0005



Figure A-23
Contaminants of Concern
Caretakers's Residence



Sample Results				
Sample ID	As	Cd	Pb	
UL-SS-01	10.1	22.8*	6180**	
UL-SS-01Dup	14	29.2*	5510**	
UL-SS-02	20.5*	9.7*	5060**	
UL-SS-03	3.7	3*	176	
UL-SS-04	73.6*	32.1*	8990**	

*Exceeds WA Dept of Ecology Model Toxics Control Act (MTCA)
Method A Site specific Cleanup level of
2 mg/kg for Cadmium and 250 mg/kg for Lead and/or 20 mg/kg for Arsenic
**Exceeds EPA Region 6 HHMS Screening of 400 mg/kg for Lead

◆ Sample Locations

0 2.5 5 10 Meters



Source: USGS TerraServer DOQQ &
Northeast Washington
Surveyors Plat Map GOV
Lot #10, Section 22,
Township 39N, Range 43E
Date: 03/25/08
By: MKS
Project: Region 10 START-3
07-09-0005



Figure A-24
Contaminants of Concern
Upper Level - Grandview Mine

APPENDIX B

BLM FPXRF Results

MINE SITE EVALUATIONS WITH ENVIRONMENTAL PROTECTION AGENCY

METALINE FALLS, WA

JULY 23 & 24, 2002

Team:

Carl Kitz – EPA, Seattle
Leatta Dahlhoff – Ecology and Environment, Seattle
Mike Sweeney – BLM
Jake Jakabosky – BLM

Purpose of the mine visits was to evaluate each of three mines as to the necessity for short term stabilization or potential reclamation. Sites evaluated were the Grandview and Pend Oreille Mines and the Josephine #1 & #2 Mines and Mills. Apparently only the Josephine #2 Mine and Mill is on BLM administered Public land.

Weather was hot (90 degrees) and dry on the 23 rd., and hot and humid on the 24 th. after a light rain during the night.

XRF INSTRUMENT RESULTS

Attached are two downloaded spreadsheets from the XRF. The first includes all rows (readings taken with the XRF) and the second has internal calibration rows deleted. On both, columns showing metals with insignificant readings are deleted. Rows 6, 8 and 9 were “duds”, that is, exposed for too short a time. No’s. 7 and 10 were the Blank LIST Standards.

July 23, 2002

Grandview Mine – Rows 14 to 16:

- 14 – Waste Rock west of shop and house.
- 15 – South of #14 on 20 ft. high pile of waste rock.
- 16 – A fine gray powder on west side of the former truck loading shed foundation.

Pend Oreille Mine – Rows 17 to 19:

- 17 – Waste Rock about 150 ft west of office building.
- 18 – Tailings in Impoundment #1.
- 19 – Tailings in Impoundment #2.

LIST Standards – Rows 20 to 24:

- 20 – Blank.
- 21 – Low.
- 22 – Dud.
- 23 – Medium.

24 – High.

Josephine Mine & Mill #1 – Rows 26 to 32:

- 26 – Tailings 50 ft. below road.
- 27 – Ore pile 75 ft. to west of #26. Empty cyanide drums observed.
- 28 – Unknown repeat of #27.
- 29 – Dud. Replaced battery.
- 31 – Tailings on edge of stream.
- 32 – Ten ft. north of road.

Josephine Mine & Mill #2 – Rows 34 to 39.

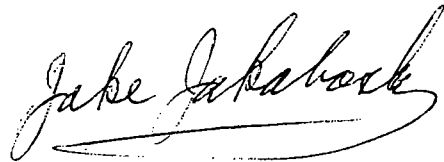
- 34 – Waste rock near bluff.
- 35 – Same, 75 ft. west of #34.
- 36 – Fine ground ore in ore bin.
- 37 – Tailings on edge of bluff, west end.
- 38 – Tailings on edge of bluff, near east end.
- 39 – Waste rock on approach to load out structure.

Yellowhead Mine – Opportunistic sample – Row 40:

- 40 – Ore car rail bed south of Yellowhead Mine.

Josephine Mine and Mill #2 – Rows 42 to 66:

Jakabosky and Sweeney set up a grid and performed a site evaluation to determine the limits and degree of contamination for potential future reclamation.

A handwritten signature in cursive script that reads "Jake Jakabosky". The signature is written in dark ink and has a long, sweeping underline that extends to the right.

Serial #XL700-U1999NR0969 Site: Date: 7/22/2002 to 8/19/2002

XLNo	Cor1	Ssec	Date/Time	Sr ± Prec	Pb ± Prec	As ± Prec	Hg ± Prec	Zn ± Prec	Cu ± Prec	Ni ± Prec	Fe ± Prec	Mn ± Prec	Cr ± Prec
1	Shutter Ca	35.1	7/22/2002 14:36:18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	Shutter Ca	35.1	7/22/2002 15:45:25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	Shutter Ca	35.2	7/22/2002 16:08:09	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	Shutter Ca	35.2	7/22/2002 16:11:52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	Shutter Ca	35.1	7/22/2002 16:25:53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6		0.7	7/22/2002 16:26:14	<LOD = 39.00	<LOD = 69.30	<LOD = 72.00	<LOD = 51.60	<LOD = 144.90	<LOD = 285.00	<LOD = 585.00	<LOD = 840.00	<LOD = 1155.00	<LOD = 1800.00
7		53.5	7/22/2002 16:26:41	61.70 ± 4.30	<LOD = 11.55	<LOD = 10.35	<LOD = 5.70	<LOD = 18.45	<LOD = 32.70	<LOD = 60.30	194.30 ± 68.10	<LOD = 146.10	<LOD = 300.00
8		2.7	7/22/2002 16:36:54	36.10 ± 16.20	<LOD = 66.75	<LOD = 57.60	<LOD = 25.65	<LOD = 90.75	<LOD = 145.20	<LOD = 285.00	<LOD = 555.00	<LOD = 735.00	<LOD = 1500.00
9		5.5	7/22/2002 16:37:15	47.60 ± 12.40	<LOD = 39.60	<LOD = 30.45	<LOD = 17.25	<LOD = 54.60	<LOD = 96.75	<LOD = 180.00	<LOD = 315.00	<LOD = 450.00	<LOD = 870.00
10		36.4	7/22/2002 16:41:50	54.80 ± 5.10	<LOD = 15.15	<LOD = 13.05	<LOD = 6.45	<LOD = 22.65	<LOD = 40.65	<LOD = 71.40	<LOD = 117.60	<LOD = 180.00	<LOD = 375.00
11	Shutter Ca	35.1	7/22/2002 16:56:31	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	Shutter Ca	35.2	7/23/2002 08:10:26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13	Shutter Ca	35.2	7/23/2002 13:01:04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14		27.9	7/23/2002 13:09:12	63.60 ± 10.60	2320.00 ± 100.00	<LOD = 117.00	<LOD = 42.90	12396.80 ± 350.00	434.00 ± 230.00	<LOD = 240.00	2908.80 ± 340.00	<LOD = 615.00	<LOD = 975.00
15		30.5	7/23/2002 13:13:28	83.30 ± 10.60	2720.00 ± 100.00	140.30 ± 78.70	<LOD = 43.35	14899.20 ± 360.00	395.00 ± 220.00	<LOD = 225.00	5168.00 ± 390.00	<LOD = 675.00	<LOD = 1020.00
16		16.7	7/23/2002 13:27:14	157.50 ± 58.50	36582.40 ± 1899.20	2840.00 ± 720.00	<LOD = 360.00	146944.00 ± 7296.00	13491.20 ± 1899.20	<LOD = 1950.00	213811.20 ± 12000.00	<LOD = 8846.40	<LOD = 10348.80
17		30.5	7/23/2002 14:47:02	89.20 ± 12.20	2240.00 ± 100.00	<LOD = 120.45	<LOD = 41.40	6816.00 ± 250.00	<LOD = 270.00	<LOD = 225.00	4217.60 ± 410.00	<LOD = 690.00	<LOD = 1020.00
18		25.7	7/23/2002 14:59:00	62.00 ± 8.60	269.80 ± 34.70	<LOD = 45.15	<LOD = 18.00	494.40 ± 59.10	<LOD = 98.25	<LOD = 180.00	8998.40 ± 510.00	<LOD = 765.00	<LOD = 1035.00
19		23.4	7/23/2002 15:30:38	38.70 ± 11.10	1229.60 ± 89.10	<LOD = 109.20	<LOD = 39.45	3779.20 ± 200.00	<LOD = 255.00	<LOD = 330.00	34278.40 ± 1400.00	<LOD = 1950.00	<LOD = 2100.00
20		61.1	7/23/2002 16:19:19	62.60 ± 4.00	<LOD = 11.10	<LOD = 9.75	<LOD = 5.25	<LOD = 18.15	<LOD = 31.35	<LOD = 57.90	231.80 ± 65.30	<LOD = 137.85	<LOD = 285.00
21		65.6	7/23/2002 16:22:31	184.00 ± 7.50	20.80 ± 11.80	<LOD = 15.60	<LOD = 7.80	72.70 ± 21.20	<LOD = 51.30	<LOD = 128.40	27187.20 ± 550.00	<LOD = 765.00	<LOD = 855.00
22		9.8	7/23/2002 16:26:34	203.20 ± 22.00	1120.00 ± 100.00	<LOD = 126.45	<LOD = 38.10	301.60 ± 82.10	<LOD = 165.00	<LOD = 330.00	22988.80 ± 1300.00	<LOD = 1950.00	<LOD = 2250.00
23		64.8	7/23/2002 16:28:00	208.00 ± 8.50	1140.00 ± 39.10	83.40 ± 32.20	<LOD = 14.70	316.40 ± 31.60	<LOD = 59.85	<LOD = 122.40	22092.80 ± 500.00	919.20 ± 490.00	<LOD = 840.00
24		68.6	7/23/2002 16:32:16	305.00 ± 12.00	5587.20 ± 110.00	652.40 ± 77.10	50.90 ± 23.70	7078.40 ± 150.00	3000.00 ± 150.00	<LOD = 210.00	35200.00 ± 740.00	10694.40 ± 820.00	<LOD = 1650.00
25	Shutter Ca	32.6	7/23/2002 19:41:32	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
26		16.7	7/23/2002 19:42:44	67.70 ± 40.30	19289.60 ± 989.60	<LOD = 690.00	<LOD = 330.00	268902.41 ± 12000.00	4998.40 ± 2099.20	<LOD = 1650.00	12998.40 ± 1800.00	<LOD = 3000.00	<LOD = 5400.00
27		17.4	7/23/2002 19:45:17	48.10 ± 18.00	7814.40 ± 300.00	<LOD = 285.00	<LOD = 101.10	37094.40 ± 1100.00	3228.80 ± 560.00	<LOD = 570.00	21299.20 ± 1200.00	2508.80 ± 1300.00	<LOD = 2548.80
28		17.4	7/23/2002 19:48:15	48.10 ± 18.00	7814.40 ± 300.00	<LOD = 285.00	<LOD = 101.10	37094.40 ± 1100.00	3228.80 ± 560.00	<LOD = 570.00	21299.20 ± 1200.00	2508.80 ± 1300.00	<LOD = 2548.80
29		7.8	7/23/2002 19:48:17	<LOD = 24.75	1000.00 ± 140.00	<LOD = 180.00	<LOD = 140.25	63385.60 ± 2699.20	<LOD = 1500.00	<LOD = 825.00	6188.80 ± 1000.00	<LOD = 1800.00	<LOD = 2548.80
30	Shutter Ca	35.1	7/23/2002 19:57:00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
31		24.4	7/23/2002 19:57:38	18.80 ± 7.10	532.40 ± 48.50	<LOD = 64.35	<LOD = 46.95	27187.20 ± 610.00	<LOD = 465.00	<LOD = 270.00	2388.80 ± 320.00	<LOD = 600.00	<LOD = 1035.00
32		27.4	7/23/2002 20:07:13	63.90 ± 8.60	836.00 ± 54.00	<LOD = 66.45	<LOD = 25.35	5168.00 ± 180.00	<LOD = 210.00	<LOD = 180.00	3139.20 ± 310.00	<LOD = 555.00	<LOD = 900.00
33	Shutter Ca	37.7	7/24/2002 08:45:40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
34		26.2	7/24/2002 08:50:48	75.60 ± 12.40	3427.20 ± 140.00	168.60 ± 100.00	<LOD = 47.70	6848.00 ± 250.00	<LOD = 270.00	<LOD = 240.00	8089.60 ± 550.00	<LOD = 885.00	<LOD = 1260.00
35		18.5	7/24/2002 08:53:03	145.20 ± 18.80	5878.40 ± 220.00	<LOD = 225.00	<LOD = 78.00	23193.60 ± 680.00	<LOD = 555.00	<LOD = 390.00	18598.40 ± 1000.00	<LOD = 1500.00	<LOD = 1950.00
36		15.8	7/24/2002 08:56:33	142.00 ± 37.20	14694.40 ± 720.00	<LOD = 570.00	<LOD = 270.00	203980.80 ± 8096.00	<LOD = 2548.80	<LOD = 1424.40	33075.20 ± 2400.00	<LOD = 3448.80	<LOD = 5097.60
37		17.3	7/24/2002 09:01:10	45.90 ± 18.90	6566.40 ± 290.00	<LOD = 300.00	<LOD = 107.55	34380.80 ± 1200.00	<LOD = 825.00	<LOD = 510.00	3689.60 ± 590.00	<LOD = 1035.00	<LOD = 1800.00
38		17.1	7/24/2002 09:06:34	54.80 ± 19.30	9395.20 ± 350.00	<LOD = 315.00	<LOD = 109.65	44595.20 ± 1300.00	<LOD = 855.00	<LOD = 495.00	4428.80 ± 610.00	<LOD = 1125.00	<LOD = 1800.00
39		12.0	7/24/2002 09:14:05	48.30 ± 15.40	692.40 ± 94.60	<LOD = 123.60	<LOD = 79.05	26777.60 ± 1000.00	<LOD = 810.00	<LOD = 570.00	24000.00 ± 1600.00	<LOD = 2250.00	<LOD = 2700.00
40		15.7	7/24/2002 09:48:57	74.30 ± 16.90	5120.00 ± 220.00	460.40 ± 160.00	<LOD = 77.40	12096.00 ± 460.00	<LOD = 450.00	<LOD = 345.00	10598.40 ± 800.00	<LOD = 1230.00	<LOD = 1650.00
41	Shutter Ca	32.6	7/24/2002 11:29:13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
42		31.2	7/24/2002 11:31:30	313.00 ± 16.10	<LOD = 30.15	<LOD = 27.90	<LOD = 13.35	96.00 ± 38.30	<LOD = 88.05	<LOD = 195.00	21388.80 ± 790.00	<LOD = 1140.00	<LOD = 1334.40
43		25.1	7/24/2002 11:34:52	291.60 ± 15.40	133.60 ± 26.30	<LOD = 31.95	<LOD = 13.20	381.80 ± 51.00	<LOD = 90.60	<LOD = 180.00	16691.20 ± 670.00	<LOD = 975.00	<LOD = 1170.00
44		27.5	7/24/2002 11:45:32	176.40 ± 11.80	909.60 ± 52.90	<LOD = 65.70	<LOD = 22.35	1540.00 ± 87.80	<LOD = 122.85	<LOD = 180.00	20697.60 ± 720.00	<LOD = 1065.00	<LOD = 1244.40
45		20.3	7/24/2002 11:51:16	152.90 ± 12.10	626.80 ± 48.70	<LOD = 60.60	<LOD = 19.95	1309.60 ± 89.30	<LOD = 126.60	<LOD = 195.00	17497.60 ± 730.00	<LOD = 1095.00	<LOD = 1260.00
46		23.1	7/24/2002 11:56:21	159.90 ± 13.70	1249.60 ± 73.90	<LOD = 89.55	<LOD = 30.15	3209.60 ± 150.00	<LOD = 195.00	<LOD = 225.00	17395.20 ± 780.00	<LOD = 1170.00	<LOD = 1364.40
47		28.4	7/24/2002 12:10:09	158.80 ± 13.80	2600.00 ± 110.00	<LOD = 121.20	<LOD = 40.35	7456.00 ± 240.00	366.20 ± 180.00	<LOD = 240.00	15488.00 ± 710.00	<LOD = 1080.00	<LOD = 1350.00
48		28.4	7/24/2002 12:18:11	158.80 ± 13.80	2600.00 ± 110.00	<LOD = 121.20	<LOD = 40.35	7456.00 ± 240.00	366.20 ± 180.00	<LOD = 240.00	15488.00 ± 710.00	<LOD = 1080.00	<LOD = 1350.00
49		0.7	7/24/2002 12:18:11	215.20 ± 80.70	<LOD = 270.00	<LOD = 255.00	<LOD = 97.50	582.80 ± 370.00	<LOD = 675.00	<LOD = 1170.00	21696.00 ± 4697.60	<LOD = 6148.80	<LOD = 7948.80
50		0.7	7/24/2002 12:18:14	182.10 ± 73.40	<LOD = 255.00	<LOD = 225.00	<LOD = 99.45	<LOD = 390.00	<LOD = 495.00	<LOD = 1140.00	17600.00 ± 4198.40	<LOD = 6748.80	<LOD = 7646.40
51		0.7	7/24/2002 12:18:17	182.10 ± 73.40	<LOD = 255.00	<LOD = 225.00	<LOD = 99.45	<LOD = 390.00	<LOD = 495.00	<LOD = 1140.00	17600.00 ± 4198.40	<LOD = 6748.80	<LOD = 7646.40
52		23.8	7/24/2002 12:19:49	187.60 ± 12.30	200.50 ± 29.10	<LOD = 38.25	<LOD = 13.95	479.60 ± 55.10	<LOD = 94.80	<LOD = 180.00	20595.20 ± 750.00	<LOD = 1110.00	<LOD = 1320.00
53		23.0	7/24/2002 12:26:51	205.20 ± 12.60	<LOD = 27.00	<LOD = 24.00	<LOD = 11.55	145.60 ± 37.00	<LOD = 78.75	<LOD = 180.00	20595.20 ± 740.00	<LOD = 1080.00	<LOD = 1244.40
54		21.4	7/24/2002 12:31:51	171.10 ± 14.00	1049.60 ± 67.80	<LOD = 82.65	<LOD = 27.00	1449.60 ± 100.00	<LOD = 149.55	<LOD = 225.00	19494.40 ± 829.60	<LOD = 1230.00	<LOD = 1440.00
55		20.3	7/24/2002 12:43:06	239.00 ± 15.30	444.40 ± 44.00	<LOD = 56.40	<LOD = 21.45	945.60 ± 80.70	<LOD = 125.25	<LOD = 210.00	22489.60 ± 869.60	<LOD = 1230.00	<LOD = 1440.00
56		24.6	7/24/2002 12:48:52	146.20 ± 13.70	902.40 ± 65.80	<LOD = 81.30	<LOD = 37.65	10694.40 ± 330.00	<LOD = 330.00	<LOD = 270.00	14592.00 ± 750.00	<LOD = 1125.00	<LOD = 1394.40
57		20.6	7/24/2002 12:52:18	191.50 ± 22.90	10400.00 ± 340.00	406.00 ± 210.00	<LOD = 103.65	36096.00 ± 1000.00	728.00 ± 470.00	<LOD = 465.00	21888.00 ± 1100.00	<LOD = 1650.00	<LOD = 2100.00
58		15.7	7/24/2002 12:57:14	<LOD = 118.20	62771.20 ± 3699.20	2779.20 ± 1000.00	<LOD = 555.00	332800.00 ± 18995.20	5878.40 ± 1899.20	<LOD = 2400.00	42777.60 ± 4000.00	<LOD = 5400.00	<LOD = 8548.80
59		20.5	7/24/2002 13:33:23	83.50 ± 11.40	1609.60 ± 87.20	109.10 ± 70.60	<LOD = 36.90	5798.40 ± 220.00	<LOD = 255.00	<LOD = 225.00	6377.60 ± 480.00	<LOD = 795.00	<LOD = 1095.00
60		20.7	7/24/2002 13:38:29	170.90 ± 14.70	303.20 ± 42.10	<LOD = 54.45	<LOD = 20.85	9					

XLNo	Cor1	Ssec	Date/Time	Sr ± Prec	Pb ± Prec	As ± Prec	Hg ± Prec	Zn ± Prec	Cu ± Prec	Ni ± Prec	Fe ± Prec	Mn ± Prec	Cr ± Prec
6		0.7	7/22/2002 16:26:14	<LOD = 39.00	<LOD = 69.30	<LOD = 72.00	<LOD = 51.60	<LOD = 144.90	<LOD = 285.00	<LOD = 585.00	<LOD = 840.00	<LOD = 1155.00	<LOD = 1800.00
7		53.5	7/22/2002 16:26:41	61.70 ± 4.30	<LOD = 11.55	<LOD = 10.35	<LOD = 5.70	<LOD = 18.45	<LOD = 32.70	<LOD = 60.30	194.30 ± 68.10	<LOD = 146.10	<LOD = 300.00
8		2.7	7/22/2002 16:36:54	36.10 ± 16.20	<LOD = 66.75	<LOD = 57.60	<LOD = 25.65	<LOD = 90.75	<LOD = 145.20	<LOD = 285.00	<LOD = 555.00	<LOD = 735.00	<LOD = 1500.00
9		5.5	7/22/2002 16:37:15	47.60 ± 12.40	<LOD = 39.60	<LOD = 30.45	<LOD = 17.25	<LOD = 54.60	<LOD = 96.75	<LOD = 180.00	<LOD = 315.00	<LOD = 450.00	<LOD = 870.00
10		36.4	7/22/2002 16:41:50	54.80 ± 5.10	<LOD = 15.15	<LOD = 13.05	<LOD = 6.45	<LOD = 22.65	<LOD = 40.65	<LOD = 71.40	<LOD = 117.60	<LOD = 180.00	<LOD = 375.00
14		27.9	7/23/2002 13:09:12	63.60 ± 10.60	2320.00 ± 100.00	<LOD = 117.00	<LOD = 42.90	12396.80 ± 350.00	434.00 ± 230.00	<LOD = 240.00	2908.80 ± 340.00	<LOD = 615.00	<LOD = 975.00
15		30.5	7/23/2002 13:13:28	83.30 ± 10.60	2720.00 ± 100.00	140.30 ± 78.70	<LOD = 43.35	14899.20 ± 360.00	395.00 ± 220.00	<LOD = 225.00	5168.00 ± 390.00	<LOD = 675.00	<LOD = 1020.00
16		16.7	7/23/2002 13:27:14	157.50 ± 58.50	36582.40 ± 1899.20	2840.00 ± 720.00	<LOD = 360.00	146944.00 ± 7296.00	13491.20 ± 1899.20	<LOD = 1950.00	213811.20 ± 12000.00	<LOD = 8846.40	<LOD = 10348.80
17		30.5	7/23/2002 14:47:02	89.20 ± 12.20	2240.00 ± 100.00	<LOD = 120.45	<LOD = 41.40	6816.00 ± 250.00	<LOD = 270.00	<LOD = 225.00	4217.60 ± 410.00	<LOD = 690.00	<LOD = 1020.00
18		25.7	7/23/2002 14:59:00	62.00 ± 8.60	269.80 ± 34.70	<LOD = 45.15	<LOD = 18.00	494.40 ± 59.10	<LOD = 98.25	<LOD = 180.00	8998.40 ± 510.00	<LOD = 765.00	<LOD = 1035.00
19		23.4	7/23/2002 15:30:38	38.70 ± 11.10	1229.60 ± 89.10	<LOD = 109.20	<LOD = 39.45	3779.20 ± 200.00	<LOD = 255.00	<LOD = 330.00	34278.40 ± 1400.00	<LOD = 1950.00	<LOD = 2100.00
20		61.1	7/23/2002 16:19:19	62.60 ± 4.00	<LOD = 11.10	<LOD = 9.75	<LOD = 5.25	<LOD = 18.15	<LOD = 31.35	<LOD = 57.90	231.80 ± 65.30	<LOD = 137.85	<LOD = 285.00
21		65.6	7/23/2002 16:22:31	184.00 ± 7.50	20.80 ± 11.80	<LOD = 15.60	<LOD = 7.80	72.70 ± 21.20	<LOD = 51.30	<LOD = 128.40	27187.20 ± 550.00	<LOD = 765.00	<LOD = 855.00
22		9.8	7/23/2002 16:26:34	203.20 ± 22.00	1120.00 ± 100.00	<LOD = 126.45	<LOD = 38.10	301.60 ± 82.10	<LOD = 165.00	<LOD = 330.00	22988.80 ± 1300.00	<LOD = 1950.00	<LOD = 2250.00
23		64.8	7/23/2002 16:28:00	208.00 ± 8.50	1140.00 ± 39.10	83.40 ± 32.20	<LOD = 14.70	316.40 ± 31.60	<LOD = 59.85	<LOD = 122.40	22092.80 ± 500.00	919.20 ± 490.00	<LOD = 840.00
24		68.6	7/23/2002 16:32:16	305.00 ± 12.00	5587.20 ± 110.00	652.40 ± 77.10	50.90 ± 23.70	7078.40 ± 150.00	3000.00 ± 150.00	<LOD = 210.00	35200.00 ± 740.00	10694.40 ± 820.00	<LOD = 1650.00
26		16.7	7/23/2002 19:42:44	67.70 ± 40.30	19289.60 ± 989.60	<LOD = 690.00	<LOD = 330.00	268902.41 ± 12000.00	4998.40 ± 2099.20	<LOD = 1650.00	12998.40 ± 1800.00	<LOD = 3000.00	<LOD = 5400.00
27		17.4	7/23/2002 19:45:17	48.10 ± 18.00	7814.40 ± 300.00	<LOD = 285.00	<LOD = 101.10	37094.40 ± 1100.00	3228.80 ± 560.00	<LOD = 570.00	21299.20 ± 1200.00	2508.80 ± 1300.00	<LOD = 2548.80
28		17.4	7/23/2002 19:48:15	48.10 ± 18.00	7814.40 ± 300.00	<LOD = 285.00	<LOD = 101.10	37094.40 ± 1100.00	3228.80 ± 560.00	<LOD = 570.00	21299.20 ± 1200.00	2508.80 ± 1300.00	<LOD = 2548.80
29		7.8	7/23/2002 19:48:17	<LOD = 24.75	1000.00 ± 140.00	<LOD = 180.00	<LOD = 140.25	63385.60 ± 2699.20	<LOD = 1500.00	<LOD = 825.00	6188.80 ± 1000.00	<LOD = 1800.00	<LOD = 2548.80
31		24.4	7/23/2002 19:57:38	18.80 ± 7.10	532.40 ± 48.50	<LOD = 64.35	<LOD = 46.95	27187.20 ± 610.00	<LOD = 465.00	<LOD = 270.00	2388.80 ± 320.00	<LOD = 600.00	<LOD = 1035.00
32		27.4	7/23/2002 20:07:13	63.90 ± 8.60	836.00 ± 54.00	<LOD = 66.45	<LOD = 25.35	5168.00 ± 180.00	<LOD = 210.00	<LOD = 180.00	3139.20 ± 310.00	<LOD = 555.00	<LOD = 900.00
34		26.2	7/24/2002 08:50:48	75.60 ± 12.40	3427.20 ± 140.00	168.60 ± 100.00	<LOD = 47.70	6848.00 ± 250.00	<LOD = 270.00	<LOD = 240.00	8089.60 ± 550.00	<LOD = 885.00	<LOD = 1260.00
35		18.5	7/24/2002 08:53:03	145.20 ± 18.80	5878.40 ± 220.00	<LOD = 225.00	<LOD = 78.00	23193.60 ± 680.00	<LOD = 555.00	<LOD = 390.00	18598.40 ± 1000.00	<LOD = 1500.00	<LOD = 1950.00
36		15.8	7/24/2002 08:56:33	142.00 ± 37.20	14694.40 ± 720.00	<LOD = 570.00	<LOD = 270.00	203980.80 ± 8096.00	<LOD = 2548.80	<LOD = 1424.40	33075.20 ± 2400.00	<LOD = 3448.80	<LOD = 5097.60
37		17.3	7/24/2002 09:01:10	45.90 ± 18.90	6566.40 ± 290.00	<LOD = 300.00	<LOD = 107.55	34380.80 ± 1200.00	<LOD = 825.00	<LOD = 510.00	3689.60 ± 590.00	<LOD = 1035.00	<LOD = 1800.00
38		17.1	7/24/2002 09:06:34	54.80 ± 19.30	9395.20 ± 350.00	<LOD = 315.00	<LOD = 109.65	44595.20 ± 1300.00	<LOD = 855.00	<LOD = 495.00	4428.80 ± 610.00	<LOD = 1125.00	<LOD = 1800.00
39		12.0	7/24/2002 09:14:05	48.30 ± 15.40	692.40 ± 94.60	<LOD = 123.60	<LOD = 79.05	26777.60 ± 1000.00	<LOD = 810.00	<LOD = 570.00	24000.00 ± 1600.00	<LOD = 2250.00	<LOD = 2700.00
40		15.7	7/24/2002 09:48:57	74.30 ± 16.90	5120.00 ± 220.00	460.40 ± 160.00	<LOD = 77.40	12096.00 ± 460.00	<LOD = 450.00	<LOD = 345.00	10598.40 ± 800.00	<LOD = 1230.00	<LOD = 1650.00
42		31.2	7/24/2002 11:31:30	313.00 ± 16.10	<LOD = 30.15	<LOD = 27.90	<LOD = 13.35	96.00 ± 38.30	<LOD = 88.05	<LOD = 195.00	21388.80 ± 790.00	<LOD = 1140.00	<LOD = 1334.40
43		25.1	7/24/2002 11:34:52	291.60 ± 15.40	133.60 ± 26.30	<LOD = 31.95	<LOD = 13.20	381.80 ± 51.00	<LOD = 90.60	<LOD = 180.00	16691.20 ± 670.00	<LOD = 975.00	<LOD = 1170.00
44		27.5	7/24/2002 11:45:32	176.40 ± 11.80	909.60 ± 52.90	<LOD = 65.70	<LOD = 22.35	1540.00 ± 87.80	<LOD = 122.85	<LOD = 180.00	20697.60 ± 720.00	<LOD = 1065.00	<LOD = 1244.40
45		20.3	7/24/2002 11:51:16	152.90 ± 12.10	626.80 ± 48.70	<LOD = 60.60	<LOD = 19.95	1309.60 ± 89.30	<LOD = 126.60	<LOD = 195.00	17497.60 ± 730.00	<LOD = 1095.00	<LOD = 1260.00
46		23.1	7/24/2002 11:56:21	159.90 ± 13.70	1249.60 ± 73.90	<LOD = 89.55	<LOD = 30.15	3209.60 ± 150.00	<LOD = 195.00	<LOD = 225.00	17395.20 ± 780.00	<LOD = 1170.00	<LOD = 1364.40
47		28.4	7/24/2002 12:10:09	158.80 ± 13.80	2600.00 ± 110.00	<LOD = 121.20	<LOD = 40.35	7456.00 ± 240.00	366.20 ± 180.00	<LOD = 240.00	15488.00 ± 710.00	<LOD = 1080.00	<LOD = 1350.00
48		28.4	7/24/2002 12:18:11	158.80 ± 13.80	2600.00 ± 110.00	<LOD = 121.20	<LOD = 40.35	7456.00 ± 240.00	366.20 ± 180.00	<LOD = 240.00	15488.00 ± 710.00	<LOD = 1080.00	<LOD = 1350.00
49		0.7	7/24/2002 12:18:11	215.20 ± 80.70	<LOD = 270.00	<LOD = 255.00	<LOD = 97.50	582.80 ± 370.00	<LOD = 675.00	<LOD = 1170.00	21696.00 ± 4697.60	<LOD = 6148.80	<LOD = 7948.80
50		0.7	7/24/2002 12:18:14	182.10 ± 73.40	<LOD = 255.00	<LOD = 225.00	<LOD = 99.45	<LOD = 390.00	<LOD = 495.00	<LOD = 1140.00	17600.00 ± 4198.40	<LOD = 6748.80	<LOD = 7646.40
51		0.7	7/24/2002 12:18:17	182.10 ± 73.40	<LOD = 255.00	<LOD = 225.00	<LOD = 99.45	<LOD = 390.00	<LOD = 495.00	<LOD = 1140.00	17600.00 ± 4198.40	<LOD = 6748.80	<LOD = 7646.40
52		23.8	7/24/2002 12:19:49	187.60 ± 12.30	200.50 ± 29.10	<LOD = 38.25	<LOD = 13.95	479.60 ± 55.10	<LOD = 94.80	<LOD = 180.00	20595.20 ± 750.00	<LOD = 1110.00	<LOD = 1320.00
53		23.0	7/24/2002 12:26:51	205.20 ± 12.60	<LOD = 27.00	<LOD = 24.00	<LOD = 11.55	145.60 ± 37.00	<LOD = 78.75	<LOD = 180.00	20595.20 ± 740.00	<LOD = 1080.00	<LOD = 1244.40
54		21.4	7/24/2002 12:31:51	171.10 ± 14.00	1049.60 ± 67.80	<LOD = 82.65	<LOD = 27.00	1449.60 ± 100.00	<LOD = 149.55	<LOD = 225.00	19494.40 ± 829.60	<LOD = 1230.00	<LOD = 1440.00
55		20.3	7/24/2002 12:43:06	239.00 ± 15.30	444.40 ± 44.00	<LOD = 56.40	<LOD = 21.45	945.60 ± 80.70	<LOD = 125.25	<LOD = 210.00	22489.60 ± 869.60	<LOD = 1230.00	<LOD = 1440.00
56		24.6	7/24/2002 12:48:52	146.20 ± 13.70	902.40 ± 65.80	<LOD = 81.30	<LOD = 37.65	10694.40 ± 330.00	<LOD = 330.00	<LOD = 270.00	14592.00 ± 750.00	<LOD = 1125.00	<LOD = 1394.40
57		20.6	7/24/2002 12:52:18	191.50 ± 22.90	10400.00 ± 340.00	406.00 ± 210.00	<LOD = 103.65	36096.00 ± 1000.00	728.00 ± 470.00	<LOD = 465.00	21888.00 ± 1100.00	<LOD = 1650.00	<LOD = 2100.00
58		15.7	7/24/2002 12:57:14	<LOD = 118.20	62771.20 ± 3699.20	2779.20 ± 1000.00	<LOD = 555.00	312800.00 ± 18995.20	5878.40 ± 2899.20	<LOD = 2400.00	42777.60 ± 4000.00	<LOD = 5400.00	<LOD = 8548.80
59		20.5	7/24/2002 13:33:23	83.50 ± 11.40	1609.60 ± 87.20	109.10 ± 70.60	<LOD = 36.90	5798.40 ± 220.00	<LOD = 255.00	<LOD = 225.00	6377.60 ± 480.00	<LOD = 795.00	<LOD = 1095.00
60		20.7	7/24/2002 13:38:29	170.90 ± 14.70	303.20 ± 42.10	<LOD = 54.45	<LOD = 20.85	900.80 ± 88.10	<LOD = 133.50	<LOD = 240.00	20492.80 ± 920.00	<LOD = 1334.40	<LOD = 1500.00
61		22.1	7/24/2002 13:43:35	75.60 ± 12.30	1629.60 ± 96.10	<LOD = 114.60	<LOD = 39.45	4057.60 ± 200.00	<LOD = 240.00	<LOD = 225.00	2028.80 ± 330.00	<LOD = 615.00	<LOD = 1020.00
62		29.0	7/24/2002 13:47:38	163.40 ± 12.20	675.20 ± 49.10	<LOD = 59.70	<LOD = 21.75	2009.60 ± 110.00	<LOD = 145.05	<LOD = 195.00	20198.40 ± 770.00	<LOD = 1140.00	<LOD = 1320.00
63		25.5	7/24/2002 13:51:53	125.20 ± 13.80	2379.20 ± 110.00	226.60 ± 87.40	<LOD = 42.90	5577.60 ± 220.00	<LOD = 255.00	<LOD = 255.00	17894.40 ± 840.00	<LOD = 1260.00	<LOD = 1500.00
64		21.4	7/24/2002 14:03:37	63.70 ± 11.80	1240.00 ± 86.00	<LOD = 106.20	<LOD = 40.05	6307.20 ± 260.00	306.00 ± 200.00	<LOD = 240.00	2969.60 ± 400.00	<LOD = 750.00	<LOD = 1200.00
65		39.8	7/24/2002 14:26:10	59.80 ± 5.00	<LOD = 14.25	<LOD = 12.45	<LOD = 6.75	<LOD = 22.50	<LOD = 39.30	<LOD = 72.00	258.40 ± 82.20	<LOD = 180.00	<LOD = 360.00
66		41.2	7/24/2002 14:28:16	212.80 ± 10.80	1120.00 ± 48.60	70.30 ± 40.00	<LOD						

APPENDIX C

Photographic Log – The POV Site



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #1**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
10	2	V	NA	PO-102-A-SS-01 PO-102-B-SB-02 PO-102-C-SB-03 PO-102-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 14, 2007

Photographer: Anna Cornelius, START-3

Orientation: South

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #2**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
10	2	V	NA	PO-102-A-SS-01 PO-102-B-SB-02 PO-102-C-SB-03 PO-102-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 14, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #3**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
11	2	V	NA	PO-112-A-SS-01 PO-112-B-SB-02 PO-112-C-SB-03 PO-112-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 14, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #4**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
11	2	V	NA	PO-112-A-SS-01 PO-112-B-SB-02 PO-112-C-SB-03 PO-112-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 14, 2007

Photographer: Anna Cornelius, START-3

Orientation: South

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #5**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	2	V	NA	PO-42-A-SS-01 PO-42-B-SB-02 PO-42-C-SB-03 PO-42-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #6**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	2	V	NA	PO-42-A-SS-01 PO-42-B-SB-02 PO-42-C-SB-03 PO-42-D-SB-04

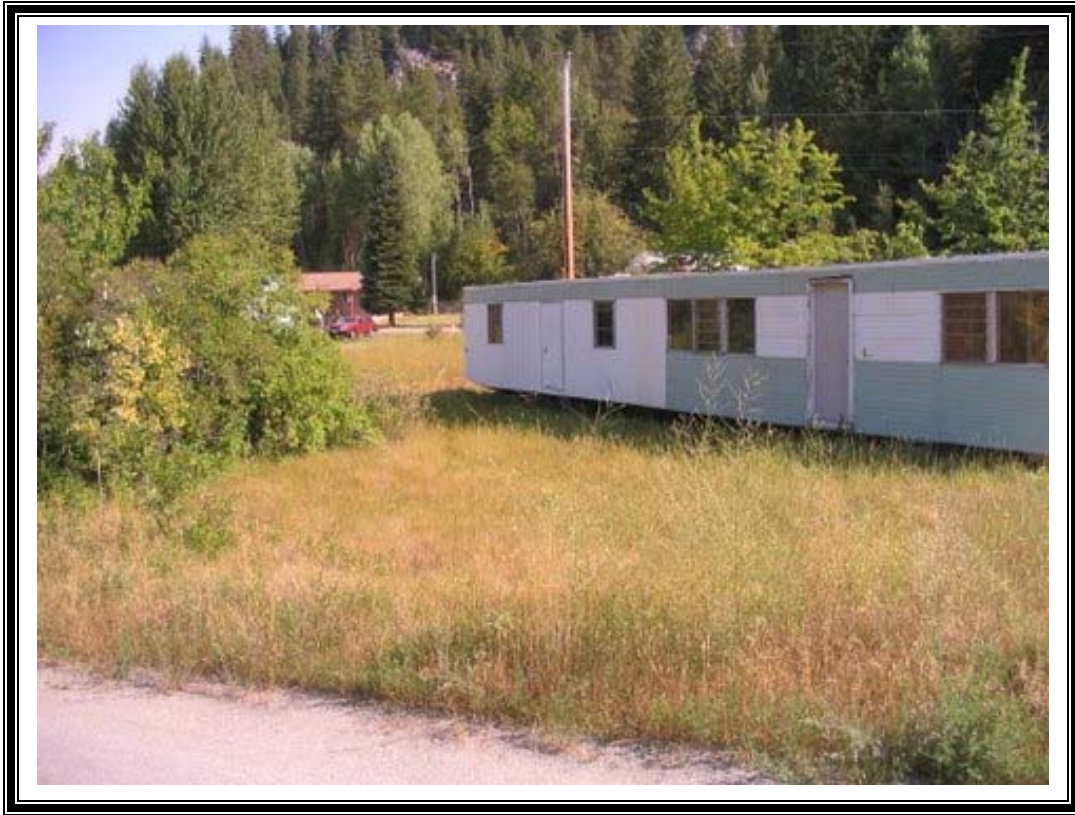
***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #7**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	2	V	NA	PO-52-A-SS-01 PO-52-B-SB-02 PO-52-C-SB-03 PO-52-D-SB-04

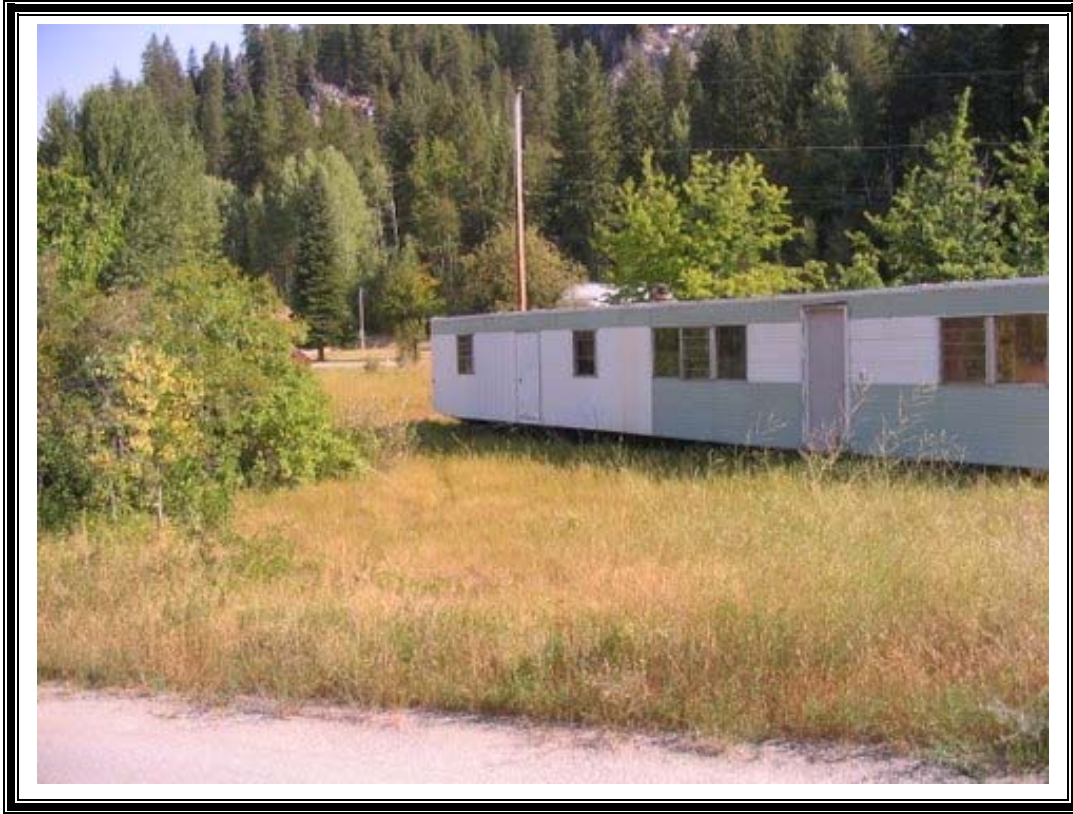
***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #8**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	2	V	NA	PO-52-A-SS-01 PO-52-B-SB-02 PO-52-C-SB-03 PO-52-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #9**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	1	V	NA	PO-41-A-SS-01 PO-41-B-SB-02 PO-41-C-SB-03 PO-41-D-SB-04

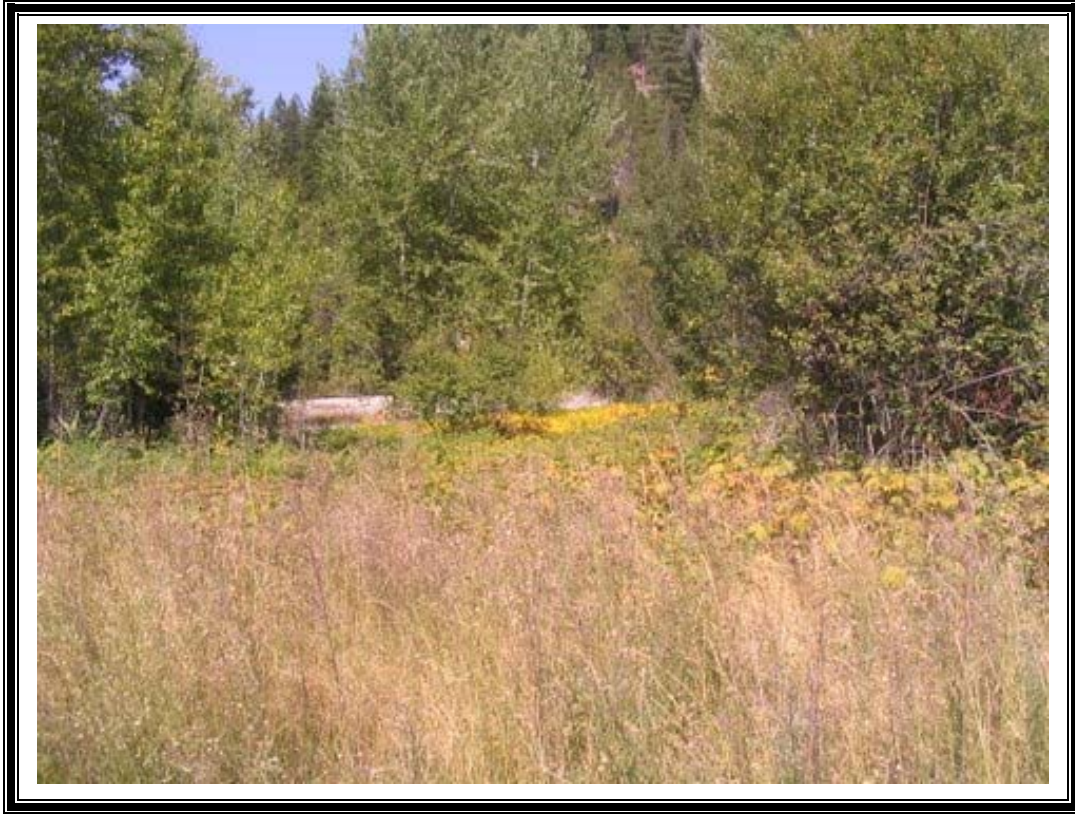
***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #10**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	1	V	NA	PO-41-A-SS-01 PO-41-B-SB-02 PO-41-C-SB-03 PO-41-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #11**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	1	V	NA	PO-41-A-SS-01 PO-41-B-SB-02 PO-41-C-SB-03 PO-41-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Lesa Nelson, START-3



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #12

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	1	V	NA	PO-41-A-SS-01 PO-41-B-SB-02 PO-41-C-SB-03 PO-41-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 15, 2007

Photographer: Anna Cornelius, START-3

Orientation: Down

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #13**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	5	V	NA	PO-35-A-SS-01 PO-35-B-SB-02 PO-35-C-SB-03 PO-35-C-SB-09 PO-35-D-SB-04 PO-35-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: South

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #14**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	5	V	NA	PO-35-A-SS-01 PO-35-B-SB-02 PO-35-C-SB-03 PO-35-C-SB-09 PO-35-D-SB-04 PO-35-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #15**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	5	V	NA	PO-35-A-SS-01 PO-35-B-SB-02 PO-35-C-SB-03 PO-35-C-SB-09 PO-35-D-SB-04 PO-35-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: South

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #16**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	2	F	122 Larsen Boulevard	PO-32-A-SS-01 PO-32-B-SB-02 PO-32-C-SB-03 PO-32-C-SB-09 PO-32-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #17**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	2	B	122 Larsen Boulevard	PO-32-A-SS-05 PO-32-B-SB-06 PO-32-C-SB-07 PO-32-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #18**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	5	V	NA	PO-45-A-SS-01 PO-45-B-SB-02 PO-45-C-SB-03 PO-45-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #19**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
4	5	V	NA	PO-45-A-SS-01 PO-45-B-SB-02 PO-45-C-SB-03 PO-45-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #20**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
12	2	B	61A and 63A A Street	PO-122-A-SS-05 PO-122-B-SB-06 PO-122-C-SB-07 PO-122-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #21**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
12	2	F	61A and 63A A Street	PO-122-A-SS-01 PO-122-B-SB-02 PO-122-C-SB-03 PO-122-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #22**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
9	2	F	117, 118, and 119 A Street	PO-92-A-SS-01 PO-92-B-SB-02 PO-92-C-SB-03 PO-92-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #23**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
9	2	B	117, 118, and 119 A Street	PO-92-A-SS-05 PO-92-B-SB-06 PO-92-C-SB-07 PO-92-D-SB-08 PO-92-D-SB-09

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: West

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #24**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
8	2	B	161 and 163 A Street	PO-82-A-SS-05 PO-82-B-SB-06 PO-82-C-SB-07 PO-82-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #25**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
8	2	F	161 and 163 A Street	PO-82-A-SS-01 PO-82-B-SB-02 PO-82-C-SB-03 PO-82-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #26**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
8	2	B	161 and 163 A Street	PO-82-A-SS-05 PO-82-B-SB-06 PO-82-C-SB-07 PO-82-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 16, 2007

Photographer: Anna Cornelius, START-3

Orientation: Down

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #27**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
8	2	B	161 and 163 A Street	PO-82-A-SS-05 PO-82-B-SB-06 PO-82-C-SB-07 PO-82-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #28**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	1	V	NA	PO-51-A-SS-01 PO-51-B-SB-02 PO-51-C-SB-03 PO-51-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #29**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	1	V	NA	PO-51-A-SS-01 PO-51-B-SB-02 PO-51-C-SB-03 PO-51-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: East/Southeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #30**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
7	2	V	NA	PO-72-A-SS-01 PO-72-B-SB-02 PO-72-C-SB-03 PO-72-C-SB-09 PO-72-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #31**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
7	2	V	NA	PO-72-A-SS-01 PO-72-B-SB-02 PO-72-C-SB-03 PO-72-C-SB-09 PO-72-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southeast

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #32**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
6	1	V	NA	PO-61-A-SS-01 PO-61-B-SB-02 PO-61-C-SB-03 PO-61-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northwest

Witness: Richard Fife, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #33**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
6	1	V	NA	PO-61-A-SS-01 PO-61-B-SB-02 PO-61-C-SB-03 PO-61-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #34**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
7	3	V	NA	PO-73-A-SS-01 PO-73-A-SS-09 PO-73-B-SB-02 PO-73-C-SB-03 PO-73-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: West/Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #35**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
7	3	V	NA	PO-73-A-SS-01 PO-73-A-SS-09 PO-73-B-SB-02 PO-73-C-SB-03 PO-73-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: West/Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #36**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
6	3	V	NA	PO-63-A-SS-01 PO-63-B-SB-02 PO-63-C-SB-03 PO-63-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: West/Northwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #37**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
6	3	V	NA	PO-63-A-SS-01 PO-63-B-SB-02 PO-63-C-SB-03 PO-63-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #38**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	3	F	95 B Street	PO-53-A-SS-01 PO-53-B-SB-02 PO-53-C-SB-03 PO-53-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #39**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	3	B	95 B Street	PO-53-A-SS-05 PO-53-B-SB-06 PO-53-B-SB-09 PO-53-C-SB-07 PO-53-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #40**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
5	3	B	95 B Street	PO-53-A-SS-05 PO-53-B-SB-06 PO-53-B-SB-09 PO-53-C-SB-07 PO-53-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 17, 2007

Photographer: Anna Cornelius, START-3

Orientation: West/Southwest

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #41**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	1	B	95 B Street	PO-21-A-SS-05 PO-21-B-SB-06 PO-21-C-SB-07 PO-21-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #42**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Comment
2	1	F	95 B Street	This dirt was observed in the Tailings Pond.

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #43**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	1	F	95 B Street	PO-21-A-SS-01 PO-21-B-SB-02 PO-21-C-SB-03 PO-21-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #44**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	3	F	12 C Street	PO-23-A-SS-01 PO-23-B-SB-02 PO-23-C-SB-03 PO-23-D-SB-04 PO-23-D-SB-09

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #45**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	3	F	12 C Street	PO-23-A-SS-01 PO-23-B-SB-02 PO-23-C-SB-03 PO-23-D-SB-04 PO-23-D-SB-09

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: East

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #46**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	3	F	12 C Street	PO-23-A-SS-01 PO-23-B-SB-02 PO-23-C-SB-03 PO-23-D-SB-04 PO-23-D-SB-09

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #47**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
2	3	B	12 C Street	PO-23-A-SS-05 PO-23-B-SB-06 PO-23-C-SB-07 PO-23-D-SB-08

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: West

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #48**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
1	3	V	NA	PO-13-A-SS-01 PO-13-B-SB-02 PO-13-C-SB-03 PO-13-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #49

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
1	3	V	NA	PO-13-A-SS-01 PO-13-B-SB-02 PO-13-C-SB-03 PO-13-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #50**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	3	V	NA	PO-33-A-SS-01 PO-33-B-SB-02 PO-33-C-SB-03 PO-33-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #51**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	3	V	NA	PO-33-A-SS-01 PO-33-B-SB-02 PO-33-C-SB-03 PO-33-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

Photographer: Anna Cornelius, START-3

Orientation: Northeast

Witness: Lesa Nelson, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PEND OREILLE VILLAGE
PHOTOGRAPH #52**

Lot	Block	Front Yard (F) / Backyard (B) / Vacant Lot (V)	Address (if applicable)	Samples Collected
3	3	V	NA	PO-33-A-SS-01 PO-33-B-SB-02 PO-33-C-SB-03 PO-33-D-SB-04

***Pin flags shown in photograph denote aliquot locations*

Date: August 18, 2007

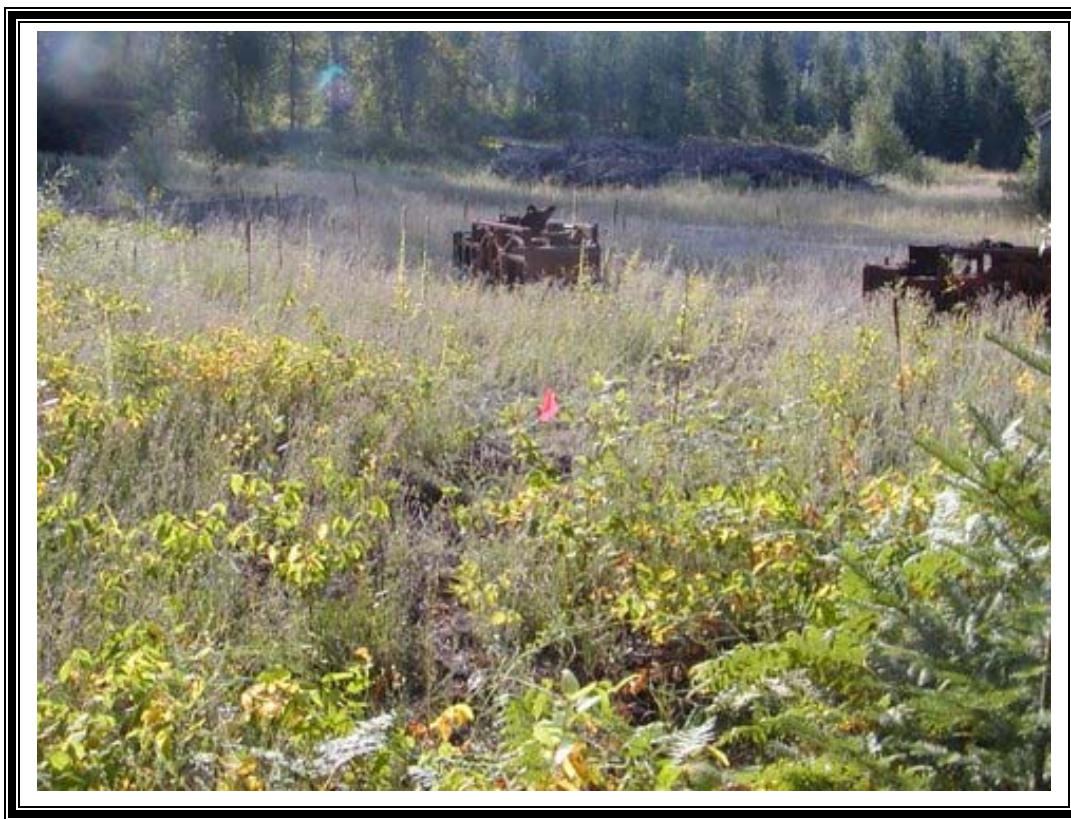
Photographer: Anna Cornelius, START-3

Orientation: North

Witness: Lesa Nelson, START-3

APPENDIX D

Photographic Log – The Upper Level Site



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #1**

Description: Photograph of UL-SS-01 with UL-SS-02 in the background.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: East

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #2**

Description: Photograph of UL-SS-01.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: South

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #3**

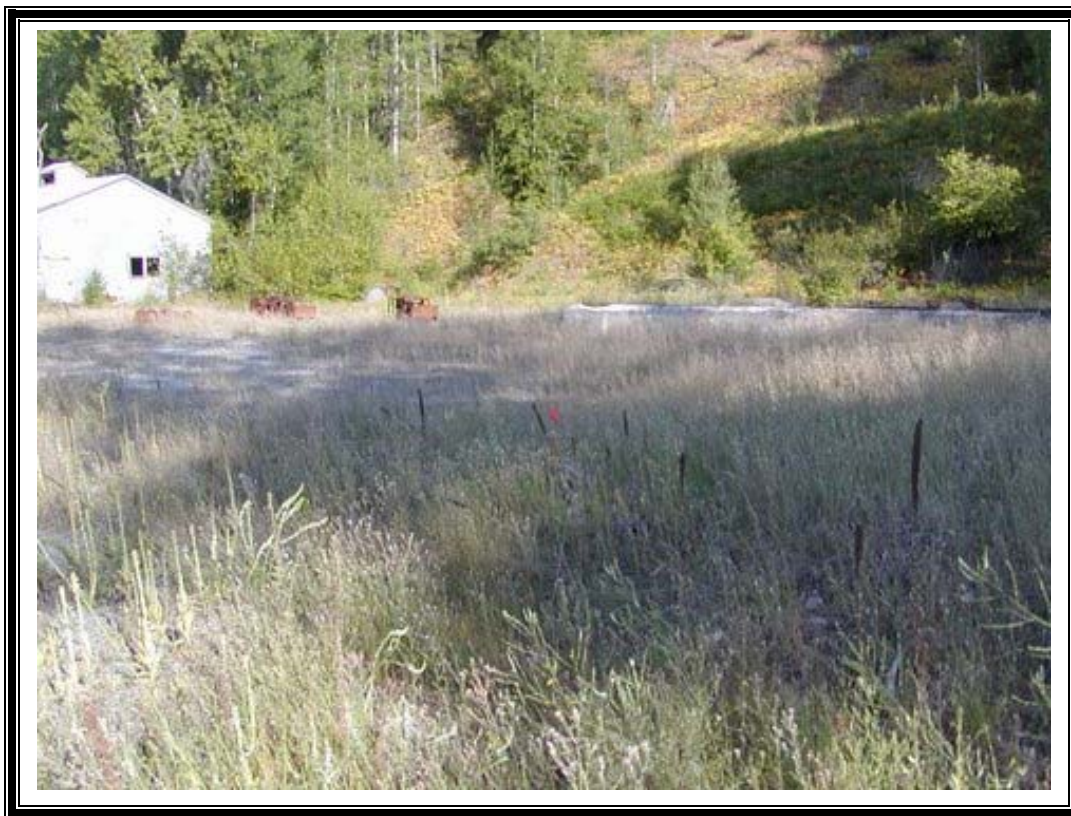
Description: Photograph of UL-SS-01.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: South

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #4**

Description: Photograph of UL-SS-02.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: Northwest

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #5**

Description: Photograph of UL-SS-02.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: West

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #6**

Description: Photograph of UL-SS-02.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: West

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #7**

Description: Photograph of UL-SS-03.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: North

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #8**

Description: Photograph of UL-SS-03.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: Northeast

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #9**

Description: Photograph of UL-SS-04.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: East

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #10**

Description: Photograph of UL-SS-04.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: West

Witness: Malia Crane, START-3



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GRANDVIEW MINE- UPPER LEVEL
PHOTOGRAPH #11**

Description: Photograph of UL-SS-04.

Date: August 17, 2007

Photographer: Bryan McKinnon, START-3

Orientation: West

Witness: Malia Crane, START-3

APPENDIX E

Data Summary Tables – The POV Site

TABLE 7
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 2, Block 1 122 A Street								
			PO-21-A-SS-01	PO-21-B-SB-02	PO-21-C-SB-03	PO-21-D-SB-04	PO-21-A-SS-05	PO-21-B-SB-06	PO-21-C-SB-07	PO-21-D-SB-08	PO-21-C-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	1.4 J	6.3 R	6.6 R	6.9 R	6.5 R	6.3 R	6.4 R	6.4 R	6.6 R
Arsenic	22	20	4.9	4.5	4.4	4.1	5.2	4.7	3.8	5.1	4.6
Barium	15,642	NL	133 J	121 J	109 J	147 J	401 J	291 J	138 J	123 J	120 J
Beryllium	154	NL	0.41 J	0.4 J	0.43 J	0.48 J	0.54 J	0.54	0.56	0.52 J	0.42 J
Cadmium	39	2	0.76	1.0	0.32 J	0.4 J	0.73	0.34 J	0.35 J	0.36 J	0.34 J
Chromium	211	2,000 ^c	20.1	18.4	17.7	14.3	19.6	17.2	18.7	14.4	15.9
Cobalt	903	NL	7.9	7.6	7.5	6.4	7.5	7.5	7.3	6.7	8.2
Copper	2,905	NL	22.1	19.6	22.4	20.4	19	15.1	24.1	22.2	28
Iron	54,750	NL	17,600	17,400	16,700	15,400	17,100	19,200	18,000	16,000	16,900
Lead	400	250	85.2	38.7	22.8	18.4	50.7	26.6	20.9	15.4	32.4
Manganese	3,239	NL	422 J	456 J	369 J	345 J	2,370 J	560 J	358 J	349 J	471 J
Nickel	1,564	NL	18.6	17.4	16.8	15.1	16.9	17.6	16.5	14.8	16.7
Selenium	391	NL	3.7 UJ	3.7 UJ	3.9 UJ	4.0 UJ	3.8 UJ	3.7 UJ	3.7 UJ	3.7 UJ	3.8 UJ
Silver	391	NL	1.1 U	1.0 U	1.1 U	1.2 U	0.27 U	1.0 U	1.1 U	0.22 U	0.13 U
Thallium	5.5	NL	2.6 U	2.6 U	2.8 U	2.9 U	2.7 U	2.6 U	2.7 U	2.7 U	2.7 U
Vanadium	391	NL	30.1	30.5	30.7	24.5	29.8	27	34.6	28.9	27.6
Zinc	23,464	NL	214 J	301 J	82.8 J	82.4 J	211 J	114 J	92.3 J	78.3 J	86.7 J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 4, Block 1 Undeveloped Lot					Lot 5, Block 1 Undeveloped Lot			
			PO-41-A-SS-01	PO-41-B-SB-02	PO-41-C-SB-03	PO-41-D-SB-04	PO-41-A-SS-09	PO-51-A-SS-01	PO-51-B-SB-02	PO-51-C-SB-03	PO-51-D-SB-04
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.3 R	6.3 R	6.2 R	1.6 J	1.1 J	1.2 J	1.2 J	1.4 J	1.2 J
Arsenic	22	20	6.2	4.8	4.5	4.6	5.7	10.2	6.2	6.1	3.9
Barium	16,000	NL	200 J	158 J	157 J	165 J	179 J	98.6 J	195 J	120 J	92.6 J
Beryllium	150	NL	0.59	0.59	0.55	0.6	0.59	0.31 J	0.44 J	0.4 J	0.39 J
Cadmium	39	2	0.61	0.56	0.52 J	0.47 J	0.56	6.8	3.2	5.8	0.21 J
Chromium	210	2,000 ^c	19.7	19.1	17.2	18.8	17.2	11.6	16.5	15.8	18.3
Cobalt	900	NL	7.6	8.1	8.2	8.0	7.4	4.7 J	7.4	7.5	8.8
Copper	NA	NL	21.7	24.2	23.7	27.4 J	22.8 J	54.1	56.5	38.9	17.9
Lead	400	250	31.7	22.4	23.8	26.9 J	30.5 J	357	251	292	19.8
Manganese	3,200	NL	699 J	461	433 J	362	627	376 J	302 J	355 J	326 J
Nickel	1,600	NL	20.8	21	19.6	19.8	20.2	15.7	19.3	18.5	20.6
Selenium	390	NL	3.7 UJ	3.7 UJ	3.6 UJ	3.6 U	3.6 UJ	3.6 UJ	3.7 UJ	3.7 UJ	3.6 UJ
Silver	390	NL	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.13 U	0.25 U	1 U
Thallium	5.5	NL	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.6 U
Vanadium	390	NL	38.3	37.7	36.8	38.9	36.5	25.4	29.3	28.6	28.3
Zinc	23,000	NL	291 J	144 J	105 J	103	250	2,040 J	652 J	1,460 J	90.4 J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 6, Block 1 Undeveloped Lot				Lot 4, Block 2 Undeveloped Lot			
			PO-61-A-SS-01	PO-61-S-SB-02	PO-61-C-SB-03	PO-61-D-SB-04	PO-42-A-SS-01	PO-42-B-SB-02	PO-42-C-SB-03	PO-42-D-SB-04
Inorganics - Total (mg/kg)										
Antimony	31	NL	1.3 J	1.3 J	6.2 R	6.2 R	6.3 R	6.6 R	6.3 R	1.2 J
Arsenic	22	20	4.2	5.0	4.4	4.1	5.0	5.0	4.2	4.4
Barium	16,000	NL	114 J	134 J	144 J	130 J	172 J	212 J	112 J	108 J
Beryllium	150	NL	0.4 J	0.47 J	0.48 J	0.42 J	0.46 J	0.52 J	0.4 J	0.43 J
Cadmium	39	2	1.8	0.56	0.69	0.47 J	0.39 J	0.41 J	0.28 J	0.32 J
Chromium	210	2,000 ^c	15.9	15.7	16.8	16	18.4	17.5	14.7	20.7
Cobalt	900	NL	7.0	7.4	8.0	7.8	7.9	7.9	7.4	8.4
Copper	NA	NL	22.9	23.1 J	24.4 J	22.6 J	20	19.6	21.3 J	26.1 J
Lead	400	250	136 J	36.1 J	24.3 J	20.74 J	26.5	20	16 J	18.2 J
Manganese	3,200	NL	602	520	503	360	567 J	876 J	397	343
Nickel	1,600	NL	17.5	18.5	20.4	21	17.9	16.8	17.4	22
Selenium	390	NL	3.6 UJ	3.6 UJ	3.6 UJ	3.6 UJ	3.7 UJ	3.8 UJ	3.7 UJ	3.6 UJ
Silver	390	NL	1.0 U	1.0 U	0.12 U	1.0 U	1.0 U	1.1 U	0.29 U	1.0 U
Thallium	5.5	NL	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U	2.6 U
Vanadium	390	NL	27.5 J	28.6	27.1	27.6 J	31	30	25 J	34.1 J
Zinc	23,000	NL	498	141	169	119	114 J	88.7 J	71.4	76.7

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 3, Block 2 122 & 124 Larson Boulevard								
			PO-32-A-SS-01	PO-32-B-SB-02	PO-32-C-SB-03	PO-32-D-SB-04	PO-32-A-SS-05	PO-32-B-SB-06	PO-32-C-SB-07	PO-32-D-SB-08	PO-32-C-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.2 R	1.2 J	6.9 R	1.4 J	6.3 R	6.4 R	1.2 J	6.4 R	6.6 R
Arsenic	22	20	6.3	5.5	5.7	5.1	4.8	5.4	4.4	4.8	5.6
Barium	16,000	NL	119 J	150 J	176 J	139 J	137	159 J	162 J	95 J	163 J
Beryllium	150	NL	0.41 J	0.43 J	0.5 J	0.48 J	0.46 J	0.47 J	0.43 J	0.4 J	0.49
Cadmium	39	2	8.2	1.6	0.83	0.65	0.48 J	0.48 J	0.35 J	0.2 J	0.8
Chromium	210	2,000 ^c	16.8	15.7	17.4	16.6	17.2	15.7	17.3	17	17.5
Cobalt	900	NL	6.3	6.8	7.6	7.1	6.8	6.9	7.6	7.1	7.8
Copper	NA	NL	24.9 J	19.9 J	22.9 J	21.7 J	23 J	21.2 J	22.4 J	20.6 J	22.8 J
Lead	400	250	290 J	66.9 J	37.2 J	23.4 J	27.4 J	22.7 J	14.8	12.2 J	39.3 J
Manganese	3,200	NL	396	452	744	425	370	495	440	349	664
Nickel	1,600	NL	16.1	17.1	17.3	17.4	15.7	15.6	17	16.40	17.6
Selenium	390	NL	3.6 UJ	3.8 UJ	4.0 UJ	3.9 UJ	3.7 UJ	3.7 UJ	3.8 UJ	3.8 UJ	3.9 UJ
Silver	390	NL	1.0 U	1.1 U	1.1 U	0.12 U	1.0 U	1.1 U	1.1 U	1.1 U	1.1 U
Thallium	5.5	NL	2.60 U	2.70 U	2.90 U	2.80 U	2.60 U	2.70 U	2.70 U	2.7 U	2.80 U
Vanadium	390	NL	27.8 J	27	29.5 J	29.1 J	27.9 J	27.8 J	30 J	30.5 J	29.3 J
Zinc	23,000	NL	2,370	489	208	189	133	116	89.3	68	215

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 7, Block 2 Undeveloped Lot					Lot 10, Block 2 Undeveloped Lot			
			PO-72-A-SS-01	PO-72-B-SB-02	PO-72-C-SB-03	PO-72-D-SB-04	PO-72-C-SB-09	PO-102-A-SS-01	PO-102-B-SB-02	PO-102-C-SB-03	PO-102-D-SB-04
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.2 UJ	6.3 UJ	6.6 UJ	6.6 UJ	6.6 UJ	1.2 J	1.3 J	6.4 R	1.2 J
Arsenic	22	20	1.6 U	1.1 UJ	1.1 U	1.1 U	1.3 U	5.3	4.5	3.4	4.2
Barium	16,000	NL	174	180	152	165	164	147	131	209	67.5
Beryllium	150	NL	0.5 J	0.49 J	0.63	0.62	0.64	0.41 J	0.50 J	0.45 J	0.33 J
Cadmium	39	2	0.99	1.2	0.86	0.93	0.83	0.45 J	0.29 J	0.25 J	0.17 J
Chromium	210	2,000 ^c	19.8	22.1	15.3	17.9	16	18.1	14.3	15.5	17.7
Cobalt	900	NL	8.1	7.1	7.8	8.8	7.5	7.8	6.9	7.5	7.5
Copper	NA	NL	27.6	22.3	26.3	29.2	23.6	21.6	24.3	19.9	20
Lead	400	250	43.1 J	32.1 J	18.5 J	19.9	20.1 J	32.7	11.3	9.7	8.7
Manganese	3,200	NL	673	737	394	456	364	633	223	299	293
Nickel	1,600	NL	20.7	24.5	21	24.4	21.8	17.2	15	15.7	16.1
Selenium	390	NL	3.6 U	3.7 U	3.9 U	3.0 U	3.8 U	3.7 UJ	3.7 UJ	3.8 UJ	3.7 UJ
Silver	390	NL	0.41 U	1.1 U	1.1 U	1.1 U	0.36 U	1.1 U	0.31 U	1.1 U	1.1
Thallium	5.5	NL	2.6 U	2.6 U	2.8 U	2.8 U	2.7 U	2.6 U	2.6 U	2.7 U	2.7 U
Vanadium	390	NL	36.3	33.8	30.5	33.8	29.8	29.2	25.9	27.5	27.9
Zinc	23,000	NL	153	138	99.5	92.2	108	125	62.5	54.6	50.8

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 8, Block 2 161 & 163 A Street							
			PO-82-A-SS-01	PO-82-B-SB-02	PO-82-C-SB-03	PO-82-D-S-04	PO-82-A-SS-05	PO-82-B-SB-06	PO-82-C-SB-07	PO-82-D-SB-08
Inorganics - Total (mg/kg)										
Antimony	31	NL	6.3 R	6.2 R	6.4 R	6.3 R	6.2 R	6.2 R	6.6 R	6.3 R
Arsenic	22	20	5.0	5.2	3.1	3.3	4.2	2.5	0.88 J	1.8
Barium	16,000	NL	115	117	104	81	154	256	176	205
Beryllium	150	NL	0.43 J	0.49 J	0.49 J	0.4 J	0.47 J	0.54	0.69	0.66
Cadmium	39	2	0.61	0.52 J	0.81	0.67	1.6	1.1	0.9	0.84
Chromium	210	2,000 ^c	18.2	18	18.3 J	18.4 J	17.9 J	17.6 J	16.6 J	17 J
Cobalt	900	NL	7.9	7.5	7.8	7.8 J	8.1	8.8	7.4	8.4
Copper	NA	NL	25.9	25.8	26 J	24 J	22.9 J	23.3 J	20.1 J	25.4 J
Lead	400	250	70.9	40.4	18.4	14.1	218	55.9	21.4	16
Manganese	3,200	NL	377	379	356	367	692	1,720	536	354
Nickel	1,600	NL	21.1	22.1	21	20.5	20.4	20.1	21	20.4
Selenium	390	NL	3.7 UJ	3.6 UJ	3.7 U	3.7 U	3.6 U	3.6 U	3.8 U	3.7 U
Silver	390	NL	1.1 U	1.0 U	1.1 UJ	1.1 UJ	1.0 UJ	1.0 UJ	1.1 UJ	1.1 UJ
Thallium	5.5	NL	2.6 U	2.6 U	2.7 U	2.6 U	2.6 U	2.6 U	2.7 U	2.6 U
Vanadium	390	NL	35.9	37.9	37.7	38.1	32.8	36	31.3	33.1
Zinc	23,000	NL	148	119	90.6	72.5	356.0	165	124	78.4

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 9, Block 2 119 A Street								
			PO-92-A-SS-01	PO-92-S-SB-02	PO-92-C-SB-03	PO-92-D-SB-04	PO-92-A-SS-05	PO-92-B-SB-06	PO-92-C-SB-07	PO-92-D-SB-08	PO-92-D-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.5 UJ	6.8 UJ	6.7 UJ	6.6 UJ	6.4 UJ	6.3 UJ	6.4 UJ	6.3 UJ	6.4 UJ
Arsenic	22	20	1.3 U	2.4 U	1.1 U	1.1 UJ	1.8 U	0.91 U	1.6 U	1.7 U	3.3
Barium	16,000	NL	141	185	195	202	212	149	106	89.7	107
Beryllium	150	NL	0.46 J	0.73	0.59	0.45 J	0.64	0.52 J	0.45 J	0.39 J	0.39 J
Cadmium	39	2	0.77	0.96	0.76	0.62	0.94	0.71	0.68	0.63	0.59
Chromium	210	2,000 ^c	15.6	17.3	16.5	15.8	19.9	16.2	18.6	18.8	16.9
Cobalt	900	NL	6.4	7.9	7.4	7.1	8.3	7.4	8.5	8.2	6.9
Copper	NA	NL	21.1	24.6	24.2	19.6	21.8	22.1	20.5	21.3	20.7
Lead	400	250	39.3 J	33.8 J	18.6 J	15 J	32 J	14 J	12.2 J	13.2 J	17.5 J
Manganese	3,200	NL	455	531	301	251	775	259	372	402	409
Nickel	1,600	NL	15.8	18.5	16.6	15.4	21	16.6	18.8	19.1	16.2
Selenium	390	NL	3.8 U	4.0 U	3.9 U	3.8 U	3.8 U	3.7 U	3.7 U	3.7 U	3.7 U
Silver	390	NL	0.29 U	1.1 U	1.1 U	0.54 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Thallium	5.5	NL	2.7 U	2.8 U	2.8 U	2.7 U	2.7 U	2.6 U	2.7 U	2.6 U	2.7 U
Vanadium	390	NL	28.3	32.1	32.2	30.1	32.9	29.4	33	31.7	31.5
Zinc	23,000	NL	120	142	83.8	70.5	149	73	64.3	65.8	62.1

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 11, Block 2 Undeveloped Lot				Lot 1, Block 3 Undeveloped Lot				
			PO-112-A-SS-01	PO-112-B-SB-02	PO-112-C-SB-03	PO-112-D-SB-04	PO-13-A-SS-01	PO-13-B-SB-02	PO-13-C-SB-03	PO-13-D-SB-04	PO-13-C-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	1.2 J	6.3 R	6.5 R	6.4 R	6.3 R	6.3 R	6.2 R	6.2 R	6.3 R
Arsenic	22	20	4.7	4.7	5.3	3.9	4.6	2.7	2.8	2.9	1.9
Barium	16,000	NL	116	174	145	90.1	195	221	165	134	149
Beryllium	150	NL	0.36 J	0.55	0.47 J	0.36 J	0.58	0.66	0.51 J	0.47 J	0.49 J
Cadmium	39	2	0.55	0.32 J	0.41 J	0.21 J	1.3	1	0.67	0.63	0.62
Chromium	210	2,000 ^c	18.2	15.1	15.7	17.1	17.4 J	19 J	17.2 J	18.9 J	17.5 J
Cobalt	900	NL	7.1	7.2	7.6	7.8	7.4	8.8	7.8	7.7	7.4
Copper	NA	NL	20.7	20.1	21.8	18.9	21.7 J	24.9 J	22 J	22.2 J	22.1 J
Lead	400	250	110	12.8	56.3	12.6	107	34.9	14.9	14.9	14.2
Manganese	3,200	NL	365	408	271	277	694	995	477	383	348
Nickel	1,600	NL	16.5	16.8	17.1	16.3	20.4	20.5	17.2	17.6	17.5
Selenium	390	NL	3.7 UJ	3.6 UJ	3.8 UJ	3.7 UJ	1.0 J	3.7 U	3.6 U	3.6 U	3.7 U
Silver	390	NL	1.1 U	1.0 UJ	0.15 U	1.1 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Thallium	5.5	NL	2.6 U	2.6 U	2.7 U	2.7 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Vanadium	390	NL	28.6	25.7	28.3	31	31.9	34.4	32.9	33.9	31.6
Zinc	23,000	NL	183	79.9	101	58.8	294	135	71.2	71.6	71

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 12, Block 2 61 A Street							
			PO-122-A-SS-01	PO-122-B-SB-02	PO-122-C-SB-03	PO-122-D-SB-04	PO-122-A-SS-05	PO-122-B-SB-06	PO-122-C-SB-07	PO-122-D-SB-08
Inorganics - Total (mg/kg)										
Antimony	31	NL	6.4 UJ	6.8 UJ	6.7 UJ	6.8 UJ	6.9 UJ	6.8 UJ	6.9 R	6.8 R
Arsenic	22	20	3.8	3.6	4.4	2.3 U	1.7 U	1.90 U	5.0	3.5
Barium	16,000	NL	128	177	115	115	170	156	141	119
Beryllium	150	NL	0.4 J	0.5 J	0.41 J	0.44 J	0.49 J	0.5 J	0.44 J	0.35 J
Cadmium	39	2	6.6	9.4	16.1	5.2	0.88	0.91	0.73	0.62
Chromium	210	2,000 ^c	14	18.6	13.9	14.4	16.6	16.9	14.8 J	12.6 J
Cobalt	900	NL	5.8	8.1	5.5 J	6.6	6.9	7.6	6.6 J	5.8 J
Copper	NL	NL	22.3	32.7	35.5	26.8	22.7	26.8	22 J	17.9 J
Lead	400	250	280 J	217 J	450 J	198 J	35.7 J	24.3 J	17.5	16.2
Manganese	3,200	NL	435	504	364	362	526	529	337 J	316 J
Nickel	1,600	NL	15.8	21.5	15.8	15.7	17.4	18.4	16.1 J	13.7 J
Selenium	390	NL	3.7 U	3.9 U	3.9 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Silver	390	NL	1.1 U	1.1 U	0.19 U	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U
Thallium	5.5	NL	2.7 U	2.8 U	2.8 U	2.8 U	2.9 U	2.8 U	2.9 U	2.8 U
Vanadium	390	NL	25.7	33.8	28.4	30.4	29	33.4	27.2	24.4
Zinc	23,000	NL	1,660	2,360	4,350	1,340	147	112	86.6 J	73.9 J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 2, Block 3 Abandon Homes								
			PO-23-A-SS-01	PO-23-B-SB-02	PO-23-C-SB-03	PO-23-D-SB-04	PO-23-A-SS-05	PO-23-B-SB-06	PO-23-C-SB-07	PO-23-D-SB-08	PO-23-D-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.4 R	6.4 R	6.3 R	6.4 R	6.4 R	6.3 R	6.3 R	6.2 R	6.3 R
Arsenic	22	20	5.1	3.9	2.2	2.7	1.8	0.63 J	1.5	1.9	2.6
Barium	16,000	NL	250	237	143	173	217	199	156	143	174
Beryllium	150	NL	0.61	0.57	0.55	0.59	0.64	0.68	0.59	0.59	0.62
Cadmium	39	2	1.9	0.98	0.75	0.89	1.0	1.0	0.77	0.81	0.93
Chromium	210	2,000 ^c	19 J	16.7 J	16.4 J	20.6 J	16.5 J	17.2 J	16.7 J	20.2 J	20.8 J
Cobalt	900	NL	8.6	7.6	8.1	8.9	7.7	7.8	8.1	9.1	9
Copper	NA	NL	23.1 J	18.2 J	26.4 J	28.6 J	19.3 J	24.1 J	25.5	25 J	29.6 J
Lead	400	250	251	70	20.9	28.7	37.3	22.5	16.9	22.6	26.4
Manganese	3,200	NL	1,010	1,000	331	425	1,100	743	360	472	446
Nickel	1,600	NL	23.9	20.1	20.8	24	20.1	21.3	19.5	24.9	24.6
Selenium	390	NL	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.6 U	0.7 U
Silver	390	NL	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.0 UJ	1.1 UJ	1.0 UJ	1.1 UJ
Thallium	5.5	NL	2.7 U	2.7 U	2.6 U	2.7 U	2.7 U	2.6 U	2.6 U	2.6 U	2.6 U
Vanadium	390	NL	31.3	27.3	30.5	34.1	31	30.7	33.8	33.8	36
Zinc	23,000	NL	440	178	82.5	101	182	124	84.4	106	103

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 3, Block 3 Undeveloped Lot					Lot 6, Block 3 Undeveloped Lot			
			PO-33-A-SS-01	PO-33-B-SB-02	PO-33-C-SB-03	PO-33-D-SB-04	PO-33-B-SB-09	PO-63-A-SS-01	PO-63-B-SB-02	PO-63-C-SB-03	PO-63-D-SB-04
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.3 R	6.3 R	6.4 R	6.3 R	6.3 R	6.2 R	6.3 R	6.3 R	6.2 R
Arsenic	22	20	6.0	7.9	6.6	5.6	6.1	6.4	5.4	4.7	4.2
Barium	16,000	NL	129	173	145	169	157	152	181	156	90.4
Beryllium	150	NL	0.41 J	0.53 J	0.50 J	0.57 J	0.47 J	0.51 J	0.59 J	0.44 J	0.39 J
Cadmium	39	2	1.2	1.0	0.84	0.87	0.87	0.87	0.85	0.65	0.56
Chromium	210	2,000 ^c	17.1 J	18.9 J	14.4 J	18.1 J	18.3 J	15.9 J	17.3 J	17.9 J	18.6 J
Cobalt	900	NL	7.2 J	7.6 J	6.9 J	8.2 J	7.4 J	6.8 J	7.7 J	7.6 J	7.5 J
Copper	NA	NL	23.6 J	26.8 J	20.3 J	29 J	24.6 J	21.8 J	24.4 J	21.2 J	17.9 J
Lead	400	250	55.7	57.3	41.5	32	46.4	43	23.7	14.5	13.5
Manganese	3,200	NL	507 J	510 J	633	387 J	533 J	482 J	408 J	346 J	346 J
Nickel	1,600	NL	18.1 J	19.7 J	17.4 J	21.4 J	19.5 J	17.7 J	18.8 J	17.5 J	17.1 J
Selenium	390	NL	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.6 U	3.7 U	3.7 U	3.6 U
Silver	390	NL	1.0 U	1.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.0 U	1.1 U	1.0 U
Thallium	5.5	NL	2.6 U	2.6 U	2.7 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Vanadium	390	NL	29.3	32.4	27.2	33.3	28.9	28	32.3	29.4	31.2
Zinc	23,000	NL	263 J	169 J	90 J	95.1 J	141 J	141 J	97 J	65.9 J	61.9 J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 5, Block 3 95 B Street								
			PO-53-A-SS-01	PO-53-B-SB-02	PO-53-C-SB-03	PO-53-D-SB-04	PO-53-A-SS-05	PO-53-B-SB-06	PO-53-C-SB-07	PO-53-D-SB-08	PO-53-B-SB-09
Inorganics - Total (mg/kg)											
Antimony	31	NL	6.5 R	6.4 R	6.3 R	6.5 R	6.3 R	6.3 R	6.5 R	6.4 R	6.2 R
Arsenic	22	20	10	7.1	6.1	4.4	6.0	6.5	6.4	7.1	7.5
Barium	16,000	NL	222	214	164	148	189	201	327	220	230
Beryllium	150	NL	0.59 J	0.59 J	0.56 J	0.53 J	0.5 J	0.55 J	0.65 J	0.59 J	0.6 J
Cadmium	39	2	5.4	1.1	1.5	0.71	1.2	0.91	1.0	1.0	1.1
Chromium	210	2,000 ^c	18.7 J	14.8 J	17.3 J	14.6 J	17.4 J	16.9 J	15.5 J	17 J	19.2 J
Cobalt	900	NL	7.6 J	7.9 J	7.9 J	6.9 J	7.2 J	7.4 J	7.6 J	7.9 J	8.1 J
Copper	NA	NL	25.5 J	21.6 J	25.5 J	19.9 J	24.3 J	23.8 J	19.6 J	25.9 J	26.1 J
Lead	400	250	229	57.2	66	25.6	97.9	47.2	45.8	45.5	49.6
Manganese	3,200	NL	867 J	1,320 J	478 J	410 J	674 J	774 J	1,680 J	727 J	956 J
Nickel	1,600	NL	22.9 J	18.9 J	22.2 J	17.3 J	19.2 J	18.5 J	16.8 J	21.6 J	20.5 J
Selenium	390	NL	3.8 U	3.8 U	3.7 U	3.8 U	3.7 U	3.7 U	3.8 U	3.8 U	3.6 U
Silver	390	NL	1.1 U	0.45 J	0.18 J	1.1 U	1.0 U	1.0 U	0.2 J	1.1 U	1.0 U
Thallium	5.5	NL	2.7 U	2.7 U	2.6 U	2.7 U	2.6 U	2.6 U	2.7 U	2.7 U	2.6 U
Vanadium	390	NL	30.6	28.4	30.3	25.2	28.4	33.4	30.6	31.5	40.7
Zinc	23,000	NL	1,500 J	166 J	238 J	86.7 J	237 J	155 J	147 J	129 J	162 J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 7, Block 3 Undeveloped Lot					Lot 3, Block 5 Undeveloped Lot				
			PO-73-A-SS-01	PO-73-B-SB-02	PO-73-C-SB-03	PO-73-D-SB-04	PO-73-A-SS-09	PO-35-A-SS-01	PO-35-B-SB-02	PO-35-C-SB-03	PO-35-D-SB-04	PO-35-B-SB-09
Inorganics - Total (mg/kg)												
Antimony	31	NL	6.3 R	1.3 J	1.4 J	6.2 R	6.2 R	6.3 R	6.2 R	6.2 R	6.2 R	6.3 R
Arsenic	22	20	4.6	4.3	4.9	4.7	6.0	5.7	4.5	5.1	4.4	4.7
Barium	16,000	NL	124	158	110	118	148	225	112	125	122	114
Beryllium	150	NL	0.56	0.54	0.46 J	0.47 J	0.57	0.55	0.47 J	0.49 J	0.47 J	0.50 J
Cadmium	39	2	0.65	0.44 J	0.33 J	0.46 J	0.89	0.51 J	0.33 J	0.33 J	0.26 J	0.28 J
Chromium	210	2,000 ^c	16.7	18.2	18.8	17.8	18.8	17.2	16.5	17.4	17.6	16.5
Cobalt	900	NL	8.5	7.9	8.1	7.3	8.6	7.6	7.8	7.8	7.9	7.6
Copper	NA	NL	24.5	22.6	21.7	21.6	24.8	17.6	20.1	22.8	22.6	21.9
Lead	400	250	29.3	18.7	20.2	18.8	46.1	44.6	19.8	17.5	14.6	20.9
Manganese	3,200	NL	481	319	375	355	418	1,160	361	303	291	302
Nickel	1,600	NL	19.6	17.3	19	17.6	19.3	17	17.3	16.9	17.5	17.6
Selenium	390	NL	3.7 UJ	3.6 UJ	3.6 UJ	3.6 UJ	3.6 UJ	3.7 UJ	3.6 UJ	3.6 UJ	3.6 UJ	3.7 UJ
Silver	390	NL	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	0.21 U
Thallium	5.5	NL	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
Vanadium	390	NL	30.7	33.6	36.3	32.3	32.7	29.9	27.8	31.6	31.2	30.2
Zinc	23,000	NL	168	93.1	86.4	110	274	147	83.3	73.8	67.8	86.9

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup

Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Lot 4, Block 5 Undeveloped Lot				
			PO-45-A-SS-01	PO-45-B-SB-02	PO-45-C-SB-03	PO-45-D-SB-04	PO-45-D-SB-09
Inorganics - Total (mg/kg)							
Antimony	31	NL	6.3 R	1.6 J	6.3 R	1.2 J	6.3 R
Arsenic	22	20	4.6	5.4	4.2	4.4	4.6
Barium	16,000	NL	157 J	142 J	112 J	108 J	102 J
Beryllium	150	NL	0.45 J	0.47 J	0.4 J	0.43 J	0.39 J
Cadmium	39	2	0.54	0.4 J	0.28 J	0.32 J	0.29 J
Chromium	210	2,000 ^c	18.8	18.9	14.7	20.7	16.9
Cobalt	900	NL	7.9	8.2	7.4	8.4	7.8
Copper	NA	NL	17.6 J	22.4 J	21.3 J	26.1	21.3 J
Lead	400	250	54.8 J	27.5 J	16 J	18.2	15.8 J
Manganese	3,200	NL	618	481	397	343	285
Nickel	1,600	NL	19.9	20.4	17.4	22	18.7
Selenium	390	NL	3.7 UJ	3.7 UJ	3.7 UJ	3.6 UJ	3.7 UJ
Silver	390	NL	1.0 U	0.2 U	0.29 U	1.0 U	1.0 U
Thallium	5.5	NL	2.60 U	2.60 U	2.60 U	2.60 U	2.60 U
Vanadium	390	NL	29.7 J	29.6 J	25 J	34.1	27.8 J
Zinc	23,000	NL	147	110	71.4	76.7	66.2

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 7 (CONTINUED)
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
PEND OREILLE VILLAGE
PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Caretaker's Residence					
			GV-CTR-A-SS-01	GV-CTR-B-SB-02	GV-CTR-C-SB-03	GV-CTR-D-SB-04	GV-CTR-A-SS-09	
Inorganics - Total (mg/kg)								
Antimony	31	NL	4.4 UJ	4.5 UJ	4.5 UJ	4.5 UJ	4.4	UJ
Arsenic	22	20	4.7	4.8	4.9	4.5 U	5.6	
Barium	16,000	NL	205	200	167	135	203	
Beryllium	150	NL	0.4	0.48	0.45	0.35	0.4	
Cadmium	39	2	6.8 J	2.6 J	0.9 J	0.5 UJ	7.5 J	
Chromium	210	2,000 ^c	17	16.5	15.5	16	15.4	
Cobalt	900	NL	5.91	6.52	6.41	7.08	5.9	
Copper	NA	NL	30.4	27.5	23.4	21.8	28.6	
Lead	400	250	414	182	42.1	19.8	399	
Manganese	3,200	NL	584	573	389	345	610	
Nickel	1,600	NL	14.3	15.3	14.7	14.9	14	
Selenium	390	NL	4.9 U	5.0 U	5.0 U	5.0 U	4.9	U
Silver	390	NL	0.99 U	1.0 U	0.99 U	1.0 U	0.98	U
Thallium	5.5	NL	4.9 U	5.0 U	5.0 U	5.0 U	4.9	U
Vanadium	390	NL	25.2	27.8	26.8	28.6	25.7	
Zinc	23,000	NL	1,800 J	720 J	220 J	90 J	2,100	J

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for unrestricted land use.

mg/kg = Milligrams per kilogram

PO = Pend Oreille Village

SS = Surface soil sample

SB = Subsurface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

APPENDIX F

Data Summary Tables – The Upper Level Site

TABLE 8
SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
UPPER LEVEL SITE - GRANDVIEW MINE
METALINE FALLS, PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (mg/kg)	MTCA Method A Soil Cleanup Levels ^b (mg/kg)	Upper Level Site - Grandview Mine				
			UL-SS-01	UL-SS-02	UL-SS-03	UL-SS-04	UL-SS-05
Inorganics - Total (mg/kg)							
Antimony	454	NL	4 J	2 J	6.1	3.9 J	3.6 J
Arsenic	284	20	10.1	20.5	3.7	73.6	14
Barium	100,000	NL	120	76.5	123	66.3	109
Beryllium	2,156	NL	0.27 J	0.27 J	0.42 J	0.3 J	0.29 J
Cadmium	563	2	22.8	9.7	3.0	32.1	29.2
Chromium	498	2,000 ^c	24.2 J	9.6 J	20.2 J	10.3 J	25.5 J
Cobalt	2,135	NL	52.4	3.6 J	7.9	4.1 J	72
Copper	42,178	NL	103 J	27.5 J	24.1 J	32 J	97.4 J
Lead	800	1,000	6,180	5,060	176	8,990	5,510
Manganese	35,171	NL	313 J	275 J	319	271 J	339 J
Nickel	22,711	NL	40.3	26.3	17.7	86.9	39.2
Selenium	5,678	NL	2.9 J	1.3 J	3.6 U	3.1 J	3.3 J
Silver	5,678	NL	17.7	0.50 U	0.21 U	1.6	28.8
Thallium	79	NL	2.5 U	2.5 U	2.5 U	1.1 J	0.81 J
Vanadium	5,678	NL	26.8	31.6	42.6	62.2	27.4
Zinc	10,000	NL	5,560	4,270	390	8,970	6,690

Notes:

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

mg/kg = Milligrams per kilogram

UL = Upper Level - Grandview Mine

SS = Surface soil sample

c = Chromium III value used

J = Estimated value

R = Data is unusable; constituent may or may not be present in sample

NL = Not listed

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 9
SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
UPPER LEVEL SITE - GRANDVIEW MINE
METALINE FALLS, PEND OREILLE COUNTY, WASHINGTON

Compound	EPA Region 6 HHMS Screening Levels ^a (ug/kg)	MTCA Method A Soil Cleanup Levels ^b (ug/kg)	Upper Level Site - Grandview Mine				
			UL-SS-01	UL-SS-02	UL-SS-03	UL-SS-04	UL-SS-05
Volatile Organic Compounds (ug/kg)							
2-Butanone	NL	NL	12 U	16 JH	13 U	15	23 JH
Acetone	60,480,000	NL	20 JH	21 JH	19 JH	14 UJK	22 JH
Methyl acetate	10,000,000	NL	5.8 UJK	8.8 JH	11	7.1 U	16 JH
Methylene chloride	22,000	20	7.5 JH	23 JH	6.4 U	7.1 U	12 JH
Toluene	521,000	7,000	NA	9.5 JH	6.4 U	7.1 U	6.3 U
m, p-Xylenes	214,000	9,000	NA	12 JH	6.4	7.1 U	6.3 U
Extractables (ug/kg)							
None detected.							
Pesticides & PCBs (ug/kg)							
4,4'-DDE (p,p'-DDE)	8,000	NL	8.1	3.3 U	3.3 U	3.3 U	7.6

Notes:

* = EPA Region 6 Human Health Medium Specific Screening Levels 2007

** = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

ug/kg = Micrograms per kilogram

UL = Upper Level - Grandview Mine

SS = Surface soil sample

NL = Not Listed

J = Estimated value

H = Sample has a high bias

K = Sample has an unknown bias

NA = Not applicable

U = Constituent was undetected

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 10
SUMMARY OF RADIONUCLIDE ANALYTICAL RESULTS
SOIL SAMPLES
UPPER LEVEL SITE - GRANDVIEW MINE
METALINE FALLS, PEND OREILLE COUNTY, WASHINGTON

Compound	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	Upper Level Site - Grandview Mine				
			UL-SS-01	UL-SS-02	UL-SS-03	UL-SS-04	UL-SS-06 ^a
Radionuclide - (pCi/gWET)							
Beryllium-7	NL	NL	NA	NA	NA	NA	0.0662
Bismuth-212	NL	NL	0.437	0.124	0.808	0.229	0.112
Bismuth-214	NL	NL	1.55*	2.02*	0.586*	11.6*	2.43*
Cesium-137	0.3	2.1	0.281	0.235	ND	0.2	0.234
Potassium-40	10	30	7.9	3.45	14.8	4.6	3.66
Protactinium-231	0.01	0.03	NA	NA	NA	0.53	NA
Lead-210	1	3	NA	NA	NA	NA	3.45*
Lead-211	NL	NL	NA	NA	NA	0.792	NA
Lead-212	NL	NL	0.42	0.134	0.7	0.257	0.207
Lead-214	NL	NL	1.6*	2.21*	0.623*	12.2*	2.7*
Radium-223	NL	NL	0.231*	0.282*	0.187*	0.763*	0.215*
Radium-224	NL	NL	0.374	NA	0.557	0.3	0.148
Radium-226	1	3	3.29*	5.31*	1.2*	13.7*	3.28*
Radium-228	1	3	0.434	0.184	0.731	0.243	0.219
Radon-219	NL	NL	NA	NA	NA	0.738	0.224
Thorium-227	NL	NL	0.0567	NA	NA	0.564	0.137
Thorium-234	NL	NL	1.49*	1.77*	0.463*	10.3*	2.85*
Thallium-208	1	3	0.139	0.0463	0.24	0.0816	0.0717
Uranium-235	0.03	0.09	0.2*	0.33*	0.0749*	0.901*	0.198*

Notes:

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/gWET = Picocurie per gram (wet)

UL = Upper Level - Grandview Mine

SS = Surface soil sample

NL = Not listed

NA = Not applicable

* = Result that may be significantly under or overestimated

ND = Non detect

Bold = Constituent is elevated three times above typical background concentrations

APPENDIX G

Analytical Data – The POV Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 25, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8AH5, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8A67	MJ8A68	MJ8A69	MJ8A70	MJ8A71	MJ8A72	MJ8A73
MJ8A74	MJ8AB9	MJ8AC0	MJ8AH5	MJ8AH6	MJ8AH7	MJ8AH8
MJ8AH9	MJ8AJ0	MJ8AJ1	MJ8AJ2	MJ8AJ3	MJ8AJ4	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/14/07 thru 8/18/07. ICP-AES analysis was conducted on 8/24/07 and 8/25/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (93-103%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries for the LCS were within the established control limits for solid samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of silver and sodium. Affected samples were qualified (U) for silver and sodium.

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8A67. Percent recoveries (88-104%) met the criterion (75-125%) for all elements with the exception of antimony (20%) and selenium (71%). Antimony data were qualified (J or R). Selenium data were qualified (J or UJ). Data for both analytes may be biased low.

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample was analyzed for sample MJ8A67. Relative percent differences ($\leq 29\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$) for the duplicate sample analysis.

ICP-AES SERIAL DILUTION - Acceptable

A five-fold serial dilution was analyzed for sample MJ8A67. Percent differences ($\leq 7\%$) were within the criterion ($\leq 10\%$) for the serial dilution analysis.

ASSESSMENT SUMMARY

The following is a summary of qualified data:

Silver and sodium data were qualified (U) due to the detected presence of these elements in the preparation blanks and instrument calibration blanks.

Antimony data were qualified (J or R) due to a low matrix spike recovery. Antimony values may be biased low.

Selenium data were qualified (J or UJ) due to a low matrix spike recovery. Selenium values may be biased low.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A67

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AH5

Matrix (soil/water): SOIL Lab Sample ID: BT67259

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12300			P
7440-36-0	Antimony	1.2	J	* J	P
7440-38-2	Arsenic	5.3			P
7440-39-3	Barium	147			P
7440-41-7	Beryllium	0.41	J		P
7440-43-9	Cadmium	0.45	J		P
7440-70-2	Calcium	16600			P
7440-47-3	Chromium	18.1			P
7440-48-4	Cobalt	7.8			P
7440-50-8	Copper	21.6			P
7439-89-6	Iron	16300			P
7439-92-1	Lead	32.7			P
7439-95-4	Magnesium	4990			P
7439-96-5	Manganese	633		*	P
7440-02-0	Nickel	17.2			P
7440-09-7	Potassium	1460			P
7782-49-2	Selenium	3.7	J	* u J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	148	J	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.2			P
7440-66-6	Zinc	125			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A68

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728NRAS No.: _____ SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67260Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.8

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16400			P
7440-36-0	Antimony	1.3	J	* J	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	131			P
7440-41-7	Beryllium	0.50	J		P
7440-43-9	Cadmium	0.29	J		P
7440-70-2	Calcium	6730			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	6.9			P
7440-50-8	Copper	24.3			P
7439-89-6	Iron	15400			P
7439-92-1	Lead	11.3			P
7439-95-4	Magnesium	4090			P
7439-96-5	Manganese	223		*	P
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	923			P
7782-49-2	Selenium	3.7	*	* UJ	P
7440-22-4	Silver	0.31	J	U	P
7440-23-5	Sodium	158	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	25.9			P
7440-66-6	Zinc	62.5			P

Dr
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A69

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AH5

Matrix (soil/water): SOIL Lab Sample ID: BT67261

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14000			P
7440-36-0	Antimony	6.4	<i>U</i>	<i>N R</i>	P
7440-38-2	Arsenic	3.4			P
7440-39-3	Barium	209			P
7440-41-7	Beryllium	0.45	<i>J</i>		P
7440-43-9	Cadmium	0.25	<i>J</i>		P
7440-70-2	Calcium	2940			P
7440-47-3	Chromium	15.5			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	19.9			P
7439-89-6	Iron	16300			P
7439-92-1	Lead	9.7			P
7439-95-4	Magnesium	4050			P
7439-96-5	Manganese	299		<i>+</i>	P
7440-02-0	Nickel	15.7			P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	3.8	<i>U</i>	<i>* UJ</i>	P
7440-22-4	Silver	1.1	<i>U</i>		P
7440-23-5	Sodium	136	<i>U</i>	<i>U</i>	P
7440-28-0	Thallium	2.7	<i>U</i>		P
7440-62-2	Vanadium	27.5			P
7440-66-6	Zinc	54.6			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A70

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67262Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9590			P
7440-36-0	Antimony	1.2	J	* J	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	67.5			P
7440-41-7	Beryllium	0.33	J		P
7440-43-9	Cadmium	0.17	J		P
7440-70-2	Calcium	2400			P
7440-47-3	Chromium	17.7			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	20.0			P
7439-89-6	Iron	16300			P
7439-92-1	Lead	8.7			P
7439-95-4	Magnesium	4330			P
7439-96-5	Manganese	293		*	P
7440-02-0	Nickel	16.1			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	3.7	#	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	161	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.9			P
7440-66-6	Zinc	50.8			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A71

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67263Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.8

Concentration Units (ug/L or mg/kg dry weight): _____

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10600			P
7440-36-0	Antimony	1.2	J	* J	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	116			P
7440-41-7	Beryllium	0.36	J		P
7440-43-9	Cadmium	0.55			P
7440-70-2	Calcium	9990			P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	7.1			P
7440-50-8	Copper	20.7			P
7439-89-6	Iron	15000			P
7439-92-1	Lead	110			P
7439-95-4	Magnesium	4580			P
7439-96-5	Manganese	365		*	P
7440-02-0	Nickel	16.5			P
7440-09-7	Potassium	1510			P
7782-49-2	Selenium	3.7	J	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	112	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.6			P
7440-66-6	Zinc	183			P

DM
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A72

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67264Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.9Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17800			P
7440-36-0	Antimony	6.3	8	* R	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	174			P
7440-41-7	Beryllium	0.55			P
7440-43-9	Cadmium	0.32	J		P
7440-70-2	Calcium	5470			P
7440-47-3	Chromium	15.1			P
7440-48-4	Cobalt	7.2			P
7440-50-8	Copper	20.1			P
7439-89-6	Iron	16200			P
7439-92-1	Lead	12.8			P
7439-95-4	Magnesium	3570			P
7439-96-5	Manganese	408		+	P
7440-02-0	Nickel	16.8			P
7440-09-7	Potassium	1060			P
7782-49-2	Selenium	3.6	8	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	99.8	8	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	25.7			P
7440-66-6	Zinc	79.9			P

Dr
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A73

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67265Level (low/med): LOWDate Received: 08/22/2007% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14700			P
7440-36-0	Antimony	6.5	J	* R	P
7440-38-2	Arsenic	5.3			P
7440-39-3	Barium	145			P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.41	J		P
7440-70-2	Calcium	4260			P
7440-47-3	Chromium	15.7			P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	21.8			P
7439-89-6	Iron	16200			P
7439-92-1	Lead	56.3			P
7439-95-4	Magnesium	4240			P
7439-96-5	Manganese	271		*	P
7440-02-0	Nickel	17.1			P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium	3.8	J	* UJ	P
7440-22-4	Silver	0.15	J	U	P
7440-23-5	Sodium	121	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	28.3			P
7440-66-6	Zinc	101			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A74

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67266Level (low/med): LOWDate Received: 08/22/2007% Solids: 93.4

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10600			P
7440-36-0	Antimony	6.4	#	* R	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	90.1			P
7440-41-7	Beryllium	0.36	J		P
7440-43-9	Cadmium	0.21	J		P
7440-70-2	Calcium	2140			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	7.8			P
7440-50-8	Copper	18.9			P
7439-89-6	Iron	16600			P
7439-92-1	Lead	12.6			P
7439-95-4	Magnesium	4350			P
7439-96-5	Manganese	277		*	P
7440-02-0	Nickel	16.3			P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	3.7	#	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	31.7	#	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.0			P
7440-66-6	Zinc	58.8			P

DM
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB9

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67267Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.9Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13500			P
7440-36-0	Antimony	6.3	U	* R	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	115			P
7440-41-7	Beryllium	0.43	J		P
7440-43-9	Cadmium	0.61			P
7440-70-2	Calcium	13700			P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	25.9			P
7439-89-6	Iron	17000			P
7439-92-1	Lead	70.9			P
7439-95-4	Magnesium	7490			P
7439-96-5	Manganese	377		*	P
7440-02-0	Nickel	21.1			P
7440-09-7	Potassium	1640			P
7782-49-2	Selenium	3.7	*	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	231	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	35.9			P
7440-66-6	Zinc	148			P

dm
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC0

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67268Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800			P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	5.2			P
7440-39-3	Barium	117			P
7440-41-7	Beryllium	0.49	J		P
7440-43-9	Cadmium	0.52	J		P
7440-70-2	Calcium	12200			P
7440-47-3	Chromium	18.0			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	25.8			P
7439-89-6	Iron	17200			P
7439-92-1	Lead	40.4			P
7439-95-4	Magnesium	6650			P
7439-96-5	Manganese	379		*	P
7440-02-0	Nickel	22.1			P
7440-09-7	Potassium	1510			P
7782-49-2	Selenium	3.6	U	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	196	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	37.9			P
7440-66-6	Zinc	119			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH5

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67269Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.1

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16800			P
7440-36-0	Antimony	6.3	U	* R	P
7440-38-2	Arsenic	4.6			P
7440-39-3	Barium	124			P
7440-41-7	Beryllium	0.56			P
7440-43-9	Cadmium	0.65			P
7440-70-2	Calcium	10100			P
7440-47-3	Chromium	16.7			P
7440-48-4	Cobalt	8.5			P
7440-50-8	Copper	24.5			P
7439-89-6	Iron	20500			P
7439-92-1	Lead	29.3			P
7439-95-4	Magnesium	5950			P
7439-96-5	Manganese	481		*	P
7440-02-0	Nickel	19.6			P
7440-09-7	Potassium	1160			P
7782-49-2	Selenium	3.7	U	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	73.6	U	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.7			P
7440-66-6	Zinc	168			P

DI
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH6

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67270Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17300			P
7440-36-0	Antimony	1.3	J	* J	P
7440-38-2	Arsenic	4.3			P
7440-39-3	Barium	158			P
7440-41-7	Beryllium	0.54			P
7440-43-9	Cadmium	0.44	J		P
7440-70-2	Calcium	4850			P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	22.6			P
7439-89-6	Iron	18700			P
7439-92-1	Lead	18.7			P
7439-95-4	Magnesium	4950			P
7439-96-5	Manganese	319		*	P
7440-02-0	Nickel	17.3			P
7440-09-7	Potassium	1190			P
7782-49-2	Selenium	3.6	J	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	147	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.6			P
7440-66-6	Zinc	93.1			P

Dr
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH7

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67271Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14100			P
7440-36-0	Antimony	1.4	J	N J	P
7440-38-2	Arsenic	4.9			P
7440-39-3	Barium	110			P
7440-41-7	Beryllium	0.46	J		P
7440-43-9	Cadmium	0.33	J		P
7440-70-2	Calcium	3710			P
7440-47-3	Chromium	18.8			P
7440-48-4	Cobalt	8.1			P
7440-50-8	Copper	21.7			P
7439-89-6	Iron	19800			P
7439-92-1	Lead	20.2			P
7439-95-4	Magnesium	5120			P
7439-96-5	Manganese	375			P
7440-02-0	Nickel	19.0			P
7440-09-7	Potassium	1290			P
7782-49-2	Selenium	3.6	U	N U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	142	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.3			P
7440-66-6	Zinc	86.4			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH8

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67272Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14900			P
7440-36-0	Antimony	6.2	8	* R	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	118			P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.46	J		P
7440-70-2	Calcium	4160			P
7440-47-3	Chromium	17.8			P
7440-48-4	Cobalt	7.3			P
7440-50-8	Copper	21.6			P
7439-89-6	Iron	18000			P
7439-92-1	Lead	18.8			P
7439-95-4	Magnesium	5010			P
7439-96-5	Manganese	355		*	P
7440-02-0	Nickel	17.6			P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	3.6	8	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	130	8	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.3			P
7440-66-6	Zinc	110			P

25
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH9

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67273Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18500			P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	6.0			P
7440-39-3	Barium	148			P
7440-41-7	Beryllium	0.57			P
7440-43-9	Cadmium	0.89			P
7440-70-2	Calcium	10800			P
7440-47-3	Chromium	18.8			P
7440-48-4	Cobalt	8.6			P
7440-50-8	Copper	24.8			P
7439-89-6	Iron	19800			P
7439-92-1	Lead	46.1			P
7439-95-4	Magnesium	6340			P
7439-96-5	Manganese	418		*	P
7440-02-0	Nickel	19.3			P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	3.6	U	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	164	F	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.7			P
7440-66-6	Zinc	274			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ0

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67274Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.2Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15600			P
7440-36-0	Antimony	6.3	✓	* R	P
7440-38-2	Arsenic	5.7			P
7440-39-3	Barium	225			P
7440-41-7	Beryllium	0.55			P
7440-43-9	Cadmium	0.51	J		P
7440-70-2	Calcium	20300			P
7440-47-3	Chromium	17.2			P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	17.6			P
7439-89-6	Iron	16900			P
7439-92-1	Lead	44.6			P
7439-95-4	Magnesium	3960			P
7439-96-5	Manganese	1160		+	P
7440-02-0	Nickel	17.0			P
7440-09-7	Potassium	1940			P
7782-49-2	Selenium	3.7	✓	* U5	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	144	✓	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.9			P
7440-66-6	Zinc	147			P

DM
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ1

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67275Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15100			P
7440-36-0	Antimony	6.2	U	N R	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	112			P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.33	J		P
7440-70-2	Calcium	5580			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	7.8			P
7440-50-8	Copper	20.1			P
7439-89-6	Iron	17400			P
7439-92-1	Lead	19.8			P
7439-95-4	Magnesium	4160			P
7439-96-5	Manganese	361		*	P
7440-02-0	Nickel	17.3			P
7440-09-7	Potassium	1120			P
7782-49-2	Selenium	3.6	U	N U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	88.8	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.8			P
7440-66-6	Zinc	83.3			P

9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ2

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67276Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15200			P
7440-36-0	Antimony	6.2	<i>H</i>	<i>* R</i>	P
7440-38-2	Arsenic	5.1			P
7440-39-3	Barium	125			P
7440-41-7	Beryllium	0.49	J		P
7440-43-9	Cadmium	0.33	J		P
7440-70-2	Calcium	4930			P
7440-47-3	Chromium	17.4			P
7440-48-4	Cobalt	7.8			P
7440-50-8	Copper	22.8			P
7439-89-6	Iron	16700			P
7439-92-1	Lead	17.5			P
7439-95-4	Magnesium	4390			P
7439-96-5	Manganese	303		<i>f</i>	P
7440-02-0	Nickel	16.9			P
7440-09-7	Potassium	1340			P
7782-49-2	Selenium	3.6	<i>H</i>	<i>* UJ</i>	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	90.1	<i>H</i>	<i>U</i>	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	73.8			P

DM
*9-25-07*Color Before: BROWN

Clarity Before:

Texture: MEDIUMColor After: YELLOW

Clarity After:

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AH5

Matrix (soil/water): SOIL Lab Sample ID: BT67277

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800			P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	122			P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.26	J		P
7440-70-2	Calcium	3560			P
7440-47-3	Chromium	17.6			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	22.6			P
7439-89-6	Iron	17600			P
7439-92-1	Lead	14.6			P
7439-95-4	Magnesium	4420			P
7439-96-5	Manganese	291		*	P
7440-02-0	Nickel	17.5			P
7440-09-7	Potassium	1250			P
7782-49-2	Selenium	3.6	U	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	110	U	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	31.2			P
7440-66-6	Zinc	67.8			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ4

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AH5Matrix (soil/water): SOILLab Sample ID: BT67278Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.6

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15900			P
7440-36-0	Antimony	6.3	✓	* R	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	114			P
7440-41-7	Beryllium	0.50	J		P
7440-43-9	Cadmium	0.28	J		P
7440-70-2	Calcium	6010			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	21.9			P
7439-89-6	Iron	17400			P
7439-92-1	Lead	20.9			P
7439-95-4	Magnesium	4220			P
7439-96-5	Manganese	302		*	P
7440-02-0	Nickel	17.6			P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	3.7	✓	* uJ	P
7440-22-4	Silver	0.21	✓	u	P
7440-23-5	Sodium	110	✓	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.2			P
7440-66-6	Zinc	86.9			P

DM
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 25, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8A75, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8A75	MJ8A76	MJ8A77	MJ8A78	MJ8A83	MJ8A84	MJ8A85
MJ8A86	MJ8A87	MJ8A88	MJ8A89	MJ8A90	MJ8A91	MJ8A92
MJ8A93	MJ8A94	MJ8A95	MJ8A96	MJ8A97	MJ8A98	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/15/07 thru 8/18/07. ICP-AES analysis was conducted on 8/25/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-103%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS)

Analyte recoveries for the LCS were within the established control limits for solid samples with the exception of barium. Barium data were qualified (J) and may be biased low.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of silver and sodium. Affected samples were qualified (U) for silver and sodium.

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8A78. Percent recoveries (77-99%) met the criterion (75-125%) for all elements with the exception of antimony (25%), manganese (46%) and selenium (71%). Antimony data were qualified (J or R). Manganese and selenium data were qualified (J or UJ). Data for all analytes may be biased low.

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample was analyzed for sample MJ8A78. Relative percent differences ($\leq 4\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$) for the duplicate sample analysis.

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8A78. Percent differences ($\leq 5\%$) were within the criterion ($\leq 10\%$) for the serial dilution analysis with the exception of zinc (12%). Zinc data were qualified (J) and may be biased low.

ASSESSMENT SUMMARY

The following is a summary of qualified data:

Barium data were qualified (J) due to a low recovery for the laboratory control standard. Barium values may be biased low.

Silver and sodium data were qualified (U) due to the detected presence of these elements in the preparation blanks and instrument calibration blanks.

Antimony data were qualified (J or R) due to a low matrix spike recovery. Antimony values may be biased low.

Manganese and selenium data were qualified (J or UJ) due to a low matrix spike recovery. Manganese and selenium values may be biased low.

Zinc data were qualified (J) due to a high percent difference in the serial dilution result. Zinc values may be biased low.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A75

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67179

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14000			P
7440-36-0	Antimony	6.3	#	* R	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	172		J	P
7440-41-7	Beryllium	0.46	J		P
7440-43-9	Cadmium	0.39	J		P
7440-70-2	Calcium	11000			P
7440-47-3	Chromium	18.4			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	20.0			P
7439-89-6	Iron	17400			P
7439-92-1	Lead	26.5			P
7439-95-4	Magnesium	4580			P
7439-96-5	Manganese	567		* J	P
7440-02-0	Nickel	17.9			P
7440-09-7	Potassium	1450			P
7782-49-2	Selenium	3.7	#	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	169	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	31.0			P
7440-66-6	Zinc	114		# J	P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A76

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67180Level (low/med): LOWDate Received: 08/22/2007% Solids: 91.6Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16700			P
7440-36-0	Antimony	6.6	J	# R	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	212		J	P
7440-41-7	Beryllium	0.52	J		P
7440-43-9	Cadmium	0.41	J		P
7440-70-2	Calcium	8380			P
7440-47-3	Chromium	17.5			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	19.6			P
7439-89-6	Iron	17100			P
7439-92-1	Lead	20.0			P
7439-95-4	Magnesium	3980			P
7439-96-5	Manganese	876		# J	P
7440-02-0	Nickel	16.8			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium	3.8	J	# UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	168	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.0			P
7440-66-6	Zinc	88.7		# J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A77

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67181

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 89.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13900			P
7440-36-0	Antimony	1.4	J	* J	P
7440-38-2	Arsenic	4.8			P
7440-39-3	Barium	115		J	P
7440-41-7	Beryllium	0.46	J		P
7440-43-9	Cadmium	0.37	J		P
7440-70-2	Calcium	4490			P
7440-47-3	Chromium	17.5			P
7440-48-4	Cobalt	7.7			P
7440-50-8	Copper	19.2			P
7439-89-6	Iron	16600			P
7439-92-1	Lead	13.6			P
7439-95-4	Magnesium	4320			P
7439-96-5	Manganese	337		* J	P
7440-02-0	Nickel	16.9			P
7440-09-7	Potassium	1330			P
7782-49-2	Selenium	3.9	J	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	138	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	30.8			P
7440-66-6	Zinc	72.7		* J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A78

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67182Level (low/med): LOWDate Received: 08/22/2007% Solids: 91.7

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12000			P
7440-36-0	Antimony	6.5	U	# R	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	126		J	P
7440-41-7	Beryllium	0.41	J		P
7440-43-9	Cadmium	0.23	J		P
7440-70-2	Calcium	3000			P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	18.7			P
7439-89-6	Iron	15900			P
7439-92-1	Lead	10.0			P
7439-95-4	Magnesium	4250			P
7439-96-5	Manganese	320		# J	P
7440-02-0	Nickel	15.7			P
7440-09-7	Potassium	1290			P
7782-49-2	Selenium	3.8	U	# UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	165	U	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.2			P
7440-66-6	Zinc	57.3		# J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A83

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67183Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.6

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13300			P
7440-36-0	Antimony	1.4	J	N J	P
7440-38-2	Arsenic	4.9			P
7440-39-3	Barium	133		J	P
7440-41-7	Beryllium	0.41	J		P
7440-43-9	Cadmium	0.76			P
7440-70-2	Calcium	20000			P
7440-47-3	Chromium	20.1			P
7440-48-4	Cobalt	7.9			P
7440-50-8	Copper	22.1			P
7439-89-6	Iron	17600			P
7439-92-1	Lead	85.2			P
7439-95-4	Magnesium	6170			P
7439-96-5	Manganese	422		N J	P
7440-02-0	Nickel	18.6			P
7440-09-7	Potassium	1800			P
7782-49-2	Selenium	3.7	S	N U J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	133	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.1			P
7440-66-6	Zinc	214		N J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A84

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67184Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.4

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12300			P
7440-36-0	Antimony	6.3	U	N R	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	121		J	P
7440-41-7	Beryllium	0.40	J		P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	8320			P
7440-47-3	Chromium	18.4			P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	19.6			P
7439-89-6	Iron	17400			P
7439-92-1	Lead	38.7			P
7439-95-4	Magnesium	4740			P
7439-96-5	Manganese	456		N J	P
7440-02-0	Nickel	17.4			P
7440-09-7	Potassium	1470			P
7782-49-2	Selenium	3.7	U	N UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	111	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.5			P
7440-66-6	Zinc	301		N J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A85

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67185

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 90.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13800			P
7440-36-0	Antimony	6.6	✓	* R	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	109		J	P
7440-41-7	Beryllium	0.43	J		P
7440-43-9	Cadmium	0.32	J		P
7440-70-2	Calcium	7170			P
7440-47-3	Chromium	17.7			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	22.4			P
7439-89-6	Iron	16700			P
7439-92-1	Lead	22.8			P
7439-95-4	Magnesium	4690			P
7439-96-5	Manganese	369		* J	P
7440-02-0	Nickel	16.8			P
7440-09-7	Potassium	1250			P
7782-49-2	Selenium	3.9	✓	* U J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	194	J		P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	30.7			P
7440-66-6	Zinc	82.8		* J	P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A86

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67186Level (low/med): LOWDate Received: 08/22/2007% Solids: 86.8Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16700			P
7440-36-0	Antimony	6.9	✓	* R	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	147		J	P
7440-41-7	Beryllium	0.48	J		P
7440-43-9	Cadmium	0.40	J		P
7440-70-2	Calcium	5850			P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	6.4			P
7440-50-8	Copper	20.4			P
7439-89-6	Iron	15400			P
7439-92-1	Lead	18.4			P
7439-95-4	Magnesium	4010			P
7439-96-5	Manganese	345		* J	P
7440-02-0	Nickel	15.1			P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	4.0	✓	* UJ	P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	226	J		P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	24.5			P
7440-66-6	Zinc	82.4		* J	P

RM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A87

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67187Level (low/med): LOWDate Received: 08/22/2007% Solids: 92.5

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15700			P
7440-36-0	Antimony	6.5	J	* R	P
7440-38-2	Arsenic	5.2			P
7440-39-3	Barium	401		J	P
7440-41-7	Beryllium	0.54	J		P
7440-43-9	Cadmium	0.73			P
7440-70-2	Calcium	26000			P
7440-47-3	Chromium	19.6			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	19.0			P
7439-89-6	Iron	17100			P
7439-92-1	Lead	50.7			P
7439-95-4	Magnesium	4280			P
7439-96-5	Manganese	2370		* J	P
7440-02-0	Nickel	16.9			P
7440-09-7	Potassium	2150			P
7782-49-2	Selenium	3.8	J	* UJ	P
7440-22-4	Silver	0.27	J	U	P
7440-23-5	Sodium	144	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	29.8			P
7440-66-6	Zinc	211		* J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A88

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67188

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18200			P
7440-36-0	Antimony	6.3	✓	* R	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	291		J	P
7440-41-7	Beryllium	0.54			P
7440-43-9	Cadmium	0.34	J		P
7440-70-2	Calcium	7650			P
7440-47-3	Chromium	17.2			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	15.1			P
7439-89-6	Iron	19200			P
7439-92-1	Lead	26.6			P
7439-95-4	Magnesium	4070			P
7439-96-5	Manganese	560		* J	P
7440-02-0	Nickel	17.6			P
7440-09-7	Potassium	1120			P
7782-49-2	Selenium	3.7	✓	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	181	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.0			P
7440-66-6	Zinc	114		* J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A89

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67189Level (low/med): LOWDate Received: 08/22/2007% Solids: 93.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18800			P
7440-36-0	Antimony	6.4	<i>H</i>	<i>* R</i>	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	138		<i>J</i>	P
7440-41-7	Beryllium	0.56			P
7440-43-9	Cadmium	0.35	<i>J</i>		P
7440-70-2	Calcium	7050			P
7440-47-3	Chromium	18.7			P
7440-48-4	Cobalt	7.3			P
7440-50-8	Copper	24.1			P
7439-89-6	Iron	18000			P
7439-92-1	Lead	20.9			P
7439-95-4	Magnesium	4580			P
7439-96-5	Manganese	358		<i>* J</i>	P
7440-02-0	Nickel	16.5			P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	3.7	<i>H</i>	<i>* U J</i>	P
7440-22-4	Silver	1.1	<i>U</i>		P
7440-23-5	Sodium	257	<i>J</i>		P
7440-28-0	Thallium	2.7	<i>U</i>		P
7440-62-2	Vanadium	34.6			P
7440-66-6	Zinc	92.3		<i>* J</i>	P

DM
9-25-07

Color Before: BROWN

Clarity Before:

Texture: MEDIUMColor After: YELLOW

Clarity After:

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A90

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67190Level (low/med): LOWDate Received: 08/22/2007% Solids: 93.8

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	6.4	#	# R	P
7440-38-2	Arsenic	5.1			P
7440-39-3	Barium	123		J	P
7440-41-7	Beryllium	0.52	J		P
7440-43-9	Cadmium	0.36	J		P
7440-70-2	Calcium	5050			P
7440-47-3	Chromium	14.4			P
7440-48-4	Cobalt	6.7			P
7440-50-8	Copper	22.2			P
7439-89-6	Iron	16000			P
7439-92-1	Lead	15.4			P
7439-95-4	Magnesium	3960			P
7439-96-5	Manganese	349		# J	P
7440-02-0	Nickel	14.8			P
7440-09-7	Potassium	967			P
7782-49-2	Selenium	3.7	#	# U J	P
7440-22-4	Silver	0.22	J	U	P
7440-23-5	Sodium	216	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	28.9			P
7440-66-6	Zinc	78.3		# J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A91

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67191

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 91.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14000			P
7440-36-0	Antimony	6.6	✓	* R	P
7440-38-2	Arsenic	4.6			P
7440-39-3	Barium	120		J	P
7440-41-7	Beryllium	0.42	J		P
7440-43-9	Cadmium	0.34	J		P
7440-70-2	Calcium	7190			P
7440-47-3	Chromium	15.9			P
7440-48-4	Cobalt	8.2			P
7440-50-8	Copper	28.0			P
7439-89-6	Iron	16900			P
7439-92-1	Lead	32.4			P
7439-95-4	Magnesium	4400			P
7439-96-5	Manganese	471		* J	P
7440-02-0	Nickel	16.7			P
7440-09-7	Potassium	1280			P
7782-49-2	Selenium	3.8	✓	* UJ	P
7440-22-4	Silver	0.13	✓	U	P
7440-23-5	Sodium	173	✓	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.6			P
7440-66-6	Zinc	86.7		✓ J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

IA-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A92

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67192Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.1Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9210			P
7440-36-0	Antimony	1.2	J	H J	P
7440-38-2	Arsenic	10.2			P
7440-39-3	Barium	98.6		J	P
7440-41-7	Beryllium	0.31	J		P
7440-43-9	Cadmium	6.8			P
7440-70-2	Calcium	64200			P
7440-47-3	Chromium	11.6			P
7440-48-4	Cobalt	4.7	J		P
7440-50-8	Copper	54.1			P
7439-89-6	Iron	11800			P
7439-92-1	Lead	357			P
7439-95-4	Magnesium	32300			P
7439-96-5	Manganese	376		H J	P
7440-02-0	Nickel	15.7			P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	3.6	H	H U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	520	U		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	25.4			P
7440-66-6	Zinc	2040		H J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A93

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67193

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14400			P
7440-36-0	Antimony	1.2	J	# J	P
7440-38-2	Arsenic	6.2			P
7440-39-3	Barium	195		J	P
7440-41-7	Beryllium	0.44	J		P
7440-43-9	Cadmium	3.2			P
7440-70-2	Calcium	31200			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	7.4			P
7440-50-8	Copper	56.5			P
7439-89-6	Iron	17800			P
7439-92-1	Lead	251			P
7439-95-4	Magnesium	15200			P
7439-96-5	Manganese	302		# J	P
7440-02-0	Nickel	19.3			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	3.7	#	# U J	P
7440-22-4	Silver	0.13	#	U	P
7440-23-5	Sodium	52.5	#	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	29.3			P
7440-66-6	Zinc	652		# J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A94

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67194Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.5

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12400			P
7440-36-0	Antimony	1.4	J	* J	P
7440-38-2	Arsenic	6.1			P
7440-39-3	Barium	120		J	P
7440-41-7	Beryllium	0.40	J		P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	26700			P
7440-47-3	Chromium	15.8			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	38.9			P
7439-89-6	Iron	17300			P
7439-92-1	Lead	292			P
7439-95-4	Magnesium	14800			P
7439-96-5	Manganese	355		* J	P
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	3.7	J	* U J	P
7440-22-4	Silver	0.25	J	U	P
7440-23-5	Sodium	529	U		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.6			P
7440-66-6	Zinc	1460		* J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A95

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67195

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12000			P
7440-36-0	Antimony	1.2	J	N J	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	92.6		J	P
7440-41-7	Beryllium	0.39	J		P
7440-43-9	Cadmium	0.21	J		P
7440-70-2	Calcium	2760			P
7440-47-3	Chromium	18.3			P
7440-48-4	Cobalt	8.8			P
7440-50-8	Copper	17.9			P
7439-89-6	Iron	20000			P
7439-92-1	Lead	19.8			P
7439-95-4	Magnesium	4990			P
7439-96-5	Manganese	326		N J	P
7440-02-0	Nickel	20.6			P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	3.6	B	N UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	70.7	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.3			P
7440-66-6	Zinc	90.4		B J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A96

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67196Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.7Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18700			P
7440-36-0	Antimony	6.3	✓	* R	P
7440-38-2	Arsenic	6.2			P
7440-39-3	Barium	200		J	P
7440-41-7	Beryllium	0.59			P
7440-43-9	Cadmium	0.61			P
7440-70-2	Calcium	16900			P
7440-47-3	Chromium	19.7			P
7440-48-4	Cobalt	7.6			P
7440-50-8	Copper	21.7			P
7439-89-6	Iron	18400			P
7439-92-1	Lead	31.7			P
7439-95-4	Magnesium	6980			P
7439-96-5	Manganese	699		* J	P
7440-02-0	Nickel	20.8			P
7440-09-7	Potassium	1840			P
7782-49-2	Selenium	3.7	✓	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	134	✓	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	38.3			P
7440-66-6	Zinc	291		* J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A97

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A75

Matrix (soil/water): SOIL Lab Sample ID: BT67197

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18600			P
7440-36-0	Antimony	6.3	8	* R	P
7440-38-2	Arsenic	4.8			P
7440-39-3	Barium	158		J	P
7440-41-7	Beryllium	0.59			P
7440-43-9	Cadmium	0.56			P
7440-70-2	Calcium	9760			P
7440-47-3	Chromium	19.1			P
7440-48-4	Cobalt	8.1			P
7440-50-8	Copper	24.2			P
7439-89-6	Iron	19100			P
7439-92-1	Lead	22.4			P
7439-95-4	Magnesium	6530			P
7439-96-5	Manganese	461		* J	P
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1740			P
7782-49-2	Selenium	3.7	8	* U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	172	8	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	37.7			P
7440-66-6	Zinc	144		* J	P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A98

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A75Matrix (soil/water): SOILLab Sample ID: BT67198Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.4Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17300			P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	157		J	P
7440-41-7	Beryllium	0.55			P
7440-43-9	Cadmium	0.52	J		P
7440-70-2	Calcium	9200			P
7440-47-3	Chromium	17.2			P
7440-48-4	Cobalt	8.2			P
7440-50-8	Copper	23.7			P
7439-89-6	Iron	18300			P
7439-92-1	Lead	23.8			P
7439-95-4	Magnesium	6110			P
7439-96-5	Manganese	433		* J	P
7440-02-0	Nickel	19.6			P
7440-09-7	Potassium	1610			P
7782-49-2	Selenium	3.6	U	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	163	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.8			P
7440-66-6	Zinc	105		* J	P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 25, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8A99, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8A99	MJ8AA0	MJ8AA1	MJ8AA2	MJ8AA3	MJ8AA4	MJ8AA5
MJ8AA6	MJ8AA7	MJ8AA8	MJ8AA9	MJ8AB0	MJ8AB1	MJ8AB2
MJ8AB3	MJ8AJ5	MJ8AJ6	MJ8AJ7	MJ8AJ8	MJ8AJ9	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/15/07 thru 8/17/07. ICP-AES analysis was conducted on 8/25/07 and 8/26/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (91-102%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS)

Analyte recoveries for the LCS were within the established control limits for solid samples with the exception of barium. Barium data were qualified (J) and may be biased low.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of sodium and silver. Affected values for these analytes were qualified (U).

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8AA2. Percent recoveries (81-100%) met the criterion (75-125%) for all elements with the exception of antimony (21%) and selenium (63%). Antimony data were qualified (J or R) and selenium data were qualified (UJ). Values for these elements may be biased low.

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample was analyzed for sample MJ8AA2. Relative percent differences ($\leq 35\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$).

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8AA2. Percent differences ($\leq 11\%$) were within the 1% allowable range of the acceptance criterion ($\leq 10\%$) with the exception of copper (12%), lead (13%) and vanadium (13%). Affected sample data were qualified (J). Copper, lead and vanadium values may be biased low.

ASSESSMENT SUMMARY

The following is a summary of qualified data:

Barium data were qualified (J) due to a low recovery for the laboratory control standard. Barium values may be biased low.

Sodium and silver data were qualified (U) due to the detected presence of these elements in the preparation and/or instrument calibration blanks.

Antimony data were qualified (J or R) and selenium data were qualified (UJ) due to low matrix spike recoveries. Antimony and selenium data may be biased low.

Copper, lead and vanadium data were qualified (J) due to high percent differences in the serial dilution analysis. Values for these elements may be biased low.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8A99

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99Matrix (soil/water): SOIL Lab Sample ID: BT67199Level (low/med): LOW Date Received: 08/22/2007% Solids: 96.0Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19100		*	P
7440-36-0	Antimony	1.6	J	* J	P
7440-38-2	Arsenic	4.6		*	P
7440-39-3	Barium	165		J	P
7440-41-7	Beryllium	0.60			P
7440-43-9	Cadmium	0.47	J		P
7440-70-2	Calcium	8200			P
7440-47-3	Chromium	18.8		*	P
7440-48-4	Cobalt	8.0		E	P
7440-50-8	Copper	27.4		*E J	P
7439-89-6	Iron	18600		*	P
7439-92-1	Lead	26.9		*E J	P
7439-95-4	Magnesium	5900			P
7439-96-5	Manganese	362		*	P
7440-02-0	Nickel	19.8		E	P
7440-09-7	Potassium	1550			P
7782-49-2	Selenium	3.6	U	* U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	110	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	38.9		*E J	P
7440-66-6	Zinc	103			P

DM
4-25-07Color Before: BROWN Clarity Before: _____ Texture: MEDIUMColor After: YELLOW Clarity After: _____ Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67200

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 97.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17800		✓	P
7440-36-0	Antimony	1.1	✓	* J	P
7440-38-2	Arsenic	5.7		✓	P
7440-39-3	Barium	179		J	P
7440-41-7	Beryllium	0.59			P
7440-43-9	Cadmium	0.56			P
7440-70-2	Calcium	16200			P
7440-47-3	Chromium	17.2		✓	P
7440-48-4	Cobalt	7.4		✓	P
7440-50-8	Copper	22.8		* J	P
7439-89-6	Iron	17800		✓	P
7439-92-1	Lead	30.5		* J	P
7439-95-4	Magnesium	6790			P
7439-96-5	Manganese	627		✓	P
7440-02-0	Nickel	20.2		✓	P
7440-09-7	Potassium	1730			P
7782-49-2	Selenium	3.6	✓	* U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	110	✓	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.5		* J	P
7440-66-6	Zinc	250			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67201

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13000		*	P
7440-36-0	Antimony	1.3	J	* J	P
7440-38-2	Arsenic	4.2		*	P
7440-39-3	Barium	114		J	P
7440-41-7	Beryllium	0.40	J		P
7440-43-9	Cadmium	1.8			P
7440-70-2	Calcium	15000			P
7440-47-3	Chromium	15.9		*	P
7440-48-4	Cobalt	7.0		E	P
7440-50-8	Copper	22.9		*E J	P
7439-89-6	Iron	17500		*	P
7439-92-1	Lead	136		*E J	P
7439-95-4	Magnesium	7370			P
7439-96-5	Manganese	602		*	P
7440-02-0	Nickel	17.5		E	P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	3.6	J	* u J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	59.8	J	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.5		*E J	P
7440-66-6	Zinc	498			P

DM
4-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

MJ8AA2

% Solids: 97.1

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15900		*	P
7440-36-0	Antimony	1.3	J	* J	P
7440-38-2	Arsenic	5.0		*	P
7440-39-3	Barium	134		J	P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.56			P
7440-70-2	Calcium	8670			P
7440-47-3	Chromium	15.7		*	P
7440-48-4	Cobalt	7.4		E	P
7440-50-8	Copper	23.1		*E J	P
7439-89-6	Iron	18800		*	P
7439-92-1	Lead	36.1		*E J	P
7439-95-4	Magnesium	5010			P
7439-96-5	Manganese	520		*	P
7440-02-0	Nickel	18.5		E	P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	3.6	E	* uJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	138	J	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.6		*E J	P
7440-66-6	Zinc	141			P

DM
9-25-01

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67203

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16200		*	P
7440-36-0	Antimony	6.2	J	* R	P
7440-38-2	Arsenic	4.4		*	P
7440-39-3	Barium	144		J	P
7440-41-7	Beryllium	0.48	J		P
7440-43-9	Cadmium	0.69			P
7440-70-2	Calcium	8270			P
7440-47-3	Chromium	16.8		*	P
7440-48-4	Cobalt	8.0		E	P
7440-50-8	Copper	24.4		*E J	P
7439-89-6	Iron	19400		*	P
7439-92-1	Lead	24.3		*E J	P
7439-95-4	Magnesium	5470			P
7439-96-5	Manganese	503		*	P
7440-02-0	Nickel	20.4		E	P
7440-09-7	Potassium	1090			P
7782-49-2	Selenium	3.6	J	* U J	P
7440-22-4	Silver	0.12	J	U	P
7440-23-5	Sodium	57.0	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.1		*E J	P
7440-66-6	Zinc	169			P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67204

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14500		*	P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	4.1		*	P
7440-39-3	Barium	130		J	P
7440-41-7	Beryllium	0.42	J		P
7440-43-9	Cadmium	0.47	J		P
7440-70-2	Calcium	6030			P
7440-47-3	Chromium	16.0		*	P
7440-48-4	Cobalt	7.8		E	P
7440-50-8	Copper	22.6		*E J	P
7439-89-6	Iron	18500		*	P
7439-92-1	Lead	20.7		*E J	P
7439-95-4	Magnesium	5010			P
7439-96-5	Manganese	360		*	P
7440-02-0	Nickel	20.7		E	P
7440-09-7	Potassium	1120			P
7782-49-2	Selenium	3.6	U	* U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	137	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.6		*E J	P
7440-66-6	Zinc	119			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA5

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67205Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11900		✓	P
7440-36-0	Antimony	6.2	✓	* R	P
7440-38-2	Arsenic	6.3		*	P
7440-39-3	Barium	119		J	P
7440-41-7	Beryllium	0.41	J		P
7440-43-9	Cadmium	8.2			P
7440-70-2	Calcium	27100			P
7440-47-3	Chromium	16.8		*	P
7440-48-4	Cobalt	6.3		E	P
7440-50-8	Copper	24.9		*E J	P
7439-89-6	Iron	14500		*	P
7439-92-1	Lead	290		*E J	P
7439-95-4	Magnesium	12200			P
7439-96-5	Manganese	396		*	P
7440-02-0	Nickel	16.1		E	P
7440-09-7	Potassium	1400			P
7782-49-2	Selenium	3.6	✓	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	521	U		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.8		*E J	P
7440-66-6	Zinc	2370			P

DM
9-25-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA6

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728NRAS No.: _____ SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67206Level (low/med): LOWDate Received: 08/22/2007% Solids: 92.6Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13600		*	P
7440-36-0	Antimony	1.2	J	N J	P
7440-38-2	Arsenic	5.5		*	P
7440-39-3	Barium	150		J	P
7440-41-7	Beryllium	0.43	J		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	10600			P
7440-47-3	Chromium	15.7		*	P
7440-48-4	Cobalt	6.8		B	P
7440-50-8	Copper	19.9		*B J	P
7439-89-6	Iron	15000		*	P
7439-92-1	Lead	66.9		*B J	P
7439-95-4	Magnesium	4520			P
7439-96-5	Manganese	452		*	P
7440-02-0	Nickel	17.1		B	P
7440-09-7	Potassium	1300			P
7782-49-2	Selenium	3.8	B	*UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	57.0	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.0		*B J	P
7440-66-6	Zinc	489			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA7

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728NRAS No.: _____ SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67207Level (low/med): LOWDate Received: 08/22/2007% Solids: 87.4Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15400		*	P
7440-36-0	Antimony	6.9	H	* R	P
7440-38-2	Arsenic	5.7		*	P
7440-39-3	Barium	176		J	P
7440-41-7	Beryllium	0.50	J		P
7440-43-9	Cadmium	0.83			P
7440-70-2	Calcium	12600			P
7440-47-3	Chromium	17.4		*	P
7440-48-4	Cobalt	7.6		H	P
7440-50-8	Copper	22.9		*E J	P
7439-89-6	Iron	15800		*	P
7439-92-1	Lead	37.2		*E J	P
7439-95-4	Magnesium	4320			P
7439-96-5	Manganese	744		*	P
7440-02-0	Nickel	17.3		H	P
7440-09-7	Potassium	1740			P
7782-49-2	Selenium	4.0	H	* U J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	173	H	U	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	29.5		*E J	P
7440-66-6	Zinc	208			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA8

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67208

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15300		*	P
7440-36-0	Antimony	1.4	J	* J	P
7440-38-2	Arsenic	5.1		*	P
7440-39-3	Barium	139		J	P
7440-41-7	Beryllium	0.48	J		P
7440-43-9	Cadmium	0.65			P
7440-70-2	Calcium	6660			P
7440-47-3	Chromium	16.6		*	P
7440-48-4	Cobalt	7.1		*	P
7440-50-8	Copper	21.7		* J	P
7439-89-6	Iron	17000		*	P
7439-92-1	Lead	23.4		* J	P
7439-95-4	Magnesium	4270			P
7439-96-5	Manganese	425		*	P
7440-02-0	Nickel	17.4		*	P
7440-09-7	Potassium	1250			P
7782-49-2	Selenium	3.9	J	* U J	P
7440-22-4	Silver	0.12	J	U	P
7440-23-5	Sodium	133	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	29.1		* J	P
7440-66-6	Zinc	189			P

DM
4-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AA9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99Matrix (soil/water): SOIL Lab Sample ID: BT67209Level (low/med): LOW Date Received: 08/22/2007% Solids: 95.4Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14200		*	P
7440-36-0	Antimony	6.3	H	* R	P
7440-38-2	Arsenic	4.8		*	P
7440-39-3	Barium	137		J	P
7440-41-7	Beryllium	0.46	J		P
7440-43-9	Cadmium	0.48	J		P
7440-70-2	Calcium	8130			P
7440-47-3	Chromium	17.2		*	P
7440-48-4	Cobalt	6.8		H	P
7440-50-8	Copper	23.0		* H J	P
7439-89-6	Iron	14900		*	P
7439-92-1	Lead	27.4		* H J	P
7439-95-4	Magnesium	4140			P
7439-96-5	Manganese	370		*	P
7440-02-0	Nickel	15.7		H	P
7440-09-7	Potassium	1350			P
7782-49-2	Selenium	3.7	H	* U J	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	173	J	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.9		* H J	P
7440-66-6	Zinc	133			P

DM
9-25-07Color Before: BROWN Clarity Before: _____ Texture: MEDIUMColor After: YELLOW Clarity After: _____ Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67210

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800		*	P
7440-36-0	Antimony	6.4	U	* R	P
7440-38-2	Arsenic	5.4		*	P
7440-39-3	Barium	159		J	P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.48	J		P
7440-70-2	Calcium	7770			P
7440-47-3	Chromium	15.7		*	P
7440-48-4	Cobalt	6.9		E	P
7440-50-8	Copper	21.2		*E J	P
7439-89-6	Iron	15300		*	P
7439-92-1	Lead	22.7		*E J	P
7439-95-4	Magnesium	3940			P
7439-96-5	Manganese	495		*	P
7440-02-0	Nickel	15.6		E	P
7440-09-7	Potassium	1290			P
7782-49-2	Selenium	3.7	U	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	126	U	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.8		*E J	P
7440-66-6	Zinc	116			P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67211

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13500		*	P
7440-36-0	Antimony	1.2	J	* J	P
7440-38-2	Arsenic	4.4		*	P
7440-39-3	Barium	162		J	P
7440-41-7	Beryllium	0.43	J		P
7440-43-9	Cadmium	0.35	J		P
7440-70-2	Calcium	4250			P
7440-47-3	Chromium	17.3		*	P
7440-48-4	Cobalt	7.6		E	P
7440-50-8	Copper	22.4		*E J	P
7439-89-6	Iron	16700		*	P
7439-92-1	Lead	14.8		*E J	P
7439-95-4	Magnesium	4240			P
7439-96-5	Manganese	440		*	P
7440-02-0	Nickel	17.2		E	P
7440-09-7	Potassium	1340			P
7782-49-2	Selenium	3.8	E	* U J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	115	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.0		*E J	P
7440-66-6	Zinc	89.3			P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB3

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67213Level (low/med): LOWDate Received: 08/22/2007Solids: 90.8Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15000		*	P
7440-36-0	Antimony	6.6	*	* R	P
7440-38-2	Arsenic	5.6		*	P
7440-39-3	Barium	163		J	P
7440-41-7	Beryllium	0.49	J		P
7440-43-9	Cadmium	0.80			P
7440-70-2	Calcium	10800			P
7440-47-3	Chromium	17.5		*	P
7440-48-4	Cobalt	7.8		*	P
7440-50-8	Copper	22.8		*E J	P
7439-89-6	Iron	16500		*	P
7439-92-1	Lead	39.3		*E J	P
7439-95-4	Magnesium	4300			P
7439-96-5	Manganese	664		*	P
7440-02-0	Nickel	17.6		*	P
7440-09-7	Potassium	1480			P
7782-49-2	Selenium	3.9	*	* U J	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	100	*	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	29.3		*E J	P
7440-66-6	Zinc	215			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB2

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67212Level (low/med): LOWDate Received: 08/22/2007% Solids: 93.3

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700		*	P
7440-36-0	Antimony	6.4	H	* R	P
7440-38-2	Arsenic	4.8		*	P
7440-39-3	Barium	95.0		J	P
7440-41-7	Beryllium	0.40	J		P
7440-43-9	Cadmium	0.20	J		P
7440-70-2	Calcium	3110			P
7440-47-3	Chromium	17.0		*	P
7440-48-4	Cobalt	7.1		E	P
7440-50-8	Copper	20.6		*E J	P
7439-89-6	Iron	16600		*	P
7439-92-1	Lead	12.2		*E J	P
7439-95-4	Magnesium	4280			P
7439-96-5	Manganese	349		*	P
7440-02-0	Nickel	16.4		E	P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	3.8	H	* UJ	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	130	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.5		*E J	P
7440-66-6	Zinc	68.0			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67214

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13800		*	P
7440-36-0	Antimony	6.3	H	* R	P
7440-38-2	Arsenic	4.6		*	P
7440-39-3	Barium	157		J	P
7440-41-7	Beryllium	0.45	J		P
7440-43-9	Cadmium	0.54			P
7440-70-2	Calcium	18300			P
7440-47-3	Chromium	18.8		*	P
7440-48-4	Cobalt	7.9		E	P
7440-50-8	Copper	17.6		* E J	P
7439-89-6	Iron	18600		*	P
7439-92-1	Lead	54.8		* E J	P
7439-95-4	Magnesium	5170			P
7439-96-5	Manganese	618		*	P
7440-02-0	Nickel	19.9		E	P
7440-09-7	Potassium	1850			P
7782-49-2	Selenium	3.7	U	* U S	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	184	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.7		* E J	P
7440-66-6	Zinc	147			P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99Matrix (soil/water): SOIL Lab Sample ID: BT67215Level (low/med): LOW Date Received: 08/22/2007% Solids: 95.3Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15400		*	P
7440-36-0	Antimony	1.6	J	* J	P
7440-38-2	Arsenic	5.4		*	P
7440-39-3	Barium	142		J	P
7440-41-7	Beryllium	0.47	J		P
7440-43-9	Cadmium	0.40	J		P
7440-70-2	Calcium	10700			P
7440-47-3	Chromium	18.9		*	P
7440-48-4	Cobalt	8.2		*	P
7440-50-8	Copper	22.4		* J	P
7439-89-6	Iron	19100		*	P
7439-92-1	Lead	27.5		* J	P
7439-95-4	Magnesium	5790			P
7439-96-5	Manganese	481		*	P
7440-02-0	Nickel	20.4		*	P
7440-09-7	Potassium	1360			P
7782-49-2	Selenium	3.7	J	* U J	P
7440-22-4	Silver	0.20	J	U	P
7440-23-5	Sodium	89.2	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.6		* J	P
7440-66-6	Zinc	110			P

DM
9-25-07Color Before: BROWN Clarity Before: Texture: MEDIUMColor After: YELLOW Clarity After: Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8A99

Matrix (soil/water): SOIL Lab Sample ID: BT67216

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13300		*	P
7440-36-0	Antimony	6.3	*	* R	P
7440-38-2	Arsenic	4.2		*	P
7440-39-3	Barium	112		J	P
7440-41-7	Beryllium	0.40	J		P
7440-43-9	Cadmium	0.28	J		P
7440-70-2	Calcium	3820			P
7440-47-3	Chromium	14.7		*	P
7440-48-4	Cobalt	7.4		E	P
7440-50-8	Copper	21.3		*E J	P
7439-89-6	Iron	17200		*	P
7439-92-1	Lead	16.0		*E J	P
7439-95-4	Magnesium	3940			P
7439-96-5	Manganese	397		*	P
7440-02-0	Nickel	17.4		E	P
7440-09-7	Potassium	998			P
7782-49-2	Selenium	3.7	*	* U J	P
7440-22-4	Silver	0.29	*	U	P
7440-23-5	Sodium	121	*	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	25.0		*E J	P
7440-66-6	Zinc	71.4			P

DM
9-25-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ8

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8A99Matrix (soil/water): SOILLab Sample ID: BT67217Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.6Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800		*	P
7440-36-0	Antimony	1.2	J	* J	P
7440-38-2	Arsenic	4.4		*	P
7440-39-3	Barium	108		J	P
7440-41-7	Beryllium	0.43	J		P
7440-43-9	Cadmium	0.32	J		P
7440-70-2	Calcium	3430			P
7440-47-3	Chromium	20.7		*	P
7440-48-4	Cobalt	8.4		#	P
7440-50-8	Copper	26.1		* J	P
7439-89-6	Iron	20700		*	P
7439-92-1	Lead	18.2		* J	P
7439-95-4	Magnesium	5590			P
7439-96-5	Manganese	343		*	P
7440-02-0	Nickel	22.0		#	P
7440-09-7	Potassium	1240			P
7782-49-2	Selenium	3.6	J	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	163	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	34.1		* J	P
7440-66-6	Zinc	76.7			P

DM
9-25-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AJ9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8A99
 Matrix (soil/water): SOIL Lab Sample ID: BT67218
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13200		*	P
7440-36-0	Antimony	6.3	*	* R	P
7440-38-2	Arsenic	4.6		*	P
7440-39-3	Barium	102		J	P
7440-41-7	Beryllium	0.39	J		P
7440-43-9	Cadmium	0.29	J		P
7440-70-2	Calcium	3490			P
7440-47-3	Chromium	16.9		*	P
7440-48-4	Cobalt	7.8		E	P
7440-50-8	Copper	21.3		*E J	P
7439-89-6	Iron	17800		*	P
7439-92-1	Lead	15.8		*E J	P
7439-95-4	Magnesium	4550			P
7439-96-5	Manganese	285		*	P
7440-02-0	Nickel	18.7		E	P
7440-09-7	Potassium	1200			P
7782-49-2	Selenium	3.7	U	* UJ	P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	79.0	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	27.8		*E J	P
7440-66-6	Zinc	66.2			P

DM
9-25-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 20, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8AB4, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8AB4	MJ8AB5	MJ8AB6	MJ8AB7	MJ8AB8	MJ8AC7	MJ8AC8
MJ8AC9	MJ8AD0	MJ8AD1	MJ8AD2	MJ8AD3	MJ8AD4	MJ8AD5
MJ8AD6	MJ8AD7	MJ8AD8	MJ8AD9	MJ8AE0	MJ8AE1	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/16/07 and 8/17/07. ICP-AES analysis was conducted on 8/24/07 and 8/25/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (91-106%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries for the LCS were within the established control limits for solid samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of arsenic, sodium and silver. Affected samples were qualified (U).

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8AB5. Percent recoveries (77-99%) met the criterion (75-125%) for all elements with the exception of antimony (31%). Antimony data were qualified (UJ) and may be biased low.

DUPLICATE SAMPLE ANALYSIS

A duplicate sample was analyzed for sample MJ8AB5. Relative percent differences ($\leq 31\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$) with the exception of calcium (46%). Calcium data were qualified (J).

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8AB5. Percent differences ($\leq 11\%$) were within the 1% allowable range of the acceptance criterion ($\leq 10\%$) with the exception of lead (16%) and potassium (16%). Affected sample data were qualified (J). Lead data may be biased low whereas potassium data may be biased high.

ASSESSMENT SUMMARY

The following is a summary of qualified data: The (D) qualifier was applied to sample results that required dilution due to analyte concentrations that exceeded the instrument's upper calibration range.

Arsenic, sodium and silver data were qualified (U) due to the detected presence of these elements in the instrument calibration and/or preparation blanks.

Antimony data were qualified (UJ) due to a low matrix spike recovery. Antimony values may be biased low.

Calcium data were qualified (J) due to a high relative percent difference in the duplicate sample analysis. Bias for calcium values could not be determined.

Lead and potassium data were qualified (J) due to high percent differences in the serial dilution analysis. Lead values may be biased low and potassium values may be biased high.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67219

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 97.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15100			P
7440-36-0	Antimony	6.2	U	* U J	P
7440-38-2	Arsenic	1.6		U	P
7440-39-3	Barium	174			P
7440-41-7	Beryllium	0.50	J	U	P
7440-43-9	Cadmium	0.99			P
7440-70-2	Calcium	27300		* J	P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	8.1		U	P
7440-50-8	Copper	27.6			P
7439-89-6	Iron	17500			P
7439-92-1	Lead	43.1		U J	P
7439-95-4	Magnesium	6990		*	P
7439-96-5	Manganese	673			P
7440-02-0	Nickel	20.7			P
7440-09-7	Potassium	2890		U J	P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	0.41	U	U	P
7440-23-5	Sodium	262	U	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.3			P
7440-66-6	Zinc	153			P

24
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4
 Matrix (soil/water): SOIL Lab Sample ID: BT67220
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 94.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15200			P
7440-36-0	Antimony	6.3	U	U <u>UJ</u>	P
7440-38-2	Arsenic	1.1	U		P
7440-39-3	Barium	180			P
7440-41-7	Beryllium	0.49	J	U	P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	30800		U <u>J</u>	P
7440-47-3	Chromium	22.1			P
7440-48-4	Cobalt	7.1		U	P
7440-50-8	Copper	22.3			P
7439-89-6	Iron	16900			P
7439-92-1	Lead	32.1		U <u>J</u>	P
7439-95-4	Magnesium	10300		U	P
7439-96-5	Manganese	737			P
7440-02-0	Nickel	24.5			P
7440-09-7	Potassium	2200		U <u>J</u>	P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	255	U	<u>U</u>	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	138			P

DM
9-20-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67221

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 90.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21700			P
7440-36-0	Antimony	6.6	#	* UJ	P
7440-38-2	Arsenic	1.1		U	P
7440-39-3	Barium	152			P
7440-41-7	Beryllium	0.63		#	P
7440-43-9	Cadmium	0.86			P
7440-70-2	Calcium	3970		* J	P
7440-47-3	Chromium	15.3			P
7440-48-4	Cobalt	7.8		#	P
7440-50-8	Copper	26.3			P
7439-89-6	Iron	20600			P
7439-92-1	Lead	18.5		# J	P
7439-95-4	Magnesium	4590		*	P
7439-96-5	Manganese	394			P
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1200		# J	P
7782-49-2	Selenium	3.9	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	168	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	30.5			P
7440-66-6	Zinc	99.5			P

DM
9-20-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4
 Matrix (soil/water): SOIL Lab Sample ID: BT67222
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 90.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21200			P
7440-36-0	Antimony	6.6	#	# UJ	P
7440-38-2	Arsenic	1.1	U		P
7440-39-3	Barium	165			P
7440-41-7	Beryllium	0.62		#	P
7440-43-9	Cadmium	0.93			P
7440-70-2	Calcium	3950		* J	P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	8.8		#	P
7440-50-8	Copper	29.2			P
7439-89-6	Iron	21700			P
7439-92-1	Lead	19.9		# J	P
7439-95-4	Magnesium	5600		*	P
7439-96-5	Manganese	456			P
7440-02-0	Nickel	24.4			P
7440-09-7	Potassium	1490		# J	P
7782-49-2	Selenium	3.9	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	210	#	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	92.2			P

Dr
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AB8

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67223

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 91.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22200			P
7440-36-0	Antimony	6.6	8	N U J	P
7440-38-2	Arsenic	1.3		U	P
7440-39-3	Barium	164			P
7440-41-7	Beryllium	0.64		8	P
7440-43-9	Cadmium	0.83			P
7440-70-2	Calcium	4180		* J	P
7440-47-3	Chromium	16.0			P
7440-48-4	Cobalt	7.5		8	P
7440-50-8	Copper	23.6			P
7439-89-6	Iron	21900			P
7439-92-1	Lead	20.1		8 J	P
7439-95-4	Magnesium	4740		*	P
7439-96-5	Manganese	364			P
7440-02-0	Nickel	21.8			P
7440-09-7	Potassium	1270		8 J	P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	0.36	8	U	P
7440-23-5	Sodium	175	8	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	29.8			P
7440-66-6	Zinc	108			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4
 Matrix (soil/water): SOIL Lab Sample ID: BT67224
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14600			P
7440-36-0	Antimony	6.5	#	# UJ	P
7440-38-2	Arsenic	1.3		U	P
7440-39-3	Barium	141			P
7440-41-7	Beryllium	0.46	J	#	P
7440-43-9	Cadmium	0.77			P
7440-70-2	Calcium	15200		* J	P
7440-47-3	Chromium	15.6			P
7440-48-4	Cobalt	6.4		#	P
7440-50-8	Copper	21.1			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	39.3		# J	P
7439-95-4	Magnesium	6810		*	P
7439-96-5	Manganese	455			P
7440-02-0	Nickel	15.8			P
7440-09-7	Potassium	1500		# J	P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	0.29	J	U	P
7440-23-5	Sodium	192	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	28.3			P
7440-66-6	Zinc	120			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC8

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67225

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 87.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	24600			P
7440-36-0	Antimony	6.8	✓	* UJ	P
7440-38-2	Arsenic	2.4		U	P
7440-39-3	Barium	185			P
7440-41-7	Beryllium	0.73		✓	P
7440-43-9	Cadmium	0.96			P
7440-70-2	Calcium	10100		* J	P
7440-47-3	Chromium	17.3			P
7440-48-4	Cobalt	7.9		✓	P
7440-50-8	Copper	24.6			P
7439-89-6	Iron	19500			P
7439-92-1	Lead	33.8		✓ J	P
7439-95-4	Magnesium	4180		*	P
7439-96-5	Manganese	531			P
7440-02-0	Nickel	18.5			P
7440-09-7	Potassium	1460		✓ J	P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	215	✓	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	32.1			P
7440-66-6	Zinc	142			P

DM
9-20-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC9

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AB4Matrix (soil/water): SOILLab Sample ID: BT67226Level (low/med): LOWDate Received: 08/22/2007% Solids: 89.1Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20400			P
7440-36-0	Antimony	6.7	U	N UJ	P
7440-38-2	Arsenic	1.1		U	P
7440-39-3	Barium	195			P
7440-41-7	Beryllium	0.59		E	P
7440-43-9	Cadmium	0.76			P
7440-70-2	Calcium	5640		* J	P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	7.4		E	P
7440-50-8	Copper	24.2			P
7439-89-6	Iron	18000			P
7439-92-1	Lead	18.6		E J	P
7439-95-4	Magnesium	4440		*	P
7439-96-5	Manganese	301			P
7440-02-0	Nickel	16.6			P
7440-09-7	Potassium	1350		E J	P
7782-49-2	Selenium	3.9	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	224	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	32.2			P
7440-66-6	Zinc	83.8			P

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67227

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 91.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15100			P
7440-36-0	Antimony	6.6	#	N UJ	P
7440-38-2	Arsenic	1.1	U		P
7440-39-3	Barium	202			P
7440-41-7	Beryllium	0.45	J	E	P
7440-43-9	Cadmium	0.62			P
7440-70-2	Calcium	4030		* J	P
7440-47-3	Chromium	15.8			P
7440-48-4	Cobalt	7.1		E	P
7440-50-8	Copper	19.6			P
7439-89-6	Iron	16100			P
7439-92-1	Lead	15.0		# J	P
7439-95-4	Magnesium	4130		*	P
7439-96-5	Manganese	251			P
7440-02-0	Nickel	15.4			P
7440-09-7	Potassium	1380		# J	P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	0.54	J	U	P
7440-23-5	Sodium	203	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.1			P
7440-66-6	Zinc	70.5			P

DI
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67228

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21300			P
7440-36-0	Antimony	6.4	U	* UJ	P
7440-38-2	Arsenic	1.8		U	P
7440-39-3	Barium	212			P
7440-41-7	Beryllium	0.64		E	P
7440-43-9	Cadmium	0.94			P
7440-70-2	Calcium	11400		* J	P
7440-47-3	Chromium	19.9			P
7440-48-4	Cobalt	8.3		E	P
7440-50-8	Copper	21.8			P
7439-89-6	Iron	21400			P
7439-92-1	Lead	32.0		* J	P
7439-95-4	Magnesium	4700		*	P
7439-96-5	Manganese	775			P
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1530		E J	P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	162	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	32.9			P
7440-66-6	Zinc	149			P

DM
9-20-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD2

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AB4Matrix (soil/water): SOILLab Sample ID: BT67229Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18600			P
7440-36-0	Antimony	6.3	S	N U J	P
7440-38-2	Arsenic	0.91	S	U	P
7440-39-3	Barium	149			P
7440-41-7	Beryllium	0.52	J	S	P
7440-43-9	Cadmium	0.71			P
7440-70-2	Calcium	4140		* J	P
7440-47-3	Chromium	16.2			P
7440-48-4	Cobalt	7.4		S	P
7440-50-8	Copper	22.1			P
7439-89-6	Iron	17400			P
7439-92-1	Lead	14.0		S J	P
7439-95-4	Magnesium	4120		*	P
7439-96-5	Manganese	259			P
7440-02-0	Nickel	16.6			P
7440-09-7	Potassium	1290		S J	P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	184	S	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.4			P
7440-66-6	Zinc	73.0			P

DM
9-20-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67230

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14000			P
7440-36-0	Antimony	6.4	8	W UJ	P
7440-38-2	Arsenic	1.6		U	P
7440-39-3	Barium	106			P
7440-41-7	Beryllium	0.45	J	8	P
7440-43-9	Cadmium	0.68			P
7440-70-2	Calcium	2770		8 J	P
7440-47-3	Chromium	18.6			P
7440-48-4	Cobalt	8.5		8	P
7440-50-8	Copper	20.5			P
7439-89-6	Iron	19100			P
7439-92-1	Lead	12.2		8 J	P
7439-95-4	Magnesium	4550		8	P
7439-96-5	Manganese	372			P
7440-02-0	Nickel	18.8			P
7440-09-7	Potassium	1690		8 J	P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	166	8	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	33.0			P
7440-66-6	Zinc	64.3			P

DM
9-20-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67231

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12300			P
7440-36-0	Antimony	6.3	<i>H</i>	<i>* UJ</i>	P
7440-38-2	Arsenic	1.7		<i>U</i>	P
7440-39-3	Barium	89.7			P
7440-41-7	Beryllium	0.39	<i>J</i>	<i>E</i>	P
7440-43-9	Cadmium	0.63			P
7440-70-2	Calcium	2980		<i>* J</i>	P
7440-47-3	Chromium	18.8			P
7440-48-4	Cobalt	8.2		<i>E</i>	P
7440-50-8	Copper	21.3			P
7439-89-6	Iron	18600			P
7439-92-1	Lead	13.2		<i>E J</i>	P
7439-95-4	Magnesium	4610		<i>*</i>	P
7439-96-5	Manganese	402			P
7440-02-0	Nickel	19.1			P
7440-09-7	Potassium	1620		<i>E J</i>	P
7782-49-2	Selenium	3.7	<i>U</i>		P
7440-22-4	Silver	1.1	<i>U</i>		P
7440-23-5	Sodium	163	<i>J</i>	<i>U</i>	P
7440-28-0	Thallium	2.6	<i>U</i>		P
7440-62-2	Vanadium	31.7			P
7440-66-6	Zinc	65.8			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67232

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12100			P
7440-36-0	Antimony	6.4	<i>8</i>	<i>8 u J</i>	P
7440-38-2	Arsenic	3.3			P
7440-39-3	Barium	107			P
7440-41-7	Beryllium	0.39	J	<i>8</i>	P
7440-43-9	Cadmium	0.59			P
7440-70-2	Calcium	2930		<i>* J</i>	P
7440-47-3	Chromium	16.9			P
7440-48-4	Cobalt	6.9		<i>8</i>	P
7440-50-8	Copper	20.7			P
7439-89-6	Iron	17100			P
7439-92-1	Lead	17.5		<i>8 J</i>	P
7439-95-4	Magnesium	4060		<i>*</i>	P
7439-96-5	Manganese	409			P
7440-02-0	Nickel	16.2			P
7440-09-7	Potassium	1490		<i>8 J</i>	P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	149	<i>8</i>	<i>u</i>	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.5			P
7440-66-6	Zinc	62.1			P

DM
9-26-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD6

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AB4Matrix (soil/water): SOILLab Sample ID: BT67233Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12500			P
7440-36-0	Antimony	6.4	U	N U J	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	128			P
7440-41-7	Beryllium	0.40	J	E	P
7440-43-9	Cadmium	6.6			P
7440-70-2	Calcium	27900		* J	P
7440-47-3	Chromium	14.0			P
7440-48-4	Cobalt	5.8		E	P
7440-50-8	Copper	22.3			P
7439-89-6	Iron	15800			P
7439-92-1	Lead	280		E J	P
7439-95-4	Magnesium	13200		*	P
7439-96-5	Manganese	435			P
7440-02-0	Nickel	15.8			P
7440-09-7	Potassium	1350		E J	P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	56.9	J	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	25.7			P
7440-66-6	Zinc	1660			P

DM
9-20-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4
 Matrix (soil/water): SOIL Lab Sample ID: BT67234
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 88.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17500			P
7440-36-0	Antimony	6.8	#	* UJ	P
7440-38-2	Arsenic	3.6			P
7440-39-3	Barium	177			P
7440-41-7	Beryllium	0.50	J	#	P
7440-43-9	Cadmium	9.4			P
7440-70-2	Calcium	19600		* J	P
7440-47-3	Chromium	18.6			P
7440-48-4	Cobalt	8.1		#	P
7440-50-8	Copper	32.7			P
7439-89-6	Iron	20000			P
7439-92-1	Lead	217		# J	P
7439-95-4	Magnesium	11400		*	P
7439-96-5	Manganese	504			P
7440-02-0	Nickel	21.5			P
7440-09-7	Potassium	1580		# J	P
7782-49-2	Selenium	3.9	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	563	U		P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	2360			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD8

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67235

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 89.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13500			P
7440-36-0	Antimony	6.7	<i>J</i>	<i>N U J</i>	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	115			P
7440-41-7	Beryllium	0.41	<i>J</i>	<i>E</i>	P
7440-43-9	Cadmium	16.1			P
7440-70-2	Calcium	44700		<i>* J</i>	P
7440-47-3	Chromium	13.9			P
7440-48-4	Cobalt	5.5	<i>J</i>	<i>E</i>	P
7440-50-8	Copper	35.5			P
7439-89-6	Iron	14900			P
7439-92-1	Lead	450		<i>E J</i>	P
7439-95-4	Magnesium	21200		<i>*</i>	P
7439-96-5	Manganese	364			P
7440-02-0	Nickel	15.8			P
7440-09-7	Potassium	1450		<i>E J</i>	P
7782-49-2	Selenium	3.9	U		P
7440-22-4	Silver	0.19	<i>J</i>	<i>u</i>	P
7440-23-5	Sodium	559	U		P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	28.4			P
7440-66-6	Zinc	4350		D	P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AD9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67236

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 88.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15300			P
7440-36-0	Antimony	6.8	#	N U J	P
7440-38-2	Arsenic	2.3		U	P
7440-39-3	Barium	115			P
7440-41-7	Beryllium	0.44	J	#	P
7440-43-9	Cadmium	5.2			P
7440-70-2	Calcium	16000		* J	P
7440-47-3	Chromium	14.4			P
7440-48-4	Cobalt	6.6		#	P
7440-50-8	Copper	26.8			P
7439-89-6	Iron	16300			P
7439-92-1	Lead	198		# J	P
7439-95-4	Magnesium	9980		*	P
7439-96-5	Manganese	362			P
7440-02-0	Nickel	15.7			P
7440-09-7	Potassium	1340		# J	P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	63.1	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	30.4			P
7440-66-6	Zinc	1340			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67237

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 86.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15900			P
7440-36-0	Antimony	6.9	U	N U J	P
7440-38-2	Arsenic	1.7		U	P
7440-39-3	Barium	170			P
7440-41-7	Beryllium	0.49	U J	E	P
7440-43-9	Cadmium	0.88			P
7440-70-2	Calcium	8540		* J	P
7440-47-3	Chromium	16.6			P
7440-48-4	Cobalt	6.9		E	P
7440-50-8	Copper	22.7			P
7439-89-6	Iron	17300			P
7439-92-1	Lead	35.7		E J	P
7439-95-4	Magnesium	4060		*	P
7439-96-5	Manganese	526			P
7440-02-0	Nickel	17.4			P
7440-09-7	Potassium	1580		E J	P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	214	J	U	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	29.2			P
7440-66-6	Zinc	147			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AB4

Matrix (soil/water): SOIL Lab Sample ID: BT67238

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16900			P
7440-36-0	Antimony	6.8	8	N U J	P
7440-38-2	Arsenic	1.9		U	P
7440-39-3	Barium	156			P
7440-41-7	Beryllium	0.50	J	E	P
7440-43-9	Cadmium	0.91			P
7440-70-2	Calcium	7940		* J	P
7440-47-3	Chromium	16.9			P
7440-48-4	Cobalt	7.6		E	P
7440-50-8	Copper	26.8			P
7439-89-6	Iron	17900			P
7439-92-1	Lead	24.3		E J	P
7439-95-4	Magnesium	4660		*	P
7439-96-5	Manganese	529			P
7440-02-0	Nickel	18.4			P
7440-09-7	Potassium	1750		E J	P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	253	8	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	33.4			P
7440-66-6	Zinc	112			P

DM
9-20-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 24, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8AC1, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8AC1	MJ8AC2	MJ8AC3	MJ8AC4	MJ8AC5	MJ8AC6	MJ8AE4
MJ8AE5	MJ8AE6	MJ8AE7	MJ8AE8	MJ8AE9	MJ8AF0	MJ8AF1
MJ8AF2	MJ8AF3	MJ8AF4	MJ8AF5	MJ8AF6	MJ8AK2	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/16/07 and 8/18/07. ICP-AES analysis was conducted on 8/24/07 and 8/25/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (90-105%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries for the LCS were within the established control limits for solid samples.

BLANKS - Acceptable

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results.

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8AC5. Percent recoveries (76-95%) met the criterion (75-125%) for all elements with the exception of antimony (24%) and silver (56%). Antimony data were qualified (R). Silver data were qualified (UJ) and may be biased low.

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample was analyzed for sample MJ8AC5. Relative percent differences ($\leq 9\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$).

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8AC5. Percent differences ($\leq 11\%$) were within the 1% allowable range of the acceptance criterion ($\leq 10\%$) with the exception of chromium (15%) and copper (13%). Affected sample data were qualified (J). Chromium and copper data may be biased low.

ASSESSMENT SUMMARY

The following is a summary of qualified data:

Antimony data were qualified (R) and silver data were qualified (UJ) due to low matrix spike recoveries. Antimony and silver data may be biased low.

Chromium and copper data were qualified (J) due to high percent differences in the serial dilution analysis. Values for these elements may be biased low.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67279

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15600			P
7440-36-0	Antimony	6.4	U	# R	P
7440-38-2	Arsenic	3.1			P
7440-39-3	Barium	104			P
7440-41-7	Beryllium	0.49	J	#	P
7440-43-9	Cadmium	0.81		#	P
7440-70-2	Calcium	3910			P
7440-47-3	Chromium	18.3		# J	P
7440-48-4	Cobalt	7.8		#	P
7440-50-8	Copper	26.0		# J	P
7439-89-6	Iron	19000			P
7439-92-1	Lead	18.4		#	P
7439-95-4	Magnesium	5390			P
7439-96-5	Manganese	356			P
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1650			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U	# UJ	P
7440-23-5	Sodium	108	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	37.7			P
7440-66-6	Zinc	90.6			P

21
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC2

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AC1Matrix (soil/water): SOILLab Sample ID: BT67280Level (low/med): LOWDate Received: 08/22/2007Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12500			P
7440-36-0	Antimony	6.3	#	* R	P
7440-38-2	Arsenic	3.3			P
7440-39-3	Barium	81.0			P
7440-41-7	Beryllium	0.40	J	#	P
7440-43-9	Cadmium	0.67		#	P
7440-70-2	Calcium	3110			P
7440-47-3	Chromium	18.4		# J	P
7440-48-4	Cobalt	7.8		#	P
7440-50-8	Copper	24.0		# J	P
7439-89-6	Iron	18100			P
7439-92-1	Lead	14.1		#	P
7439-95-4	Magnesium	5600			P
7439-96-5	Manganese	367			P
7440-02-0	Nickel	20.5			P
7440-09-7	Potassium	1670			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	#	* u J	P
7440-23-5	Sodium	78.4	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	38.1			P
7440-66-6	Zinc	72.5			P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67281

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14600			P
7440-36-0	Antimony	6.2	#	# R	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	154			P
7440-41-7	Beryllium	0.47	J	#	P
7440-43-9	Cadmium	1.6		#	P
7440-70-2	Calcium	30500			P
7440-47-3	Chromium	17.9		# J	P
7440-48-4	Cobalt	8.1		#	P
7440-50-8	Copper	22.9		# J	P
7439-89-6	Iron	18000			P
7439-92-1	Lead	218		#	P
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	692			P
7440-02-0	Nickel	20.4			P
7440-09-7	Potassium	2030			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	#	# U J	P
7440-23-5	Sodium	93.2	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.8			P
7440-66-6	Zinc	356			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC4

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8AC1Matrix (soil/water): SOILLab Sample ID: BT67282Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	6.2	✓	* R	P
7440-38-2	Arsenic	2.5			P
7440-39-3	Barium	256			P
7440-41-7	Beryllium	0.54		E	P
7440-43-9	Cadmium	1.1		E	P
7440-70-2	Calcium	17200			P
7440-47-3	Chromium	17.6		E J	P
7440-48-4	Cobalt	8.8		E	P
7440-50-8	Copper	23.3		E J	P
7439-89-6	Iron	20200			P
7439-92-1	Lead	55.9		E	P
7439-95-4	Magnesium	8410			P
7439-96-5	Manganese	1720			P
7440-02-0	Nickel	20.1			P
7440-09-7	Potassium	2600			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	✓	* U J	P
7440-23-5	Sodium	202	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.0			P
7440-66-6	Zinc	165			P

DM
9-24-07

Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YES

Comments:

PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67283

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 91.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23900			P
7440-36-0	Antimony	6.6	✓	* R	P
7440-38-2	Arsenic	0.88	J		P
7440-39-3	Barium	176			P
7440-41-7	Beryllium	0.69		✓	P
7440-43-9	Cadmium	0.90		✓	P
7440-70-2	Calcium	6420			P
7440-47-3	Chromium	16.6		✓ J	P
7440-48-4	Cobalt	7.4		✓	P
7440-50-8	Copper	20.1		✓ J	P
7439-89-6	Iron	21500			P
7439-92-1	Lead	21.4		✓	P
7439-95-4	Magnesium	4390			P
7439-96-5	Manganese	536			P
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1480			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	1.1	✓	* U J	P
7440-23-5	Sodium	171	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.3			P
7440-66-6	Zinc	124			P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AC6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67284

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23000			P
7440-36-0	Antimony	6.3	U	N R	P
7440-38-2	Arsenic	1.8			P
7440-39-3	Barium	205			P
7440-41-7	Beryllium	0.66		E	P
7440-43-9	Cadmium	0.84		E	P
7440-70-2	Calcium	2760			P
7440-47-3	Chromium	17.0		H J	P
7440-48-4	Cobalt	8.4		E	P
7440-50-8	Copper	25.4		H J	P
7439-89-6	Iron	22200			P
7439-92-1	Lead	16.0		E	P
7439-95-4	Magnesium	5080			P
7439-96-5	Manganese	354			P
7440-02-0	Nickel	20.4			P
7440-09-7	Potassium	1430			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U	N U J	P
7440-23-5	Sodium	156	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.1			P
7440-66-6	Zinc	78.4			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1
 Matrix (soil/water): SOIL Lab Sample ID: BT67285
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17100			P
7440-36-0	Antimony	6.3	<i>U</i>	<i>NR</i>	P
7440-38-2	Arsenic	4.6			P
7440-39-3	Barium	195			P
7440-41-7	Beryllium	0.58		<i>E</i>	P
7440-43-9	Cadmium	1.3		<i>E</i>	P
7440-70-2	Calcium	25500			P
7440-47-3	Chromium	17.4		<i>E J</i>	P
7440-48-4	Cobalt	7.4		<i>E</i>	P
7440-50-8	Copper	21.7		<i>E J</i>	P
7439-89-6	Iron	17700			P
7439-92-1	Lead	107		<i>E</i>	P
7439-95-4	Magnesium	6340			P
7439-96-5	Manganese	694			P
7440-02-0	Nickel	20.4			P
7440-09-7	Potassium	2230			P
7782-49-2	Selenium	1.0	<i>J</i>		P
7440-22-4	Silver	1.0	<i>U</i>	<i>NUJ</i>	P
7440-23-5	Sodium	215	<i>J</i>		P
7440-28-0	Thallium	2.6	<i>U</i>		P
7440-62-2	Vanadium	31.9			P
7440-66-6	Zinc	294			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE5

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AC1Matrix (soil/water): SOILLab Sample ID: BT67286Level (low/med): LOWDate Received: 08/22/2007% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21800			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	221			P
7440-41-7	Beryllium	0.66		#	P
7440-43-9	Cadmium	1.0		#	P
7440-70-2	Calcium	12000			P
7440-47-3	Chromium	19.0		# J	P
7440-48-4	Cobalt	8.8		#	P
7440-50-8	Copper	24.9		# J	P
7439-89-6	Iron	20100			P
7439-92-1	Lead	34.9		#	P
7439-95-4	Magnesium	5210			P
7439-96-5	Manganese	995			P
7440-02-0	Nickel	20.5			P
7440-09-7	Potassium	1660			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	#	# U J	P
7440-23-5	Sodium	238	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	34.4			P
7440-66-6	Zinc	135			P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1
 Matrix (soil/water): SOIL Lab Sample ID: BT67287
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16800			P
7440-36-0	Antimony	6.2	✓	N R	P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	165			P
7440-41-7	Beryllium	0.51	J	E	P
7440-43-9	Cadmium	0.67		E	P
7440-70-2	Calcium	3590			P
7440-47-3	Chromium	17.2		E J	P
7440-48-4	Cobalt	7.8		E	P
7440-50-8	Copper	22.2		E J	P
7439-89-6	Iron	18300			P
7439-92-1	Lead	14.9		E	P
7439-95-4	Magnesium	4610			P
7439-96-5	Manganese	477			P
7440-02-0	Nickel	17.2			P
7440-09-7	Potassium	1320			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	✓	N U J	P
7440-23-5	Sodium	219	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.9			P
7440-66-6	Zinc	71.2			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67288

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800			P
7440-36-0	Antimony	6.2	✓	✓ R	P
7440-38-2	Arsenic	2.9			P
7440-39-3	Barium	134			P
7440-41-7	Beryllium	0.47	J	✓	P
7440-43-9	Cadmium	0.63		✓	P
7440-70-2	Calcium	4060			P
7440-47-3	Chromium	18.9		✓ J	P
7440-48-4	Cobalt	7.7		✓	P
7440-50-8	Copper	22.2		✓ J	P
7439-89-6	Iron	17700			P
7439-92-1	Lead	14.9		✓	P
7439-95-4	Magnesium	4790			P
7439-96-5	Manganese	383			P
7440-02-0	Nickel	17.6			P
7440-09-7	Potassium	1550			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	✓	✓ U J	P
7440-23-5	Sodium	222	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.9			P
7440-66-6	Zinc	71.6			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE8

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67289

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16200			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	149			P
7440-41-7	Beryllium	0.49	J	#	P
7440-43-9	Cadmium	0.62		#	P
7440-70-2	Calcium	3540			P
7440-47-3	Chromium	17.5		# J	P
7440-48-4	Cobalt	7.4		#	P
7440-50-8	Copper	22.1		# J	P
7439-89-6	Iron	17800			P
7439-92-1	Lead	14.2		#	P
7439-95-4	Magnesium	4540			P
7439-96-5	Manganese	348			P
7440-02-0	Nickel	17.5			P
7440-09-7	Potassium	1410			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	#	# U J	P
7440-23-5	Sodium	186	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	71.0			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67290

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18800			P
7440-36-0	Antimony	6.4	✓	✓ R	P
7440-38-2	Arsenic	5.1			P
7440-39-3	Barium	250			P
7440-41-7	Beryllium	0.61		✓	P
7440-43-9	Cadmium	1.9		✓	P
7440-70-2	Calcium	51000			P
7440-47-3	Chromium	19.0		✓ J	P
7440-48-4	Cobalt	8.6		✓	P
7440-50-8	Copper	23.1		✓ J	P
7439-89-6	Iron	20300			P
7439-92-1	Lead	251		✓	P
7439-95-4	Magnesium	11200			P
7439-96-5	Manganese	1010			P
7440-02-0	Nickel	23.9			P
7440-09-7	Potassium	2690			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	✓	✓ UJ	P
7440-23-5	Sodium	228	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.3			P
7440-66-6	Zinc	440			P

2nd
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67291

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18900			P
7440-36-0	Antimony	6.4	✓	N R	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	237			P
7440-41-7	Beryllium	0.57		✓	P
7440-43-9	Cadmium	0.98		✓	P
7440-70-2	Calcium	12700			P
7440-47-3	Chromium	16.7		✓ J	P
7440-48-4	Cobalt	7.6		✓	P
7440-50-8	Copper	18.2		✓ J	P
7439-89-6	Iron	19800			P
7439-92-1	Lead	70.0		✓	P
7439-95-4	Magnesium	4640			P
7439-96-5	Manganese	1000			P
7440-02-0	Nickel	20.1			P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	✓	N UJ	P
7440-23-5	Sodium	227	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.3			P
7440-66-6	Zinc	178			P

Dr
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF1

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AC1Matrix (soil/water): SOILLab Sample ID: BT67292Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19400			P
7440-36-0	Antimony	6.3	U	N R	P
7440-38-2	Arsenic	2.2			P
7440-39-3	Barium	143			P
7440-41-7	Beryllium	0.55		E	P
7440-43-9	Cadmium	0.75		E	P
7440-70-2	Calcium	4160			P
7440-47-3	Chromium	16.4		E J	P
7440-48-4	Cobalt	8.1		E	P
7440-50-8	Copper	26.4		E J	P
7439-89-6	Iron	20300			P
7439-92-1	Lead	20.9		E	P
7439-95-4	Magnesium	4900			P
7439-96-5	Manganese	331			P
7440-02-0	Nickel	20.8			P
7440-09-7	Potassium	1330			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U	N U J	P
7440-23-5	Sodium	245	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.5			P
7440-66-6	Zinc	82.5			P

Dr
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF2

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67293

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20800			P
7440-36-0	Antimony	6.4	✓	* R	P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	173			P
7440-41-7	Beryllium	0.59		✓	P
7440-43-9	Cadmium	0.89		✓	P
7440-70-2	Calcium	5090			P
7440-47-3	Chromium	20.6		✓ J	P
7440-48-4	Cobalt	8.9		✓	P
7440-50-8	Copper	28.6		✓ J	P
7439-89-6	Iron	23200			P
7439-92-1	Lead	28.7		✓	P
7439-95-4	Magnesium	5730			P
7439-96-5	Manganese	425			P
7440-02-0	Nickel	24.0			P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	✓	* U J	P
7440-23-5	Sodium	266	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	34.1			P
7440-66-6	Zinc	101			P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67294

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20900			P
7440-36-0	Antimony	6.4	U	N R	P
7440-38-2	Arsenic	1.8			P
7440-39-3	Barium	217			P
7440-41-7	Beryllium	0.64		E	P
7440-43-9	Cadmium	1.0		E	P
7440-70-2	Calcium	15300			P
7440-47-3	Chromium	16.5		E J	P
7440-48-4	Cobalt	7.7		E	P
7440-50-8	Copper	19.3		E J	P
7439-89-6	Iron	20900			P
7439-92-1	Lead	37.3		E	P
7439-95-4	Magnesium	5000			P
7439-96-5	Manganese	1100			P
7440-02-0	Nickel	20.1			P
7440-09-7	Potassium	1760			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U	N UJ	P
7440-23-5	Sodium	229	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.0			P
7440-66-6	Zinc	182			P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67295

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23200			P
7440-36-0	Antimony	6.3	U	R	P
7440-38-2	Arsenic	0.63	J		P
7440-39-3	Barium	199			P
7440-41-7	Beryllium	0.68		E	P
7440-43-9	Cadmium	1.0		E	P
7440-70-2	Calcium	7770			P
7440-47-3	Chromium	17.2		E J	P
7440-48-4	Cobalt	7.8		E	P
7440-50-8	Copper	24.1		E J	P
7439-89-6	Iron	21500			P
7439-92-1	Lead	22.5		E	P
7439-95-4	Magnesium	4930			P
7439-96-5	Manganese	743			P
7440-02-0	Nickel	21.3			P
7440-09-7	Potassium	1440			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	U	E UJ	P
7440-23-5	Sodium	264	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.7			P
7440-66-6	Zinc	124			P

2m
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67296

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19900			P
7440-36-0	Antimony	6.3	U	* R	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	156			P
7440-41-7	Beryllium	0.59		E	P
7440-43-9	Cadmium	0.77		E	P
7440-70-2	Calcium	3890			P
7440-47-3	Chromium	16.7		E J	P
7440-48-4	Cobalt	8.1		E	P
7440-50-8	Copper	25.5		E J	P
7439-89-6	Iron	20100			P
7439-92-1	Lead	16.9		E	P
7439-95-4	Magnesium	4770			P
7439-96-5	Manganese	360			P
7440-02-0	Nickel	19.5			P
7440-09-7	Potassium	1340			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U	* UJ	P
7440-23-5	Sodium	240	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	84.4			P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67297

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 96.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18500			P
7440-36-0	Antimony	6.2	✓	* R	P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	143			P
7440-41-7	Beryllium	0.59		✓	P
7440-43-9	Cadmium	0.81		✓	P
7440-70-2	Calcium	7570			P
7440-47-3	Chromium	20.2		✓ J	P
7440-48-4	Cobalt	9.1		✓	P
7440-50-8	Copper	25.0		✓ J	P
7439-89-6	Iron	23600			P
7439-92-1	Lead	22.6		✓	P
7439-95-4	Magnesium	5350			P
7439-96-5	Manganese	472			P
7440-02-0	Nickel	24.9			P
7440-09-7	Potassium	1690			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	✓	* UJ	P
7440-23-5	Sodium	214	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	106			P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AK2

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AC1

Matrix (soil/water): SOIL Lab Sample ID: BT67298

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21900			P
7440-36-0	Antimony	6.3	✓	N R	P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	174			P
7440-41-7	Beryllium	0.62		✓	P
7440-43-9	Cadmium	0.93		✓	P
7440-70-2	Calcium	5980			P
7440-47-3	Chromium	20.8		✓ J	P
7440-48-4	Cobalt	9.0		✓	P
7440-50-8	Copper	29.6		✓ J	P
7439-89-6	Iron	24000			P
7439-92-1	Lead	26.4		✓	P
7439-95-4	Magnesium	5950			P
7439-96-5	Manganese	446			P
7440-02-0	Nickel	24.6			P
7440-09-7	Potassium	1760			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	✓	N UJ	P
7440-23-5	Sodium	254	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	36.0			P
7440-66-6	Zinc	103			P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 24, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8AE2, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Twenty (20) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8AE2	MJ8AE3	MJ8AF7	MJ8AF8	MJ8AF9	MJ8AG0	MJ8AG1
MJ8AG2	MJ8AG3	MJ8AG4	MJ8AG5	MJ8AG6	MJ8AG7	MJ8AG8
MJ8AG9	MJ8AH0	MJ8AH1	MJ8AH2	MJ8AH3	MJ8AH4	

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). Samples were collected on 8/16/07 and 8/18/07. ICP-AES analysis was conducted on 8/25/07 and 8/28/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-104%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries for the LCS were within the established control limits for solid samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of sodium. Affected samples were qualified (U) for sodium.

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8AE2. Percent recoveries (76-95%) met the criterion (75-125%) for all elements with the exception of antimony (24%) and manganese (266%). Antimony data were qualified (R). Manganese data were qualified (J) and may be biased high.

DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample was analyzed for sample MJ8AE2. Relative percent differences ($\leq 33\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$).

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8AE2. Percent differences ($\leq 9\%$) were within the criterion ($\leq 10\%$) with the exception of beryllium (21%), chromium (14%), cobalt (17%), copper (13%), nickel (13%) and zinc (13%). Affected sample data were qualified (J). Values for these elements may be biased low.

ASSESSMENT SUMMARY

The following is a summary of qualified data:

Sodium data were qualified (U) due to the detected presence of this element in the preparation blank.

Antimony data were qualified (R) due to a low matrix spike recovery. Antimony values may be biased low.

Manganese data were qualified (J) due to a high matrix spike recovery. Manganese values may be biased high.

Beryllium, chromium, cobalt, copper, nickel and zinc data were qualified (J) due to high percent differences in the serial dilution analysis. Values for these elements may be biased low.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE2

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AE2
 Matrix (soil/water): SOIL Lab Sample ID: BT67239
 Level (low/med): LOW Date Received: 08/22/2007
 Solids: 87.4
 Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14400			P
7440-36-0	Antimony	6.9	H	* R	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	141			P
7440-41-7	Beryllium	0.44	J	E J	P
7440-43-9	Cadmium	0.73			P
7440-70-2	Calcium	3910		*	P
7440-47-3	Chromium	14.8		E J	P
7440-48-4	Cobalt	6.6		E	P
7440-50-8	Copper	22.0		E	P
7439-89-6	Iron	15500			P
7439-92-1	Lead	17.5			P
7439-95-4	Magnesium	4030			P
7439-96-5	Manganese	337		* J	P
7440-02-0	Nickel	16.1		E J	P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	270	J	u	P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	27.2			P
7440-66-6	Zinc	86.6		E J	P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM
 Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AE3

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNERCase No.: 36728

NRAS No.: _____

SDG NO.: MJ8AE2Matrix (soil/water): SOILLab Sample ID: BT67240Level (low/med): LOWDate Received: 08/22/2007Solids: 88.5

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700			P
7440-36-0	Antimony	6.8	H	H R	P
7440-38-2	Arsenic	3.5			P
7440-39-3	Barium	119			P
7440-41-7	Beryllium	0.35	J	E J	P
7440-43-9	Cadmium	0.62			P
7440-70-2	Calcium	3120			P
7440-47-3	Chromium	12.6		E J	P
7440-48-4	Cobalt	5.8		E	P
7440-50-8	Copper	17.9		E	P
7439-89-6	Iron	13100			P
7439-92-1	Lead	16.2			P
7439-95-4	Magnesium	3500			P
7439-96-5	Manganese	316		H J	P
7440-02-0	Nickel	13.7		E J	P
7440-09-7	Potassium	1110			P
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	262	J	U	P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	24.4			P
7440-66-6	Zinc	73.9		E J	P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67241

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12200			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	6.0			P
7440-39-3	Barium	129			P
7440-41-7	Beryllium	0.41	#	# J	P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	24000		*	P
7440-47-3	Chromium	17.1		# J	P
7440-48-4	Cobalt	7.2		#	P
7440-50-8	Copper	23.6		#	P
7439-89-6	Iron	16500			P
7439-92-1	Lead	55.7			P
7439-95-4	Magnesium	9350			P
7439-96-5	Manganese	507		# J	P
7440-02-0	Nickel	18.1		# J	P
7440-09-7	Potassium	1710			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	66.0	#	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.3			P
7440-66-6	Zinc	263		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF8

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AE2Matrix (soil/water): SOILLab Sample ID: BT67242Level (low/med): LOWDate Received: 08/22/2007% Solids: 94.6Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16900			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	7.9			P
7440-39-3	Barium	173			P
7440-41-7	Beryllium	0.53		# J	P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	24200		+	P
7440-47-3	Chromium	18.9		# J	P
7440-48-4	Cobalt	7.6		#	P
7440-50-8	Copper	26.8		#	P
7439-89-6	Iron	19000			P
7439-92-1	Lead	57.3			P
7439-95-4	Magnesium	5840			P
7439-96-5	Manganese	510		# J	P
7440-02-0	Nickel	19.7		# J	P
7440-09-7	Potassium	2200			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	264	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.4			P
7440-66-6	Zinc	169		# J	P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AF9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67243

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17400			P
7440-36-0	Antimony	6.4	#	* R	P
7440-38-2	Arsenic	6.6			P
7440-39-3	Barium	145			P
7440-41-7	Beryllium	0.50	#	# J	P
7440-43-9	Cadmium	0.84			P
7440-70-2	Calcium	7020		*	P
7440-47-3	Chromium	14.4		# J	P
7440-48-4	Cobalt	6.9		#	P
7440-50-8	Copper	20.3		#	P
7439-89-6	Iron	20100			P
7439-92-1	Lead	41.5			P
7439-95-4	Magnesium	4720			P
7439-96-5	Manganese	633		* J	P
7440-02-0	Nickel	17.4		# J	P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	233	#	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	27.2			P
7440-66-6	Zinc	90.2		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG0

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67244

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20100			P
7440-36-0	Antimony	6.3	U	N 2	P
7440-38-2	Arsenic	5.6			P
7440-39-3	Barium	169			P
7440-41-7	Beryllium	0.57		E J	P
7440-43-9	Cadmium	0.87			P
7440-70-2	Calcium	4250		*	P
7440-47-3	Chromium	18.1		E J	P
7440-48-4	Cobalt	8.2		E	P
7440-50-8	Copper	29.0		E	P
7439-89-6	Iron	20700			P
7439-92-1	Lead	32.0			P
7439-95-4	Magnesium	5480			P
7439-96-5	Manganese	387		N J	P
7440-02-0	Nickel	21.4		E J	P
7440-09-7	Potassium	1440			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	262	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.3			P
7440-66-6	Zinc	95.1		E J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67245

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14700			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	6.1			P
7440-39-3	Barium	157			P
7440-41-7	Beryllium	0.47	J	# J	P
7440-43-9	Cadmium	0.87			P
7440-70-2	Calcium	28100		*	P
7440-47-3	Chromium	18.3		# J	P
7440-48-4	Cobalt	7.4		#	P
7440-50-8	Copper	24.6		#	P
7439-89-6	Iron	17200			P
7439-92-1	Lead	46.4			P
7439-95-4	Magnesium	6330			P
7439-96-5	Manganese	533		# J	P
7440-02-0	Nickel	19.5		# J	P
7440-09-7	Potassium	2140			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	165	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.9			P
7440-66-6	Zinc	141		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG2

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67246

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18300			P
7440-36-0	Antimony	6.5	#	# R	P
7440-38-2	Arsenic	10.0			P
7440-39-3	Barium	222			P
7440-41-7	Beryllium	0.59		# J	P
7440-43-9	Cadmium	5.4			P
7440-70-2	Calcium	33500		*	P
7440-47-3	Chromium	18.7		# J	P
7440-48-4	Cobalt	7.6		#	P
7440-50-8	Copper	25.5		#	P
7439-89-6	Iron	22100			P
7439-92-1	Lead	229			P
7439-95-4	Magnesium	6950			P
7439-96-5	Manganese	867		# J	P
7440-02-0	Nickel	22.9		# J	P
7440-09-7	Potassium	2260			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	538	U		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.6			P
7440-66-6	Zinc	1500		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67247

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 93.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20100			P
7440-36-0	Antimony	6.4	#	# R	P
7440-38-2	Arsenic	7.1			P
7440-39-3	Barium	214			P
7440-41-7	Beryllium	0.59		# J	P
7440-43-9	Cadmium	1.1			P
7440-70-2	Calcium	14600		#	P
7440-47-3	Chromium	14.8		# J	P
7440-48-4	Cobalt	7.9		#	P
7440-50-8	Copper	21.6		#	P
7439-89-6	Iron	18800			P
7439-92-1	Lead	57.2			P
7439-95-4	Magnesium	4810			P
7439-96-5	Manganese	1320		# J	P
7440-02-0	Nickel	18.9		# J	P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	0.45	J		P
7440-23-5	Sodium	187	J	u	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	28.4			P
7440-66-6	Zinc	166		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG4

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67248

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 94.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19400			P
7440-36-0	Antimony	6.3	U	N R	P
7440-38-2	Arsenic	6.1			P
7440-39-3	Barium	164			P
7440-41-7	Beryllium	0.56		E J	P
7440-43-9	Cadmium	1.5			P
7440-70-2	Calcium	14300			P
7440-47-3	Chromium	17.3		E J	P
7440-48-4	Cobalt	7.9		E	P
7440-50-8	Copper	25.5		E	P
7439-89-6	Iron	20300			P
7439-92-1	Lead	66.0			P
7439-95-4	Magnesium	6420			P
7439-96-5	Manganese	478		N J	P
7440-02-0	Nickel	22.2		E J	P
7440-09-7	Potassium	1560			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	0.18	J		P
7440-23-5	Sodium	227	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	30.3			P
7440-66-6	Zinc	238		E J	P

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG5

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2
 Matrix (soil/water): SOIL Lab Sample ID: BT67249
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 92.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18100			P
7440-36-0	Antimony	6.5	B	B R	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	148			P
7440-41-7	Beryllium	0.53	B	B J	P
7440-43-9	Cadmium	0.71			P
7440-70-2	Calcium	6910		B	P
7440-47-3	Chromium	14.6		B J	P
7440-48-4	Cobalt	6.9		B ↓	P
7440-50-8	Copper	19.9		B ↓	P
7439-89-6	Iron	18400			P
7439-92-1	Lead	25.6			P
7439-95-4	Magnesium	4530			P
7439-96-5	Manganese	410		B J	P
7440-02-0	Nickel	17.3		B J	P
7440-09-7	Potassium	1780			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	230	B	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	25.2			P
7440-66-6	Zinc	86.7		B J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG6

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67250

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16100			P
7440-36-0	Antimony	6.3	#	# R	P
7440-38-2	Arsenic	6.0			P
7440-39-3	Barium	189			P
7440-41-7	Beryllium	0.50	J	# J	P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	25300		#	P
7440-47-3	Chromium	17.4		# J	P
7440-48-4	Cobalt	7.2		#	P
7440-50-8	Copper	24.3		#	P
7439-89-6	Iron	17500			P
7439-92-1	Lead	97.9			P
7439-95-4	Magnesium	6430			P
7439-96-5	Manganese	674		# J	P
7440-02-0	Nickel	19.2		# J	P
7440-09-7	Potassium	2290			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	203	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.4			P
7440-66-6	Zinc	237		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG7

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67251

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17600			P
7440-36-0	Antimony	6.3	#	* R	P
7440-38-2	Arsenic	6.5			P
7440-39-3	Barium	201			P
7440-41-7	Beryllium	0.55		# J	P
7440-43-9	Cadmium	0.91			P
7440-70-2	Calcium	19200		*	P
7440-47-3	Chromium	16.9		# J	P
7440-48-4	Cobalt	7.4		#	P
7440-50-8	Copper	23.8		#	P
7439-89-6	Iron	18000			P
7439-92-1	Lead	47.2			P
7439-95-4	Magnesium	5970			P
7439-96-5	Manganese	774		* J	P
7440-02-0	Nickel	18.5		# J	P
7440-09-7	Potassium	2350			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	304	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	33.4			P
7440-66-6	Zinc	155		# J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG8

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AE2Matrix (soil/water): SOILLab Sample ID: BT67252Level (low/med): LOWDate Received: 08/22/2007Solids: 91.7Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20100			P
7440-36-0	Antimony	6.5	U	NR	P
7440-38-2	Arsenic	6.4			P
7440-39-3	Barium	327			P
7440-41-7	Beryllium	0.65		E J	P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	25500		*	P
7440-47-3	Chromium	15.5		E J	P
7440-48-4	Cobalt	7.6		E	P
7440-50-8	Copper	19.6		E	P
7439-89-6	Iron	19700			P
7439-92-1	Lead	45.8			P
7439-95-4	Magnesium	5070			P
7439-96-5	Manganese	1680		NR J	P
7440-02-0	Nickel	16.8		E J	P
7440-09-7	Potassium	2430			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	0.20	J		P
7440-23-5	Sodium	262	U	U	P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	30.6			P
7440-66-6	Zinc	147		E J	P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AG9

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2Matrix (soil/water): SOIL Lab Sample ID: BT67253Level (low/med): LOW Date Received: 08/22/2007% Solids: 93.2Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19900			P
7440-36-0	Antimony	6.4	#	# R	P
7440-38-2	Arsenic	7.1			P
7440-39-3	Barium	220			P
7440-41-7	Beryllium	0.59		# J	P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	17200		#	P
7440-47-3	Chromium	17.0		# J	P
7440-48-4	Cobalt	7.9		#	P
7440-50-8	Copper	25.9		#	P
7439-89-6	Iron	21400			P
7439-92-1	Lead	45.5			P
7439-95-4	Magnesium	5560			P
7439-96-5	Manganese	727		# J	P
7440-02-0	Nickel	21.6		# J	P
7440-09-7	Potassium	2020			P
7782-49-2	Selenium	3.8	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	312	J		P
7440-28-0	Thallium	2.7	U		P
7440-62-2	Vanadium	31.5			P
7440-66-6	Zinc	129		# J	P

DM
9-24-07Color Before: BROWN Clarity Before: _____ Texture: MEDIUMColor After: YELLOW Clarity After: _____ Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH0

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNERCase No.: 36728

NRAS No.: _____

SDG NO.: MJ8AE2Matrix (soil/water): SOILLab Sample ID: BT67254Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.2

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19600			P
7440-36-0	Antimony	6.2	U	* R	P
7440-38-2	Arsenic	7.5			P
7440-39-3	Barium	230			P
7440-41-7	Beryllium	0.60		E J	P
7440-43-9	Cadmium	1.1			P
7440-70-2	Calcium	25000		*	P
7440-47-3	Chromium	19.2		E J	P
7440-48-4	Cobalt	8.1		E	P
7440-50-8	Copper	26.1		E	P
7439-89-6	Iron	20400			P
7439-92-1	Lead	49.6			P
7439-95-4	Magnesium	7910			P
7439-96-5	Manganese	956		* J	P
7440-02-0	Nickel	20.5		E J	P
7440-09-7	Potassium	2610			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	337	J		P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	40.7			P
7440-66-6	Zinc	162		E J	P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH1

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2Matrix (soil/water): SOIL Lab Sample ID: BT67255Level (low/med): LOW Date Received: 08/22/2007% Solids: 96.6Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16400			P
7440-36-0	Antimony	6.2	U	# R	P
7440-38-2	Arsenic	6.4			P
7440-39-3	Barium	152			P
7440-41-7	Beryllium	0.51	J	# J	P
7440-43-9	Cadmium	0.87			P
7440-70-2	Calcium	18200		*	P
7440-47-3	Chromium	15.9		# J	P
7440-48-4	Cobalt	6.8		# 1	P
7440-50-8	Copper	21.8		# 1	P
7439-89-6	Iron	16800			P
7439-92-1	Lead	43.0			P
7439-95-4	Magnesium	7180			P
7439-96-5	Manganese	482		# J	P
7440-02-0	Nickel	17.7		# J	P
7440-09-7	Potassium	1490			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	186	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	28.0			P
7440-66-6	Zinc	141		# J	P

DM
9-24-07Color Before: BROWN Clarity Before: _____ Texture: MEDIUMColor After: YELLOW Clarity After: _____ Artifacts: YESComments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH2

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2

Matrix (soil/water): SOIL Lab Sample ID: BT67256

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 95.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20100			P
7440-36-0	Antimony	6.3	U	N R	P
7440-38-2	Arsenic	5.4			P
7440-39-3	Barium	181			P
7440-41-7	Beryllium	0.59		E J	P
7440-43-9	Cadmium	0.85			P
7440-70-2	Calcium	7380		*	P
7440-47-3	Chromium	17.3		E J	P
7440-48-4	Cobalt	7.7		E	P
7440-50-8	Copper	24.4		E	P
7439-89-6	Iron	19600			P
7439-92-1	Lead	23.7			P
7439-95-4	Magnesium	5760			P
7439-96-5	Manganese	408		N J	P
7440-02-0	Nickel	18.8		E J	P
7440-09-7	Potassium	1300			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	118	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	32.3			P
7440-66-6	Zinc	97.1		E J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AE2
 Matrix (soil/water): SOIL Lab Sample ID: BT67257
 Level (low/med): LOW Date Received: 08/22/2007
 % Solids: 95.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14800			P
7440-36-0	Antimony	6.3	H	N R	P
7440-38-2	Arsenic	4.7			P
7440-39-3	Barium	156			P
7440-41-7	Beryllium	0.44	J	E J	P
7440-43-9	Cadmium	0.65			P
7440-70-2	Calcium	4550		*	P
7440-47-3	Chromium	17.9		E J	P
7440-48-4	Cobalt	7.6		E	P
7440-50-8	Copper	21.2		E	P
7439-89-6	Iron	18100			P
7439-92-1	Lead	14.5			P
7439-95-4	Magnesium	5570			P
7439-96-5	Manganese	346		N* J	P
7440-02-0	Nickel	17.5		E J	P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	3.7	U		P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	54.8	J	U	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	29.4			P
7440-66-6	Zinc	65.9		E J	P

DM
9-24-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AH4

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AE2Matrix (soil/water): SOILLab Sample ID: BT67258Level (low/med): LOWDate Received: 08/22/2007% Solids: 96.0Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800			P
7440-36-0	Antimony	6.2	U	N R	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	90.4			P
7440-41-7	Beryllium	0.39	J	E J	P
7440-43-9	Cadmium	0.56			P
7440-70-2	Calcium	3620		*	P
7440-47-3	Chromium	18.6		E J	P
7440-48-4	Cobalt	7.5		E	P
7440-50-8	Copper	17.9		E ↓	P
7439-89-6	Iron	17700			P
7439-92-1	Lead	13.5			P
7439-95-4	Magnesium	4870			P
7439-96-5	Manganese	346		N J	P
7440-02-0	Nickel	17.1		E J	P
7440-09-7	Potassium	1310			P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	1.0	U		P
7440-23-5	Sodium	64.9	J	u	P
7440-28-0	Thallium	2.6	U		P
7440-62-2	Vanadium	31.2			P
7440-66-6	Zinc	61.9		E J	P

DM
9-24-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 24, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Pend Oreille Village,
Case# 36728, SDG: MJ8AK0, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Three (3) rinsate blanks were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. The sample numbers for this data set are:

MJ8AK0 MJ8AK1 MJ8AK3

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days). The samples were collected on 8/16/07 thru 8/19/07. ICP-AES analysis was conducted on 8/24/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-102%) met both the frequency (10%) and recovery (90-110%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for all analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries (93-105%) for the LCS were within the established control limits (80-120%) for aqueous samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of calcium and silver. Affected samples were qualified (U).

MATRIX SPIKE, DUPLICATE and SERIAL DILUTION ANALYSIS - Not Applicable

ASSESSMENT SUMMARY

Calcium and silver data were qualified (U) due to detected presence of these analytes in analytical blanks.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UU - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AK0

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.:

SDG NO.: MJ8AK0Matrix (soil/water): WATERLab Sample ID: BT67299Level (low/med): LOWDate Received: 08/22/2007% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	38.0	J	U	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	4.7	J		P
7439-96-5	Manganese	0.25	J		P
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	5000	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Dr
9-24-07

Color Before: COLORLESSClarity Before: CLEAR

Texture: _____

Color After: COLORLESSClarity After: CLEAR

Artifacts: _____

Comments: _____

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AK1

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36728

NRAS No.: _____

SDG NO.: MJ8AK0Matrix (soil/water): WATERLab Sample ID: BT67300Level (low/med): LOWDate Received: 08/22/2007% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	81.4	U	u	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	15.0	U		P
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	4.6	U	u	P
7440-23-5	Sodium	5000	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

Color Before: COLORLESSClarity Before: CLEAR

Texture: _____

Color After: COLORLESSClarity After: CLEAR

Artifacts: _____

Comments: _____

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8AK3

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055

Lab Code: BONNER Case No.: 36728 NRAS No.: _____ SDG NO.: MJ8AK0

Matrix (soil/water): WATER Lab Sample ID: BT67301

Level (low/med): LOW Date Received: 08/22/2007

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	70.1	J	u	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	4.9	J		P
7439-96-5	Manganese	0.63	J		P
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	1.9	J	u	P
7440-23-5	Sodium	5000	U		P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

DM
9-24-07

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

APPENDIX H

Analytical Data – The Upper Level Site



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Dr. East
Port Orchard, Washington 98366

MEMORANDUM

SUBJECT: Data Release for Metals Results from the USEPA Region 10 Laboratory

PROJECT NAME: Upper Grandview Mine

PROJECT CODE: TEC-765C

FROM: Gerald Dodo, Acting Laboratory Director
Office of Environmental Assessment
USEPA Region 10 Laboratory

TO: Earl Liverman, RPM
Office of Environmental Cleanup, Emergency Response Unit
USEPA Region 10

CC: Alexis Ande, Techlaw

I have authorized release of this data package. Attached you will find the metals results for the Upper Grandview Mine project for the samples collected between 09/12/2007 and 09/13/2007. This is the last of the data associated with this project. For further information regarding the attached data, contact Katie Adams at 360-871-8748.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 LABORATORY
7411 Beach Dr. East
Port Orchard, Washington 98366

**QUALITY ASSURANCE MEMORANDUM
FOR INORGANIC CHEMICAL ANALYSES**

DATE: October 30, 2007

TO: Earl Liverman, Project Manager
Office of Environmental Cleanup, Emergency Response Unit, US EPA Region 10

From: Katie Adams, Chemist
Stephanie Le, Chemist
Office of Environmental Assessment, US EPA Region 10 Laboratory

SUBJECT: Quality Assurance Review of Upper Grandview Mine for Metals

Project Code: TEC-765C
Account Code: 07T10P302DD2C10ZZLA00

CC: Alexis Ande, Techlaw

The following is a quality assurance review of the results of the analysis of five soil and one rinsate water sample for metals. These samples were submitted for the Grandview Mine Project. The analyses were performed by ESAT chemists at the US EPA Region 10 Laboratory in Port Orchard, WA, following US EPA and Laboratory guidelines.

This review was conducted for the following samples:

Soils:

07374450 07374451 07374452 07374453 07374454

Water (rinsate):

07374455

Data Qualifications

Comments below refer to the quality control specifications outlined in the Laboratory's current Quality Assurance Manual, Standard Operating Procedures (SOPs) and the Quality Assurance Project Plan (QAPP). No excursions were required from the method Standard Operating Procedures.

The quality control measures which did not meet Laboratory/QAPP criteria are annotated in the title of each affected subsection with "**Laboratory/QAPP Criteria Not Met**".

For those tests for which the USEPA Region 10 Laboratory has been accredited by the National Environmental Laboratory Accreditation Conference (NELAC), all requirements of the current NELAC Standard have been met.

1. Sample Transport and Receipt -Laboratory/QAPP Criteria Not Met

Refer to the Corrective Action Notice dated 09/17/2007 for a record of observations made during sample receipt.

2. Sample Holding Times

The concentration of an analyte in a sample or sample extract may increase or decrease over time depending on the nature of the analyte. For this reason, holding time limits are recommended for samples. The samples covered by this review met method holding time recommendations.

3. Sample Preparation

Samples were prepared according to the method outlined in the SOP for these analytes for this type of matrix. No qualification of the data was required based on sample preparation.

4. Initial Calibration and Calibration Verification - Laboratory/QAPP Criteria Not Met

The calibration factors generated for the initial calibration met method criteria. All calibration verification checks met the frequency and recovery criteria on the day of analysis for the soil analyses. In the water analyses, recovery was high for K, Ca, and Ni. The 'J' qualifier was required for Ca, K, and Ni in the water sample based on calibration verification.

5. Laboratory Control Samples

All laboratory control sample results met the recovery acceptance criteria for the method. No qualification was required based on laboratory control sample analysis.

6. Blank Analysis -Laboratory/QAPP Criteria Not Met

The method blank for the water preparation contained detectable levels of Fe and Ni. The water results for Fe and Ni were qualified 'J'.

7. Duplicate Analysis -Laboratory/QAPP Criteria Not Met

Duplicate analysis was performed on samples 07374452 (soil) and 07374455 (water). Sample results which were greater than five times the MRL level were within the +/- 20% RPD requirement except for Cd and Zn in the soil analyses with RPDs of 26% and 22% respectively. The 'J' qualifier was required for Cd and Zn in the soil samples based on duplicate analysis.

8. Matrix Spike/Matrix Spike Duplicate Analysis -Laboratory/QAPP Criteria Not Met

Matrix spike analyses were performed on samples 07374452 (soil) and 07374455 (water). Sample results were within the ± 75 -125% recovery except for low recoveries of Sb in the soil analyses and high recoveries of Ni and Fe in the water analyses. The 'J' qualifier was required for Sb in the soil samples and for Ni and Fe in the water sample based on matrix spike analyses.

9. Reference Materials -Laboratory/QAPP Criteria Not Met

A reference material was prepared and analyzed with the soil samples. Analytical values for this sample were within the range of acceptable results except having a high recovery for Al. The 'J' qualifier was required for Al in the soil samples based on reference material analysis.

10. Instrument Peak Integrations

No manual integrations were performed for this method.

11. Interferences

Serial dilution checks and interelement check standards were analyzed to demonstrate that interferences were under control. All results of these checks met laboratory acceptance limits.

12. Reporting Limits

All sample results that fall below the MRL are assigned the value of the MRL and the 'U' qualifier is attached.

13. Changes from Preliminary Data

Preliminary data was based on a screening of these samples. The soil samples were prepared a second time prior to the reported analyses.

14. Data Qualifiers

The cadmium, zinc, aluminum, and antimony results for the soil samples were qualified (J), estimated. The calcium, potassium, iron, and nickel results for the rinsate sample were qualified (J), estimated.

No other qualification was required for this analysis.

Below are the definitions for the codes used qualifying data from these analyses. When more than one quality issue was involved, the most restrictive qualifier has been attached to the data.

U - The analyte was not detected at or above the reported value.

J - The identification of the analyte is acceptable; however the reported value is an estimate.

The usefulness of qualified data should be treated according to the severity of the qualifier in light of the project's data quality objectives. Should questions arise regarding the data, contact Katie Adams at the Region 10 Laboratory, phone number (360) 871- 8748.

15. Definitions

Accuracy - the degree of conformity of a measured or calculated quantity to its actual value.

Duplicate Analysis – when a duplicate of a sample (DS), a matrix spike (MSD), or a laboratory control sample (LCSD) is analyzed, it is possible to use the comparison of the results in terms of relative percent difference (RPD) to calculate precision.

Internal standards - Compounds used to help evaluate instrument analytical performance for individual samples. Internal standards provide an instrument response for reference to accurately quantify the analytes for all associated instrumental analyses.

Laboratory Control Sample (LCS) - a clean matrix spiked with known quantities of analytes. The LCS is processed with samples through every step of preparation and analysis. Measuring percent recovery of each analyte in the LCS provides a measurement of accuracy for the analyte in the project samples. A laboratory control sample is prepared and analyzed at a frequency no less than one for every 20 project samples.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) - Sample analyses performed to provide information about the effect of the sample matrix on analyte recovery and measurement within the project samples. To create the MS/MSD, a project sample is spiked with known quantities of analytes and the percent recovery of the analytes are determined.

Method Blank- An analytical control that is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background and reagent contamination. A method blank is prepared and analyzed for every batch of samples at a minimum frequency of one per every 20 samples. To produce unqualified data, the result of the method blank analysis is required to be less than the MRL and

less than 10 times the amount of analyte found in any project sample.

Minimum Reporting Level (MRL) - the smallest measured concentration of a substance that can be reliably measured using a given analytical method.

Peak Integrations - The output of many analytical instruments is a peak which represents the quantity of analyte in the sample. The instrument automatically integrates the peak area to provide the concentration of the analyte; however, sometimes these peaks need to be manually integrated by the analyst.

Precision – the degree of mutual agreement or repeatability among a series of individual results.

Reference materials – Samples with analyte values that are homogeneous and well established. This allows the reference material to be used to assess the accuracy of the measurement method.

Relative Percent Difference – The difference between two sample results divided by their mean and expressed as a percentage.

Manchester Environmental Laboratory

Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-CTR-D-SB-04

Collected: 9/12/07
Matrix: Solid
Sample Number: 07374450
Type: Reg sample

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum	10700	mg/kg-dry	J
	7440360	Antimony	4.5	mg/kg-dry	UJ
	7440382	Arsenic	4.5	mg/kg-dry	U
	7440393	Barium	135	mg/kg-dry	
	7440417	Beryllium	0.35	mg/kg-dry	
	7440439	Cadmium	0.50	mg/kg-dry	UJ
	7440702	Calcium	2600	mg/kg-dry	
	7440473	Chromium	16.0	mg/kg-dry	
	7440484	Cobalt	7.08	mg/kg-dry	
	7440508	Copper	21.8	mg/kg-dry	
	7439896	Iron	17100	mg/kg-dry	
	7439921	Lead	19.8	mg/kg-dry	
	7439954	Magnesium	3920	mg/kg-dry	
	7439965	Manganese	345	mg/kg-dry	
	7440020	Nickel	14.9	mg/kg-dry	
	7440097	Potassium	1420	mg/kg-dry	
	7782492	Selenium	5.0	mg/kg-dry	U
	7440224	Silver	1.0	mg/kg-dry	U
	7440235	Sodium	86.6	mg/kg-dry	
	7440280	Thallium	5.0	mg/kg-dry	U
	7440622	Vanadium	28.6	mg/kg-dry	
	7440666	Zinc	90	mg/kg-dry	J

Manchester Environmental Laboratory

Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-CTR-A-SS-01

Collected: 9/12/07
Matrix: Solid
Sample Number: 07374451
Type: Reg sample

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum	13000	mg/kg-dry	J
	7440360	Antimony	4.4	mg/kg-dry	UJ
	7440382	Arsenic	4.7	mg/kg-dry	
	7440393	Barium	205	mg/kg-dry	
	7440417	Beryllium	0.40	mg/kg-dry	
	7440439	Cadmium	6.80	mg/kg-dry	J
	7440702	Calcium	19000	mg/kg-dry	
	7440473	Chromium	17.0	mg/kg-dry	
	7440484	Cobalt	5.91	mg/kg-dry	
	7440508	Copper	30.4	mg/kg-dry	
	7439896	Iron	15200	mg/kg-dry	
	7439921	Lead	414	mg/kg-dry	
	7439954	Magnesium	7200	mg/kg-dry	
	7439965	Manganese	584	mg/kg-dry	
	7440020	Nickel	14.3	mg/kg-dry	
	7440097	Potassium	1520	mg/kg-dry	
	7782492	Selenium	4.9	mg/kg-dry	U
	7440224	Silver	0.99	mg/kg-dry	U
	7440235	Sodium	125	mg/kg-dry	
	7440280	Thallium	4.9	mg/kg-dry	U
	7440622	Vanadium	25.2	mg/kg-dry	
	7440666	Zinc	1800	mg/kg-dry	J

Manchester Environmental Laboratory

Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-CTR-A-SS-09

Collected: 9/12/07
Matrix: Solid
Sample Number: 07374452
Type: Reg sample

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum	12700	mg/kg-dry	J
	7440360	Antimony	4.4	mg/kg-dry	UJ
	7440382	Arsenic	5.6	mg/kg-dry	
	7440393	Barium	203	mg/kg-dry	
	7440417	Beryllium	0.40	mg/kg-dry	
	7440439	Cadmium	7.5	mg/kg-dry	J
	7440702	Calcium	18200	mg/kg-dry	
	7440473	Chromium	15.4	mg/kg-dry	
	7440484	Cobalt	5.90	mg/kg-dry	
	7440508	Copper	28.6	mg/kg-dry	
	7439896	Iron	16000	mg/kg-dry	
	7439921	Lead	399	mg/kg-dry	
	7439954	Magnesium	7130	mg/kg-dry	
	7439965	Manganese	610	mg/kg-dry	
	7440020	Nickel	14.0	mg/kg-dry	
	7440097	Potassium	1390	mg/kg-dry	
	7782492	Selenium	4.9	mg/kg-dry	U
	7440224	Silver	0.98	mg/kg-dry	U
	7440235	Sodium	119	mg/kg-dry	
	7440280	Thallium	4.9	mg/kg-dry	U
	7440622	Vanadium	25.7	mg/kg-dry	
	7440666	Zinc	2100	mg/kg-dry	J

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374452
Type: Duplicate

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum	12300	mg/kg-dry	J
	7440360	Antimony	4.5	mg/kg-dry	UJ
	7440382	Arsenic	4.7	mg/kg-dry	
	7440393	Barium	193	mg/kg-dry	
	7440417	Beryllium	0.39	mg/kg-dry	
	7440439	Cadmium	5.8	mg/kg-dry	J
	7440702	Calcium	19000	mg/kg-dry	
	7440473	Chromium	15.4	mg/kg-dry	
	7440484	Cobalt	5.49	mg/kg-dry	
	7440508	Copper	28.1	mg/kg-dry	
	7439896	Iron	15500	mg/kg-dry	
	7439921	Lead	378	mg/kg-dry	
	7439954	Magnesium	7170	mg/kg-dry	
	7439965	Manganese	575	mg/kg-dry	
	7440020	Nickel	14.0	mg/kg-dry	
	7440097	Potassium	1410	mg/kg-dry	
	7782492	Selenium	5.0	mg/kg-dry	U
	7440224	Silver	0.99	mg/kg-dry	U
	7440235	Sodium	125	mg/kg-dry	
	7440280	Thallium	5.0	mg/kg-dry	U
	7440622	Vanadium	24.4	mg/kg-dry	
	7440666	Zinc	1700	mg/kg-dry	J

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374452
Type: Matrix Spike

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/25/2007
Analytes(s)	7429905	Aluminum		NA
	7440702	Calcium		NA
	7439896	Iron		NA
	7439921	Lead		NA
	7439954	Magnesium		NA
	7439965	Manganese		NA
	7440097	Potassium		NA
	7440235	Sodium		NA
	7440666	Zinc		NA
Surrogate(s)	7440360	Antimony	68	%Rec
	7440382	Arsenic	98	%Rec
	7440393	Barium	96	%Rec
	7440417	Beryllium	98	%Rec
	7440439	Cadmium	77	%Rec
	7440473	Chromium	94	%Rec
	7440484	Cobalt	89	%Rec
	7440508	Copper	99	%Rec
	7440020	Nickel	97	%Rec
	7782492	Selenium	99	%Rec
	7440224	Silver	103	%Rec
	7440280	Thallium	92	%Rec
	7440622	Vanadium	95	%Rec

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374452
Type: Matrix Spike Dupl

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Dry Weight		Container ID : N1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum		NA
	7440702	Calcium		NA
	7439896	Iron		NA
	7439921	Lead		NA
	7439954	Magnesium		NA
	7439965	Manganese		NA
	7440097	Potassium		NA
	7440235	Sodium		NA
	7440666	Zinc		NA
Surrogate(s):	7440360	Antimony	67	%Rec
	7440382	Arsenic	96	%Rec
	7440393	Barium	97	%Rec
	7440417	Beryllium	96	%Rec
	7440439	Cadmium	82	%Rec
	7440473	Chromium	92	%Rec
	7440484	Cobalt	88	%Rec
	7440508	Copper	100	%Rec
	7440020	Nickel	95	%Rec
	7782492	Selenium	99	%Rec
	7440224	Silver	102	%Rec
	7440280	Thallium	90	%Rec
	7440622	Vanadium	93	%Rec

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-CTR-B-SB-02

Collected: 9/12/07
Matrix: Solid
Sample Number: 07374453
Type: Reg sample

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Dry Weight	Container ID : N1	
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)	Analysis Date : 10/16/2007	
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN	Prep Date : 9/25/2007	
Analytes(s):	7429905 Aluminum	15400	mg/kg-dry	J
	7440360 Antimony	4.5	mg/kg-dry	UJ
	7440382 Arsenic	4.8	mg/kg-dry	
	7440393 Barium	200	mg/kg-dry	
	7440417 Beryllium	0.48	mg/kg-dry	
	7440439 Cadmium	2.6	mg/kg-dry	J
	7440702 Calcium	9430	mg/kg-dry	
	7440473 Chromium	16.5	mg/kg-dry	
	7440484 Cobalt	6.52	mg/kg-dry	
	7440508 Copper	27.5	mg/kg-dry	
	7439896 Iron	17400	mg/kg-dry	
	7439921 Lead	182	mg/kg-dry	
	7439954 Magnesium	4550	mg/kg-dry	
	7439965 Manganese	573	mg/kg-dry	
	7440020 Nickel	15.3	mg/kg-dry	
	7440097 Potassium	1320	mg/kg-dry	
	7782492 Selenium	5.0	mg/kg-dry	U
	7440224 Silver	1.0	mg/kg-dry	U
	7440235 Sodium	115	mg/kg-dry	
	7440280 Thallium	5.0	mg/kg-dry	U
	7440622 Vanadium	27.8	mg/kg-dry	
	7440666 Zinc	720	mg/kg-dry	J

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-CTR-C-SB-03

Collected: 9/12/07
Matrix: Solid
Sample Number: 07374454
Type: Reg sample

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Dry Weight	Container ID : N1	
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)	Analysis Date : 10/16/2007	
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN	Prep Date : 9/25/2007	
Analytes(s):	7429905 Aluminum	14500	mg/kg-dry	J
	7440360 Antimony	4.5	mg/kg-dry	UJ
	7440382 Arsenic	4.9	mg/kg-dry	
	7440393 Barium	167	mg/kg-dry	
	7440417 Beryllium	0.45	mg/kg-dry	
	7440439 Cadmium	0.90	mg/kg-dry	J
	7440702 Calcium	4160	mg/kg-dry	
	7440473 Chromium	15.5	mg/kg-dry	
	7440484 Cobalt	6.41	mg/kg-dry	
	7440508 Copper	23.4	mg/kg-dry	
	7439896 Iron	17000	mg/kg-dry	
	7439921 Lead	42.1	mg/kg-dry	
	7439954 Magnesium	3740	mg/kg-dry	
	7439965 Manganese	389	mg/kg-dry	
	7440020 Nickel	14.7	mg/kg-dry	
	7440097 Potassium	1160	mg/kg-dry	
	7782492 Selenium	5.0	mg/kg-dry	U
	7440224 Silver	0.99	mg/kg-dry	U
	7440235 Sodium	102	mg/kg-dry	
	7440280 Thallium	5.0	mg/kg-dry	U
	7440622 Vanadium	26.8	mg/kg-dry	
	7440666 Zinc	220	mg/kg-dry	J

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description: GV-RN-01

Collected: 9/13/07
Matrix: Liquid
Sample Number: 07374455
Type: Reg sample

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Wet Weight		Container ID : B1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/19/2007
Analytes(s):	7429905	Aluminum	30	ug/L	U
	7440360	Antimony	45	ug/L	U
	7440382	Arsenic	45	ug/L	U
	7440393	Barium	1.0	ug/L	U
	7440417	Beryllium	1.0	ug/L	U
	7440439	Cadmium	3.0	ug/L	U
	7440702	Calcium	85	ug/L	J
	7440473	Chromium	22	ug/L	
	7440484	Cobalt	5.0	ug/L	U
	7440508	Copper	5.0	ug/L	U
	7439896	Iron	95	ug/L	J
	7439921	Lead	25	ug/L	U
	7439954	Magnesium	50	ug/L	U
	7439965	Manganese	6.3	ug/L	
	7440020	Nickel	22	ug/L	J
	7440097	Potassium	700	ug/L	UJ
	7782492	Selenium	50	ug/L	U
	7440224	Silver	10	ug/L	U
	7440235	Sodium	100	ug/L	U
	7440280	Thallium	50	ug/L	U
	7440622	Vanadium	10	ug/L	U
	7440666	Zinc	5.4	ug/L	

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374455
Type: Duplicate

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Wet Weight		Container ID : B1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/19/2007
Analytes(s):	7429905	Aluminum	30	ug/L U
	7440360	Antimony	45	ug/L U
	7440382	Arsenic	45	ug/L U
	7440393	Barium	1.0	ug/L U
	7440417	Beryllium	1.0	ug/L U
	7440439	Cadmium	3.0	ug/L U
	7440702	Calcium	79	ug/L J
	7440473	Chromium	10	ug/L U
	7440484	Cobalt	5.0	ug/L U
	7440508	Copper	5.0	ug/L U
	7439896	Iron	20	ug/L UJ
	7439921	Lead	25	ug/L U
	7439954	Magnesium	50	ug/L U
	7439965	Manganese	3.7	ug/L
	7440020	Nickel	10	ug/L UJ
	7440097	Potassium	700	ug/L UJ
	7782492	Selenium	50	ug/L U
	7440224	Silver	10	ug/L U
	7440235	Sodium	100	ug/L U
	7440280	Thallium	50	ug/L U
	7440622	Vanadium	10	ug/L U
	7440666	Zinc	5.0	ug/L U

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374455
Type: Matrix Spike

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Wet Weight		Container ID : B1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/19/2007
Analytes(s):	7440702	Calcium		NA
	7439954	Magnesium		NA
	7440097	Potassium		NA
	7440235	Sodium		NA
Surrogate(s):	7429905	Aluminum	106	%Rec
	7440360	Antimony	107	%Rec
	7440382	Arsenic	107	%Rec
	7440393	Barium	104	%Rec
	7440417	Beryllium	106	%Rec
	7440439	Cadmium	111	%Rec
	7440473	Chromium	124	%Rec
	7440484	Cobalt	107	%Rec
	7440508	Copper	112	%Rec
	7439896	Iron	139	%Rec
	7439921	Lead	110	%Rec
	7439965	Manganese	109	%Rec
	7440020	Nickel	126	%Rec
	7782492	Selenium	108	%Rec
	7440224	Silver	106	%Rec
	7440280	Thallium	111	%Rec
	7440622	Vanadium	107	%Rec
	7440666	Zinc	110	%Rec

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: 07374455
Type: Matrix Spike Dupl

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Wet Weight		Container ID : B1
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/19/2007
Analytes(s):	7440702	Calcium		NA
	7439954	Magnesium		NA
	7440097	Potassium		NA
	7440235	Sodium		NA
Surrogate(s):	7429905	Aluminum	106	%Rec
	7440360	Antimony	106	%Rec
	7440382	Arsenic	105	%Rec
	7440393	Barium	103	%Rec
	7440417	Beryllium	104	%Rec
	7440439	Cadmium	107	%Rec
	7440473	Chromium	95	%Rec
	7440484	Cobalt	104	%Rec
	7440508	Copper	110	%Rec
	7439896	Iron	98	%Rec
	7439921	Lead	106	%Rec
	7439965	Manganese	104	%Rec
	7440020	Nickel	105	%Rec
	7782492	Selenium	105	%Rec
	7440224	Silver	104	%Rec
	7440280	Thallium	108	%Rec
	7440622	Vanadium	105	%Rec
	7440666	Zinc	105	%Rec

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IS092507ABL
Type: Blank

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Dry Weight		Container ID :
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Analytes(s):	7429905	Aluminum	3.0	mg/kg-dry	U
	7440360	Antimony	4.5	mg/kg-dry	U
	7440382	Arsenic	4.5	mg/kg-dry	U
	7440393	Barium	0.20	mg/kg-dry	U
	7440417	Beryllium	0.10	mg/kg-dry	U
	7440439	Cadmium	0.50	mg/kg-dry	U
	7440702	Calcium	3.0	mg/kg-dry	U
	7440473	Chromium	1.0	mg/kg-dry	U
	7440484	Cobalt	0.50	mg/kg-dry	U
	7440508	Copper	0.50	mg/kg-dry	U
	7439896	Iron	2.0	mg/kg-dry	U
	7439921	Lead	3.0	mg/kg-dry	U
	7439954	Magnesium	5.0	mg/kg-dry	U
	7439965	Manganese	0.30	mg/kg-dry	U
	7440020	Nickel	1.0	mg/kg-dry	U
	7440097	Potassium	70	mg/kg-dry	U
	7782492	Selenium	5.0	mg/kg-dry	U
	7440224	Silver	1.0	mg/kg-dry	U
	7440235	Sodium	10	mg/kg-dry	U
	7440280	Thallium	5.0	mg/kg-dry	U
	7440622	Vanadium	1.0	mg/kg-dry	U
	7440666	Zinc	0.50	mg/kg-dry	U

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IS092507AL1
Type: LCS

			Result	Units	Qlfr
MET					
Parameter	:	Metals, ICP-SAS	Dry Weight		Container ID :
Method	:	200.7 ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/16/2007
Prep Method	:	200.2 Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/25/2007
Surrogate(s)	:	7429905 Aluminum	103	%Rec	
		7440360 Antimony	104	%Rec	
		7440382 Arsenic	104	%Rec	
		7440393 Barium	101	%Rec	
		7440417 Beryllium	105	%Rec	
		7440439 Cadmium	105	%Rec	
		7440702 Calcium	106	%Rec	
		7440473 Chromium	101	%Rec	
		7440484 Cobalt	98	%Rec	
		7440508 Copper	105	%Rec	
		7439896 Iron	105	%Rec	
		7439921 Lead	102	%Rec	
		7439954 Magnesium	102	%Rec	
		7439965 Manganese	100	%Rec	
		7440020 Nickel	104	%Rec	
		7440097 Potassium	101	%Rec	
		7782492 Selenium	103	%Rec	
		7440224 Silver	100	%Rec	
		7440235 Sodium	107	%Rec	
		7440280 Thallium	103	%Rec	
		7440622 Vanadium	101	%Rec	
		7440666 Zinc	96	%Rec	

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IS092507AL2
Type: LCSD

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Dry Weight		Container ID :
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/16/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/25/2007
Surrogate(s)	7429905	Aluminum	102	%Rec
	7440360	Antimony	104	%Rec
	7440382	Arsenic	103	%Rec
	7440393	Barium	101	%Rec
	7440417	Beryllium	104	%Rec
	7440439	Cadmium	104	%Rec
	7440702	Calcium	106	%Rec
	7440473	Chromium	101	%Rec
	7440484	Cobalt	97	%Rec
	7440508	Copper	104	%Rec
	7439896	Iron	104	%Rec
	7439921	Lead	102	%Rec
	7439954	Magnesium	102	%Rec
	7439965	Manganese	101	%Rec
	7440020	Nickel	105	%Rec
	7440097	Potassium	100	%Rec
	7782492	Selenium	103	%Rec
	7440224	Silver	102	%Rec
	7440235	Sodium	107	%Rec
	7440280	Thallium	101	%Rec
	7440622	Vanadium	102	%Rec
	7440666	Zinc	96	%Rec

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Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IW091907A
Type: Blank

			Result	Units	Qlfr
MET					
Parameter	: Metals, ICP-SAS		Wet Weight		Container ID :
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)			Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN			Prep Date : 9/19/2007
Analytes(s):	7429905	Aluminum	30	ug/L	U
	7440360	Antimony	45	ug/L	U
	7440382	Arsenic	45	ug/L	U
	7440393	Barium	1.0	ug/L	U
	7440417	Beryllium	1.0	ug/L	U
	7440439	Cadmium	3.0	ug/L	U
	7440702	Calcium	30	ug/L	U
	7440473	Chromium	10	ug/L	U
	7440484	Cobalt	5.0	ug/L	U
	7440508	Copper	5.0	ug/L	U
	7439896	Iron	59	ug/L	
	7439921	Lead	25	ug/L	U
	7439954	Magnesium	50	ug/L	U
	7439965	Manganese	2.0	ug/L	U
	7440020	Nickel	15	ug/L	
	7440097	Potassium	700	ug/L	U
	7782492	Selenium	50	ug/L	U
	7440224	Silver	10	ug/L	U
	7440235	Sodium	100	ug/L	U
	7440280	Thallium	50	ug/L	U
	7440622	Vanadium	10	ug/L	U
	7440666	Zinc	5.0	ug/L	U

Manchester Environmental Laboratory
Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IW091907A
Type: LCS

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Wet Weight	Container ID :	
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)	Analysis Date : 10/22/2007	
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN	Prep Date : 9/19/2007	
Surrogate(s)	7429905	Aluminum	104	%Rec
	7440360	Antimony	107	%Rec
	7440382	Arsenic	108	%Rec
	7440393	Barium	102	%Rec
	7440417	Beryllium	104	%Rec
	7440439	Cadmium	110	%Rec
	7440702	Calcium	111	%Rec
	7440473	Chromium	109	%Rec
	7440484	Cobalt	105	%Rec
	7440508	Copper	109	%Rec
	7439896	Iron	109	%Rec
	7439921	Lead	108	%Rec
	7439954	Magnesium	106	%Rec
	7439965	Manganese	106	%Rec
	7440020	Nickel	115	%Rec
	7440097	Potassium	104	%Rec
	7782492	Selenium	108	%Rec
	7440224	Silver	102	%Rec
	7440235	Sodium	112	%Rec
	7440280	Thallium	110	%Rec
	7440622	Vanadium	107	%Rec
	7440666	Zinc	109	%Rec

Manchester Environmental Laboratory

Report by Parameter for Project TEC-765C

Project Code: TEC-765C
Project Name: UPPER GRANDVIEW MINE
Project Officer: EARL LIVERMAN
Account Code: 07T10P302DD2C10ZZLA00
Station Description:

Collected:
Matrix: Other
Sample Number: IW091907A
Type: LCSD

		Result	Units	Qlfr
MET				
Parameter	: Metals, ICP-SAS	Wet Weight		Container ID :
Method	: 200.7	ICP Inductively Coupled Plasma-Atomic Emission Spectroscopy (22 elements)		Analysis Date : 10/22/2007
Prep Method	: 200.2	Metals, total recoverable, water, EMSL-CIN		Prep Date : 9/19/2007
Surrogate(s)	7429905	Aluminum	105	%Rec
	7440360	Antimony	108	%Rec
	7440382	Arsenic	107	%Rec
	7440393	Barium	103	%Rec
	7440417	Beryllium	104	%Rec
	7440439	Cadmium	108	%Rec
	7440702	Calcium	110	%Rec
	7440473	Chromium	114	%Rec
	7440484	Cobalt	105	%Rec
	7440508	Copper	109	%Rec
	7439896	Iron	113	%Rec
	7439921	Lead	106	%Rec
	7439954	Magnesium	105	%Rec
	7439965	Manganese	104	%Rec
	7440020	Nickel	112	%Rec
	7440097	Potassium	105	%Rec
	7782492	Selenium	107	%Rec
	7440224	Silver	104	%Rec
	7440235	Sodium	114	%Rec
	7440280	Thallium	109	%Rec
	7440622	Vanadium	107	%Rec
	7440666	Zinc	106	%Rec



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 7, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Upper Grandview Mine,
Case# 36737, SDG: MJ8B47, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Five (5) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8B47 MJ8B48 MJ8B49 MJ8B50 MJ8B51

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days; Hg 28 days). Samples were collected on 8/16/07 and 8/17/07. ICP-AES analysis was conducted on 8/28/07 and Mercury analysis on 8/24/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (93-103%) met both the frequency (10%) and recovery (90-110%) criteria.

For mercury, a blank and five standards were digested for instrument calibration. The correlation coefficient (0.999) met the criterion (≥ 0.995). Recoveries for verification standards (87-101%) met the frequency (10%) and recovery (80-120%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for both analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries for the LCS were within the established control limits for solid samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of silver and sodium. Affected samples were qualified (U).

MATRIX SPIKE ANALYSIS

A matrix spike was analyzed for sample MJ8B47. Percent recoveries (79-97%) met the criterion (75-125%) for all elements with the exception of antimony (42%), copper (56%) and manganese (53%). Affected sample data were qualified (J or UJ) and may be biased low.

DUPLICATE SAMPLE ANALYSIS

A duplicate sample was analyzed for sample MJ8B47. Relative percent differences ($\leq 33\%$) were within the criteria ($\leq 35\%$; $\pm \text{CRQL}$) with the exception of iron (71%). Iron data were qualified (J).

ICP-AES SERIAL DILUTION

A five-fold serial dilution was analyzed for sample MJ8B47. Percent differences ($\leq 8\%$) were within the control criterion ($\leq 10\%$) for the serial dilution analysis with the exception of chromium (12%) and potassium (15%). Affected sample data were qualified (J) and may be biased high.

ASSESSMENT SUMMARY

The following is a summary of qualified data: The (D) qualifier was applied to sample results that required dilution due to analyte concentrations that exceeded the instrument's upper calibration range.

Silver and sodium data were qualified (U) due to the detected presence of these elements in the instrument calibration and/or preparation blanks.

Antimony, copper and manganese data were qualified (J or UJ) due to low matrix spike recoveries. These data may be biased low.

Iron data were qualified (J) due to a high relative percent difference in the duplicate sample analysis. Bias for iron values could not be determined.

Chromium and potassium data were qualified (J) due to high percent differences in the serial dilution analysis. Values for these elements may be biased high.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

USEPA - CLP

1A-IN

009

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B47

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B47
 Matrix (soil/water): SOIL Lab Sample ID: BT65873
 Level (low/med): LOW Date Received: 08/18/2007
 Solids: 99.1
 Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6580			P
7440-36-0	Antimony	3.6	J	N J	P
7440-38-2	Arsenic	10.1			P
7440-39-3	Barium	120			P
7440-41-7	Beryllium	0.27	J		P
7440-43-9	Cadmium	22.8			P
7440-70-2	Calcium	112000		D	P
7440-47-3	Chromium	24.2		E J	P
7440-48-4	Cobalt	52.4		*	P
7440-50-8	Copper	103		N* J	P
7439-89-6	Iron	28800		* J	P
7439-92-1	Lead	6180		*	P
7439-95-4	Magnesium	15600			P
7439-96-5	Manganese	313		N* J	P
7439-97-6	Mercury	1.1			CV
7440-02-0	Nickel	40.3		*	P
7440-09-7	Potassium	1640		E J	P
7782-49-2	Selenium	2.9	J		P
7440-22-4	Silver	17.7			P
7440-23-5	Sodium	505	U		P
7440-28-0	Thallium	2.5	U		P
7440-62-2	Vanadium	26.8			P
7440-66-6	Zinc	5560		D	P

DM
9-7-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B48

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B47
 Matrix (soil/water): SOIL Lab Sample ID: BT65874
 Level (low/med): LOW Date Received: 08/18/2007
 Solids: 99.0
 Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5640			P
7440-36-0	Antimony	2.0	J	N J	P
7440-38-2	Arsenic	20.5			P
7440-39-3	Barium	76.5			P
7440-41-7	Beryllium	0.27	J		P
7440-43-9	Cadmium	9.7			P
7440-70-2	Calcium	123000		D	P
7440-47-3	Chromium	9.6		E J	P
7440-48-4	Cobalt	3.6	J	*	P
7440-50-8	Copper	27.5		N* J	P
7439-89-6	Iron	8340		* J	P
7439-92-1	Lead	5060		*	P
7439-95-4	Magnesium	37300			P
7439-96-5	Manganese	275		N* J	P
7439-97-6	Mercury	0.43			CV
7440-02-0	Nickel	26.3		*	P
7440-09-7	Potassium	1230		E J	P
7782-49-2	Selenium	1.3	J		P
7440-22-4	Silver	0.50	J	U	P
7440-23-5	Sodium	505	U		P
7440-28-0	Thallium	2.5	U		P
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	4270		D	P

DM
 9-7-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

USEPA - CLP

1A-IN

011

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B49

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B47
 Matrix (soil/water): SOIL Lab Sample ID: BT65875
 Level (low/med): LOW Date Received: 08/18/2007
 Solids: 98.4
 Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12500			P
7440-36-0	Antimony	6.1	✓	✓ UJ	P
7440-38-2	Arsenic	3.7			P
7440-39-3	Barium	123			P
7440-41-7	Beryllium	0.42	J		P
7440-43-9	Cadmium	3.0			P
7440-70-2	Calcium	4920			P
7440-47-3	Chromium	20.2		✓ J	P
7440-48-4	Cobalt	7.9		✓	P
7440-50-8	Copper	24.1		✓ J	P
7439-89-6	Iron	17100		✓ J	P
7439-92-1	Lead	176		✓	P
7439-95-4	Magnesium	4920			P
7439-96-5	Manganese	319		✓ J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	17.7		✓	P
7440-09-7	Potassium	2340		✓ J	P
7782-49-2	Selenium	3.6	U		P
7440-22-4	Silver	0.21	✓	U	P
7440-23-5	Sodium	207	✓	U	P
7440-28-0	Thallium	2.5	U		P
7440-62-2	Vanadium	42.6			P
7440-66-6	Zinc	390			P

DM
9-7-07

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B50

b Name: Bonner Analytical Testing Compa Contract: EPW06055
 b Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B47
 Matrix (soil/water): SOIL Lab Sample ID: BT65876
 Level (low/med): LOW Date Received: 08/18/2007
 Solids: 97.9
 Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5550			P
7440-36-0	Antimony	3.9	J	ND J	P
7440-38-2	Arsenic	73.6			P
7440-39-3	Barium	66.3			P
7440-41-7	Beryllium	0.30	J		P
7440-43-9	Cadmium	32.1			P
7440-70-2	Calcium	191000		D	P
7440-47-3	Chromium	10.3		ND J	P
7440-48-4	Cobalt	4.1	J	ND	P
7440-50-8	Copper	32.0		ND J	P
7439-89-6	Iron	11400		ND J	P
7439-92-1	Lead	8990		ND	P
7439-95-4	Magnesium	36200			P
7439-96-5	Manganese	271		ND J	P
7439-97-6	Mercury	0.15			CV
7440-02-0	Nickel	86.9		ND	P
7440-09-7	Potassium	2190		ND J	P
7782-49-2	Selenium	3.1	J		P
7440-22-4	Silver	1.6			P
7440-23-5	Sodium	511	U		P
7440-28-0	Thallium	1.1	J		P
7440-62-2	Vanadium	62.2			P
7440-66-6	Zinc	8970		D	P

DM
 9-7-07

Color Before: GRAY Clarity Before: _____ Texture: MEDIUM
 Color After: YELLOW Clarity After: _____ Artifacts: YES

Comments: PLANT MATTER AND ROCKS

USEPA - CLP

1A-IN

013

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B51

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055Lab Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B47Matrix (soil/water): SOIL Lab Sample ID: BT65877Level (low/med): LOW Date Received: 08/18/2007Solids: 99.3Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6430			P
7440-36-0	Antimony	3.6	J	N* J	P
7440-38-2	Arsenic	14.0			P
7440-39-3	Barium	109			P
7440-41-7	Beryllium	0.29	J		P
7440-43-9	Cadmium	29.2			P
7440-70-2	Calcium	138000		D	P
7440-47-3	Chromium	25.5		E J	P
7440-48-4	Cobalt	72.0		*	P
7440-50-8	Copper	97.4		N* J	P
7439-89-6	Iron	29500		* J	P
7439-92-1	Lead	5510		*	P
7439-95-4	Magnesium	18900			P
7439-96-5	Manganese	339		N* J	P
7439-97-6	Mercury	0.90			CV
7440-02-0	Nickel	39.2		*	P
7440-09-7	Potassium	1630		E J	P
7782-49-2	Selenium	3.3	J		P
7440-22-4	Silver	28.8			P
7440-23-5	Sodium	504	U		P
7440-28-0	Thallium	0.81	J		P
7440-62-2	Vanadium	27.4			P
7440-66-6	Zinc	6690		D	P

DM
9-7-07Color Before: BROWN Clarity Before: _____ Texture: MEDIUMColor After: YELLOW Clarity After: _____ Artifacts: YESComments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 7, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Upper Grandview Mine,
Case# 36737, SDG: MJ8B53, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. One (1) rinsate blank was analyzed for total elements by Bonner Analytical, Hattiesburg, MS. The sample number is MJ8B53.

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days; Hg 28 days). The sample was collected on 8/17/07. ICP-AES and mercury analyses were both conducted on 8/24/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-102%) met both the frequency (10%) and recovery (90-110%) criteria.

For mercury analysis, a blank and five standards were digested for calibration. The correlation coefficient (0.999) met the linearity criterion (≥ 0.995). Recoveries for verification standards (90-104%) met the frequency (10%) and recovery (80-120%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all analytes.

ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criteria (80-120%; $\pm 2 \times \text{CRDL}$) for both analytes.

LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Analyte recoveries (91-100%) for the LCS were within the established control limits (80-120%) for aqueous samples.

BLANKS

Preparation and instrument control blanks were prepared and analyzed at the required frequency. Blanks were either non-detected or below a factor (5x) that may impact sample results with the exception of calcium, silver, sodium and thallium. Affected samples were qualified (U).

MATRIX SPIKE ANALYSIS - Not Applicable

DUPLICATE SAMPLE ANALYSIS - Not Applicable

ICP-AES SERIAL DILUTION - Not Applicable

ASSESSMENT SUMMARY

Calcium, silver, sodium and thallium data were qualified (U) due to detected presence of these analytes in analytical blanks.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B53

Lab Name: Bonner Analytical Testing Compa Contract: EPW06055
 Lab Code: BONNER Case No.: 36737 NRAS No.: _____ SDG NO.: MJ8B53
 Matrix (soil/water): WATER Lab Sample ID: BT65878
 Level (low/med): LOW Date Received: 08/18/2007
 Solids: 0.0
 Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	70.3	J	U	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	0.64	J		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	2.3	J	U	P
7440-23-5	Sodium	267	J	U	P
7440-28-0	Thallium	2.8	J	U	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

DM
 9-7-07

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____
 Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

September 19, 2007

MEMORANDUM

SUBJECT: Data validation report for the Volatile Organics (VOCs), Semi-Volatile Organics (SVOCs), Organochlorine Pesticides (Pests) and Polychlorinated Biphenyls (PCBs) analyses of samples from the Upper Grandview Mine Site Case: 36767 SDG: J8B47

FROM: Raymond Wu, QA Chemist
Office of Environmental Assessment *RW 9/20/07*

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Bryan McKinnon, Start-3 Project Manager
TechLaw, Inc.

The quality assurance (QA) review of 2 water samples and 5 soil samples collected from the above referenced site has been completed. The samples were analyzed for VOCs, SVOCs, Pesticides, and PCBs in accordance with the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Concentration Organic Analysis (SOM01.1) by Chemtech at Mountainside, New Jersey. The following samples were evaluated in this validation report:

SDG: J8B47

J8B47 J8B48 J8B49 J8B50 J8B51 J8B53 J8B54

DATA QUALIFICATIONS

The following comments refer to the laboratory performance specification outlined in the Quality Assurance Project Plan dated July 31, 2007, USEPA CLP SOW for Organic Analysis (SOM01.1, 05/2005), and applicable criteria set forth in the USEPA CLP National Functional Guidelines for Organic Data Review (01/2005). Note that some of the analytical data reported may be qualified based on the professional judgment of the data reviewer.

The conclusions presented herein are based on the information provided for the review.

Holding Time - Acceptable

All of the samples met the extraction, Validated Time of Sample Receipt (VTSR) and/or analytical holding time criteria for VOC, SVOC, Pesticides and PCB analyses. The samples were collected

on 8/16/07 & 8/17/07; received by the laboratory 8/18/07, and were extracted for SVOCs, Pesticides and PCBs within five days of sample receipt for water and 10 days for soil. The samples were analyzed for VOCs within 14 days and SVOCs, Pesticides and PCBs within 40 days of sample collection. The cooler temperatures, upon the verified time of sample receipt (VTSR), were at 4°C. That was within the acceptable limits of 2-10 °C. None of the data was qualified on this basis.

Instrument Performance Checks - Acceptable

Four GC/MS and two GC systems were used for the sample analyses. The instruments used met the performance checks, ion abundance criteria and retention time stability checks and all of the samples were analyzed within acceptable 12-hour QC periods. None of the data were qualified on this basis.

Initial Calibrations (ICAL)

- The frequency of analysis of ICALs for each analytical fraction (VOCs, SVOCs, Pesticides & PCBs) was met. All of the ICALs met the technical acceptance criteria, i.e., the percent relative standard deviation (%RSDs), minimum relative response factors (RRFs), retention time windows, chromatographic resolutions, percent endrin and 4,4'-DDT breakdown (Pesticides only) for all target compounds and surrogates with the following exceptions:

VOCs (8/21/07 for soil, instrument MSVOAE)

- The %RSD of Acetone and Trichloroethene exceeded the 30% QC limit. The recalculation of %RSD indicated that the instrument was not linear at the lowest standard concentration analyzed during the initial calibration. These Compounds were not detected in any of the associated samples at or above the CRQL and would be qualified as J/UJ.

VOCs (8/24/07 for water, instrument MSVOAF)

- The %RSD of Acetone exceeded the 30% QC limit. The recalculation of %RSD indicated that the instrument was not linear at the lowest standard concentration analyzed during the initial calibration. These compounds were not detected in any of the associated samples at or above the CRQL and would be qualified as J/UJ.

VOCs (8/21/07 for soil, instrument MSVOAE; 8/24/07 for water, instrument MSVOAF)

- 1,4-Dioxane was lower than the required minimum RRF (0.01) and it was not detected in any samples. Due to the possibility of false negatives, all 1,4-Dioxane results were qualified unusable, "R".

SVOCs (8/2/07, instrument BNAA)

- The %RSD of 2,4-Dinitrophenol and Pentachlorophenol exceeded the 30% QC limit. The %RSD indicated that the instrument was not linear at the lowest standard concentration analyzed during the initial calibration. These compounds were not detected in any of the associated samples and would be qualified as "J/UJ".

None of the pesticide or PCB results was qualified on the basis of ICAL analyses.

Continuing Calibration Verification (CCV)

The frequency of analysis of CCV checks, chromatographic resolution, percent differences (%Ds) between the mean and daily response (calibration) factors, minimum response factors, retention time shifts and percent DDT and endrin breakdowns (Pesticide & PCB analyses) were met by all target compounds and surrogates. The recoveries of the pesticide & PCB standard mixtures were within the control limits. None of the pest/PCB data were qualified on this basis.

All of the volatile CCV checks met the criteria for frequency of analysis, the SOW specified, minimum RRFs and %D as compared to the initial calibration with the exception of the RRF for 1,4-Dioxane and the following:

Date/Time of Analysis/ Inst.	Compound	%D	Qualifier Detect/Non-detect	Associated Samples
8/24/07 11:59 (opening)	Acetone	32.1	J/None	J8B53 -> J8B54

The %Ds of the SVOC target compounds bracketing the sample and QC sample runs were all acceptable with the exception of the following:

Date/Time of Analysis/ Inst.	Compound	%D	Qualifier Detect/Non-detect	Associated Samples
8/25/07 3:46 (closing)	2,4-Dinitrophenol	-91.6	J/UJ	J8B47 -> J8B51
	4,6-Dinitro-2-Methylphenol	-84.7	J/UJ	"
8/29/07 2:07 (closing)	2,4-Dinitrophenol	-81.8	J/UJ	J8B47, J8B50, J8B51
	4,6-Dinitro-2-Methylphenol	-69.1	J/UJ	"

* Note: J8B47 -> J8B51, J8B53 and J8B54 were selected for reporting volatiles whereas J8B47RE, J8B48, J8B49, J8B50RE, J8B51RE & J8B53 were picked for reporting semivolatiles.

Quantitation Limits

The VOC samples were analyzed at the contract required quantitation limits (CRQL). The CRQLs were based on the lowest standard concentration analyzed in the initial calibrations. Target compounds that were detected at concentrations less than the QLs were qualified as estimated, "JQ". Trace level of common contaminants detected in the samples at concentration < CRQL were qualified by the reviewer as non-detects, "U", and reported at the CRQL. All of the reported results were adjusted for sample amount analyzed. When applicable, all of the "B", "J", "D", "S" and "E" qualifiers applied by the laboratory were crossed out by the reviewer.

All of the sample runs met the Contract-Required Quantitation Limits (CRQLs). There were no SVOCs detected above the CRQL for all of the samples. Detected Target compounds in the samples at concentrations less than the CRQLs were qualified as estimated, "JQ". Trace level of common contaminants detected in the samples at

concentration < CRQL were qualified by the reviewer as non-detects, "U", and reported at the CRQL.

Single-component pesticides and PCBs detected at concentrations with variability of >30% but were <60% between the primary and confirmatory columns, ZB-MR1 and ZB-MR2, were reported and qualified estimated, "JQ". Variability >60% were reported as non-detects, "U", at an elevated reporting limits (CRQL) due to chromatographic interferences. When applicable, all of the "J" and "P" qualifiers applied by the laboratory were crossed-out by the reviewer.

All were adjusted for the amounts extracted and percent moisture (soil). It is recommended that data users should utilize the results/analytical run selected by the reviewer where more than one analysis was performed on a single extract (ie. Dilution or re-analysis).

Blanks

The frequency of analysis of blanks and surrogate recovery criteria were met by all of the blanks analyzed. There were no contaminants found in any of the blanks.

Analytical Sequence - Acceptable

All of the standards, blanks, samples, and QC samples were analyzed in accordance with the SOW specified analytical sequence. The retention times as monitored by the internal standards (VOCs, SVOCs) and surrogates (Pesticides, PCBs) were within the specified RT windows. All of the sample analyses were within an acceptable 12 hour QC period and were bracketed by a technically acceptable CCV check standards. None of the data was qualified on this basis.

Surrogates/Deuterated Monitoring Compound Recoveries

Fourteen deuterated VOCS were spiked in all the samples and QC samples to evaluate laboratory performance. The 14 DMCs and their corresponding recovery acceptance limits are:

"Water"

DMCs	Recovery Limits (%)	DMCs	Recovery Limits (%)
Vinyl chloride -d3 (VCL)	65-131	1,2- Dichloropropane-d6 (DPA)	79-124
Chloroethane-d5 (CLA)	71-131	Toluene-d8 (TOL)	77-121
1,1- Dichloroethene-d2 (DCE)	55-104	trans-1,3-dichloropropene-d4 (TDP)	73-121
2-Butanone-d5 (BUT)	49-155	2-Hexanone-d5 (HEX)	28-135
Chloroform-d (CLF)	78-121	1,4-Dioxane (DXE)	50-150
1,2-Dichloroethane-d4 (DCA)	78-129	1,1,2,2-Tetrachloroethane-d2 (TCA)	73 -125
Benzene-d6 (BEN)	77-124	1,2-dichlorobenzene-d4 (DCZ)	80 -131

All of the water volatile surrogate recoveries met the applicable recovery criteria.

“Soil”

DMCs	Recovery Limits (%)	DMCs	Recovery Limits (%)
Vinyl chloride -d3 (VCL)	68-122	1,2- Dichloropropane-d6 (DPA)	74-124
Chloroethane-d5 (CLA)	61-130	Toluene-d8 (TOL)	78-121
1,1- Dichloroethene-d2 (DCE)	45-132	trans-1,3-dichloropropene-d4 (TDP)	72-130
2-Butanone-d5 (BUT)	20-182	2-Hexanone-d5 (HEX)	17-184
Chloroform-d (CLF)	72-123	1,4-Dioxane (DXE)	50-150
1,2-Dichloroethane-d4 (DCA)	79-122	1,1,2,2-Tetrachloroethane-d2 (TCA)	56 -161
Benzene-d6 (BEN)	80-121	1,2-dichlorobenzene-d4 (DCZ)	70 -131

All of the soil volatile surrogate recoveries met the applicable recovery criteria with exceptions of the following:

Soil Sample	DMC	%Recovery	Qualification Detects/Non-detects	Associated VOCs
J8B47	VCL	127	J/None	Vinyl Chloride
	CLA	159	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	139	J/None	Benzene
	DPA	134	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane
J8B48	VCL	171	J/None	Vinyl Chloride
	CLA	236	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	145	J/None	Benzene
	DPA	138	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane
J8B50	VCL	128	J/None	Vinyl Chloride

	CLA	167	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	141	J/None	Benzene
	DPA	137	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane
J8B51	CLA	157	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	139	J/None	Benzene
	DPA	143	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane

Surrogates or deuterated monitoring compounds (DMCs) are known concentrations of isotope-labeled acid and base/neutral or polynuclear hydrocarbon compounds added to the field and QC samples prior to extraction for SVOC analyses to monitor the laboratory's performance and efficiency during sample processing, extraction and analysis. The following is the list of DMCs/surrogates added to all field and QC samples prior to sample extraction:

DMCs (Water SVOCs)	Recovery Limits (%)	DMCs (Water SVOCs)	Recovery Limits (%)
Phenol-d5 (PHL)	39-106	Dimethylphthalate-d6 (DMP)	47-114
Bis(2-chloroethyl)ether-d8 (BCE)	40-105	Acenaphthylene-d8 (ACY)	41-107
2-chlorophenol-d4 (2CP)	41-106	4-Nitrophenol-d4 (4NP)	33-116
4-Methylphenol-d8 (4MP)	25-111	Fluorene-d10 (FLR)	42-111
Nitrobenzene-d4 (NBZ)	43-108	4,6-Dinitro-2-methylphenol-d2 (NMP)	22-104
2-Nitrophenol-d4 (2NP)	40-108	Anthracene-d10 (ANC)	44-110
2,4-Dichlorophenol-d3 (DCP)	37-105	Pyrene-d10 (PYR)	52-119
4-Chloroaniline-d4 (4CA)	1-145	Benzo(a)pyrene-d12 (BAP)	32-121

All of the water SVOC surrogate recoveries met the applicable recovery criteria.

DMCs (Soil SVOCs)	Recovery Limits (%)	DMCs (Soil SVOCs)	Recovery Limits (%)
Phenol-d5 (PHL)	17-103	Dimethylphthalate-d6 (DMP)	43-111
Bis(2-chloroethyl)ether-d8 (BCE)	12-98	Acenaphthylene-d8 (ACY)	20-97
2-chlorophenol-d4 (2CP)	13-101	4-Nitrophenol-d4 (4NP)	16-166

Gel Permeation Chromatography (GPC) Check – Acceptable

GPC is an optional cleanup method for both aqueous and non-aqueous samples. It was employed by the contract laboratory. A GPC blank was analyzed and was found to not exceed the contract Required Quantitation Limit (CRQL).

Tentatively Identified Compounds

Chromatographic peaks in the samples' VOC and SVOC runs that are not target compounds, surrogates or internal standards with areas > 10% of the nearest IS must be tentatively identified by the laboratory using a mass spectral search of the NIST library. The TICs identified by the lab on Form Is were qualified as tentatively identified at estimated concentrations, "JN", with an unknown bias.

Laboratory Contact

The laboratory was contacted during this review. The subcontract laboratory was asked to submit current Gas Chromatographic Temperature Program and to provide explanations for greater than usual amount of manual integrations regarding the volatile data.

Overall Assessment

The total number of data points evaluated was 946. As the result of the data validation, 14.4% of those were qualified due to failing internal standard; 1.1% of those were qualified due to calibration; 0.7% of those were qualified unusable due to extremely low and unacceptable instrument response.

The data, as qualified, are acceptable and can be used for all purposes.

Data Qualifiers		
	U	The analyte was not detected at or above the reported result.
	J	The analyte was positively identified. The associated numerical result is an estimate.
	UJ	The analyte was not detected at or above the reported estimated result. The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
	R	The data are unusable for all purposes.
	N	There is evidence the analyte is present in this sample.
	JN	There is evidence that the analyte is present. The associated numerical result is an estimate.
	L	Low Bias
	H	High Bias
	Q	The result is estimated because the concentration is below the Contract Required Quantitation Limits (CRQLs)
	K	Unknown Bias

4-Methylphenol-d8 (4MP)	8-100	Fluorene-d10 (FLR)	40-108
Nitrobenzene-d4 (NBZ)	16-103	4,6-Dinitro-2-methylphenol-d2 (NMP)	1-121
2-Nitrophenol-d4 (2NP)	16-104	Anthracene-d10 (ANC)	22-98
2,4-Dichlorophenol-d3 (DCP)	23-104	Pyrene-d10 (PYR)	51-120
4-Chloroaniline-d4 (4CA)	1-145	Benzo(a)pyrene-d12 (BAP)	43-111

All of the soil SVOC surrogate recoveries met the applicable recovery criteria.

Pesticide/PCB DMCs (both water and soil)	Recovery Limits (%)
Tetrachloro-m-xylene (TCX)	30-150
Decachlorobiphenyl (DCB)	30-150

The recoveries of TCX and DCB were calculated and reported from the two GC columns used for both pesticides and PCB analyses. For pesticides, the TCX and DCB recoveries met acceptable control limits in all samples. Therefore, none was qualified on this basis.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Samples J8B47 was designated for MS/MSD analyses for VOCs, SVOCs, Pesticides and PCBs. The percent recovery and percent difference (%RPD) were met for all with the exceptions of the following:

- Aroclors: half of the spiking %recoveries were out.

Since there was no detection of the aroclors in any of the samples, none was qualified on this basis.

Internal Standards

VOCs

- The acceptance criteria for internal standards (IS) was within +/- 30 seconds for retention time (RT) shifts and 50% to 200% of the IS area as compared to the IS RT and area of the daily continuing verification standard. All of the analyses met the IS area & RT criteria with exceptions of 3 samples:

- J8B47 - Internal Standard #1 & #3 were lower than the QC limits;
- J8B48 - Internal Standard #1, #2 & #3 were lower than the QC limits;
- J8B51 - Internal Standard #1, #2 & #3 were lower than the QC limits.

The corresponding compounds were qualified as J/UJ. They are:

- For Internal Standard #1 (1,4-Difluorobenzene)

Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, Chloroethane,

Trichlorofluoromethane, 1,1-Dichloroethene, 1,1,2-Trichloro-1,2,2-trifluoroethane, Acetone, Carbon Disulfide, Methyl Acetate, Bromochloromethane, Methylene Chloride, trans-1,2-Dichloroethene, Methyl ter-butyl ether, 1,1-Dichloroethane, cis-1,2-Dichloroethene, 2-Butanone, Chloroform, 1,2-Dichloroethane, 1,4-Dioxane.

- For Internal Standard #2 (Chlorobenzene-d5)

1,1,1-Trichloroethane, Cyclohexane, Carbon Tetrachloride, Benzene, Trichloroethene, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane, cis-1,3-Dichloropropene, 4-Methyl-2-pentanone, Toluene, trans-1,3-Dichloropropene, 1,1,2-Trichloroethane, Tetrachloroethene, 2-Hexanone, Dibromochloromethane, 1,2-Dibromoethane, Chlorobenzene, Ethylbenzene, m,p-Xylene, o-Xylene, Styrene, Isopropylbenzene, 1,1,2,2-Tetrachloroethane.

- For Internal Standard #3 (1,4-Dichlorobenzene-d4)

1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-Chloropropane, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene.

SVOC

- The acceptance criteria for internal standards (IS) are +/-30 seconds for retention time (RT) shifts and 50% to 200% of the IS area as compared to the IS RT and area of the daily continuing calibration standard. All of the results met the IS area and RT shift criteria with exceptions of 3 samples:

- J8B47 - Internal Standard #6 was lower than the QC limits;
- J8B50 - Internal Standard #6 was lower than the QC limits;
- J8B51RE - Internal Standard #6 was lower than the QC limits.

The corresponding compounds were qualified as J/UJ. They are:

- For Internal Standard #6 (Perylene-d12)

Di-n-octylphthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene.

Compound Identification - Acceptable

All of the detected target compounds were within the retention time windows. The VOC & the SVOC detections met the USEPA spectral matching criteria and were judged to be acceptable. Likewise, the pesticide/PCB detections were confirmed on a second dissimilar column and were acceptable.

Florisil Cartridge Check - Acceptable

The frequency of analysis and the recovery criteria for florisil used during Pesticides/PCB clean-up were met. None of the data was qualified on this basis.

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

REPORT

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01

Sample wt/vol: 4.33 (g/mL) g

Lab File ID: VE004621.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	5.8		UJK
74-87-3	Chloromethane	5.8		U
75-01-4	Vinyl Chloride	5.8		U
74-83-9	Bromomethane	5.8		U
75-00-3	Chloroethane	5.8		U
75-69-4	Trichlorofluoromethane	5.8		U
75-35-4	1,1-Dichloroethene	5.8		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.8		U L
67-64-1	Acetone	20		JH
75-15-0	Carbon disulfide	5.8		UJK
79-20-9	Methyl acetate	5.8		U L
75-09-2	Methylene chloride	7.5		JH
156-60-5	trans-1,2-Dichloroethene	5.8		UJK
1634-04-4	Methyl tert-Butyl ether	5.8		U
75-34-3	1,1-Dichloroethane	5.8		U
156-59-2	cis-1,2-Dichloroethene	5.8		U
78-93-3	2-Butanone	12		U
74-97-5	Bromochloromethane	5.8		U
67-66-3	Chloroform	5.8		U
71-55-6	1,1,1-Trichloroethane	5.8		U
110-82-7	Cyclohexane	5.8		U
56-23-5	Carbon Tetrachloride	5.8		U
71-43-2	Benzene	5.8		U
107-06-2	1,2-Dichloroethane	5.8		UJK
123-91-1	1,4-Dioxane	120		XR

9/13/07

SOM01.1 (5/2005)

: 00059

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

REPORT

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 4.33 (g/mL) g Lab File ID: VE004621.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)


9/13/07

: 00061

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g

Lab File ID: VE004628.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	7.1		U
74-87-3	Chloromethane	7.1		U
75-01-4	Vinyl Chloride	7.1		U
74-83-9	Bromomethane	7.1		U
75-00-3	Chloroethane	7.1		U
75-69-4	Trichlorofluoromethane	7.1		U
75-35-4	1,1-Dichloroethene	7.1		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.1		U
67-64-1	Acetone	36		
75-15-0	Carbon disulfide	7.1		U
79-20-9	Methyl acetate	7.1		U
75-09-2	Methylene chloride	12		
156-60-5	trans-1,2-Dichloroethene	7.1		U
1634-04-4	Methyl tert-Butyl ether	7.1		U
75-34-3	1,1-Dichloroethane	7.1		U
156-59-2	cis-1,2-Dichloroethene	7.1		U
78-93-3	2-Butanone	14		U
74-97-5	Bromochloromethane	7.1		U
67-66-3	Chloroform	7.1		U
71-55-6	1,1,1-Trichloroethane	7.1		U
110-82-7	Cyclohexane	7.1		U
56-23-5	Carbon Tetrachloride	7.1		U
71-43-2	Benzene	7.1		U
107-06-2	1,2-Dichloroethane	7.1		U
123-91-1	1,4-Dioxane	140		OR

9/17/07

SOM01.1 (5/2005)

: 00077

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g

Lab File ID: VE004628.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
79-01-6	Trichloroethene	7.1	U
108-87-2	Methylcyclohexane	7.1	U
78-87-5	1,2-Dichloropropane	7.1	U
75-27-4	Bromodichloromethane	7.1	U
10061-01-5	cis-1,3-Dichloropropene	7.1	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	7.1	U
10061-02-6	trans-1,3-Dichloropropene	7.1	U
79-00-5	1,1,2-Trichloroethane	7.1	U
127-18-4	Tetrachloroethene	7.1	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	7.1	U
106-93-4	1,2-Dibromoethane	7.1	U
108-90-7	Chlorobenzene	7.1	U
100-41-4	Ethylbenzene	7.1	U
95-47-6	o-Xylene	7.1	U
179601-23-1	m,p-Xylene	12	
100-42-5	Styrene	7.1	U
75-25-2	Bromoform	7.1	U
98-82-8	Isopropylbenzene	7.1	U
79-34-5	1,1,2,2-Tetrachloroethane	7.1	U
541-73-1	1,3-Dichlorobenzene	7.1	U
106-46-7	1,4-Dichlorobenzene	7.1	U
95-50-1	1,2-Dichlorobenzene	7.1	U
96-12-8	1,2-Dibromo-3-chloropropane	7.1	U
120-82-1	1,2,4-Trichlorobenzene	7.1	U
87-61-6	1,2,3-Trichlorobenzene	7.1	U

SOM01.1 (5/2005)

9/17/07

: 00078

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g Lab File ID: VE004628.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

Li
9/17/07

: 00079

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	6.7		UJK
74-87-3	Chloromethane	6.7		U
75-01-4	Vinyl Chloride	6.7		U
74-83-9	Bromomethane	6.7		U
75-00-3	Chloroethane	6.7		U
75-69-4	Trichlorofluoromethane	6.7		U
75-35-4	1,1-Dichloroethene	6.7		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.7		U
67-64-1	Acetone	21		JH
75-15-0	Carbon disulfide	6.7		UJK
79-20-9	Methyl acetate	8.8		JH
75-09-2	Methylene chloride	23		JH
156-60-5	trans-1,2-Dichloroethene	6.7		UJK
1634-04-4	Methyl tert-Butyl ether	6.7		U
75-34-3	1,1-Dichloroethane	6.7		U
156-59-2	cis-1,2-Dichloroethene	6.7		U
78-93-3	2-Butanone	16		JH
74-97-5	Bromochloromethane	6.7		UJK
67-66-3	Chloroform	6.7		U
71-55-6	1,1,1-Trichloroethane	6.7		U
110-82-7	Cyclohexane	6.7		U
56-23-5	Carbon Tetrachloride	6.7		U
71-43-2	Benzene	6.7		U
107-06-2	1,2-Dichloroethane	6.7		U
123-91-1	1,4-Dioxane	130		NR

9/17/07

SOM01.1 (5/2005)

: 00090

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.7	UJK
108-87-2	Methylcyclohexane		6.7	U
78-87-5	1,2-Dichloropropane		6.7	U
75-27-4	Bromodichloromethane		6.7	U
10061-01-5	cis-1,3-Dichloropropene		6.7	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		9.5	JH
10061-02-6	trans-1,3-Dichloropropene		6.7	UJK
79-00-5	1,1,2-Trichloroethane		6.7	U
127-18-4	Tetrachloroethene		6.7	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.7	U
106-93-4	1,2-Dibromoethane		6.7	U
108-90-7	Chlorobenzene		6.7	U
100-41-4	Ethylbenzene		6.7	U
95-47-6	o-Xylene		6.7	U
179601-23-1	m,p-Xylene		12	JH
100-42-5	Styrene		6.7	UJK
75-25-2	Bromoform		6.7	U
98-82-8	Isopropylbenzene		6.7	U
79-34-5	1,1,2,2-Tetrachloroethane		6.7	U
541-73-1	1,3-Dichlorobenzene		6.7	U
106-46-7	1,4-Dichlorobenzene		6.7	U
95-50-1	1,2-Dichlorobenzene		6.7	U
96-12-8	1,2-Dibromo-3-chloropropane		6.7	U
120-82-1	1,2,4-Trichlorobenzene		6.7	U
87-61-6	1,2,3-Trichlorobenzene		6.7	U

9/17/07

SOM01.1 (5/2005)

: 00091

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00092

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	14		U
74-87-3	Chloromethane	14		U
75-01-4	Vinyl Chloride	14		U
74-83-9	Bromomethane	14		U
75-00-3	Chloroethane	14		U
75-69-4	Trichlorofluoromethane	14		U
75-35-4	1,1-Dichloroethene	14		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	14		U
67-64-1	Acetone	58		
75-15-0	Carbon disulfide	14		U
79-20-9	Methyl acetate	37		
75-09-2	Methylene chloride	20		
156-60-5	trans-1,2-Dichloroethene	14		U
1634-04-4	Methyl tert-Butyl ether	14		U
75-34-3	1,1-Dichloroethane	14		U
156-59-2	cis-1,2-Dichloroethene	14		U
78-93-3	2-Butanone	28		U
74-97-5	Bromochloromethane	14		U
67-66-3	Chloroform	14		U
71-55-6	1,1,1-Trichloroethane	14		U
110-82-7	Cyclohexane	14		U
56-23-5	Carbon Tetrachloride	14		U
71-43-2	Benzene	14		U
107-06-2	1,2-Dichloroethane	14		U
123-91-1	1,4-Dioxane	280		NR

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9/17/07

SOM01.1 (5/2005)

: 00108

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

No to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		14	U
108-87-2	Methylcyclohexane		14	U
78-87-5	1,2-Dichloropropane		14	U
75-27-4	Bromodichloromethane		14	U
10061-01-5	cis-1,3-Dichloropropene		14	U
108-10-1	4-Methyl-2-pentanone		28	U
108-88-3	Toluene		14	U
10061-02-6	trans-1,3-Dichloropropene		14	U
79-00-5	1,1,2-Trichloroethane		14	U
127-18-4	Tetrachloroethene		14	U
591-78-6	2-Hexanone		28	U
124-48-1	Dibromochloromethane		14	U
106-93-4	1,2-Dibromoethane		14	U
108-90-7	Chlorobenzene		14	U
100-41-4	Ethylbenzene		14	U
95-47-6	o-Xylene		14	U
179601-23-1	m,p-Xylene		14	U
100-42-5	Styrene		14	U
75-25-2	Bromoform		14	U
98-82-8	Isopropylbenzene		14	U
79-34-5	1,1,2,2-Tetrachloroethane		14	U
541-73-1	1,3-Dichlorobenzene		14	U
106-46-7	1,4-Dichlorobenzene		14	U
95-50-1	1,2-Dichlorobenzene		14	U
96-12-8	1,2-Dibromo-3-chloropropane		14	U
120-82-1	1,2,4-Trichlorobenzene		14	U
87-61-6	1,2,3-Trichlorobenzene		14	U

9/17/07

SOM01.1 (5/2005)

: 00109

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____

SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00110

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g

Lab File ID: VE004630.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	6.4	U	U
74-87-3	Chloromethane	6.4	U	U
75-01-4	Vinyl Chloride	6.4	U	U
74-83-9	Bromomethane	6.4	U	U
75-00-3	Chloroethane	6.4	U	U
75-69-4	Trichlorofluoromethane	6.4	U	U
75-35-4	1,1-Dichloroethene	6.4	U	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.4	U	U
67-64-1	Acetone	19	JH	
75-15-0	Carbon disulfide	6.4	U	U
79-20-9	Methyl acetate	11		
75-09-2	Methylene chloride	6.4	U	U
156-60-5	trans-1,2-Dichloroethene	6.4	U	U
1634-04-4	Methyl tert-Butyl ether	6.4	U	U
75-34-3	1,1-Dichloroethane	6.4	U	U
156-59-2	cis-1,2-Dichloroethene	6.4	U	U
78-93-3	2-Butanone	13	U	U
74-97-5	Bromochloromethane	6.4	U	U
67-66-3	Chloroform	6.4	U	U
71-55-6	1,1,1-Trichloroethane	6.4	U	U
110-82-7	Cyclohexane	6.4	U	U
56-23-5	Carbon Tetrachloride	6.4	U	U
71-43-2	Benzene	6.4	U	U
107-06-2	1,2-Dichloroethane	6.4	U	U
123-91-1	1,4-Dioxane	130	NR	

SOM01.1 (5/2005)

9/17/07

00126

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g

Lab File ID: VE004630.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.4	UJK
108-87-2	Methylcyclohexane		6.4	U
78-87-5	1,2-Dichloropropane		6.4	U
75-27-4	Bromodichloromethane		6.4	U
10061-01-5	cis-1,3-Dichloropropene		6.4	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		6.4	U
10061-02-6	trans-1,3-Dichloropropene		6.4	U
79-00-5	1,1,2-Trichloroethane		6.4	U
127-18-4	Tetrachloroethene		6.4	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.4	U
106-93-4	1,2-Dibromoethane		6.4	U
108-90-7	Chlorobenzene		6.4	U
100-41-4	Ethylbenzene		6.4	U
95-47-6	o-Xylene		6.4	U
179601-23-1	m,p-Xylene		6.4	
100-42-5	Styrene		6.4	U
75-25-2	Bromoform		6.4	U
98-82-8	Isopropylbenzene		6.4	U
79-34-5	1,1,2,2-Tetrachloroethane		6.4	U
541-73-1	1,3-Dichlorobenzene		6.4	U
106-46-7	1,4-Dichlorobenzene		6.4	U
95-50-1	1,2-Dichlorobenzene		6.4	U
96-12-8	1,2-Dibromo-3-chloropropane		6.4	U
120-82-1	1,2,4-Trichlorobenzene		6.4	U
87-61-6	1,2,3-Trichlorobenzene		6.4	U

SOM01.1 (5/2005)

9/17/07

: 00127

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____

SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g

Lab File ID: VE004630.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	24	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

: 00128

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	7.1	U	U
74-87-3	Chloromethane	7.1	U	U
75-01-4	Vinyl Chloride	7.1	U	U
74-83-9	Bromomethane	7.1	U	U
75-00-3	Chloroethane	7.1	U	U
75-69-4	Trichlorofluoromethane	7.1	U	U
75-35-4	1,1-Dichloroethene	7.1	U	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.1	U	U
67-64-1	Acetone	14	UJK	UJK
75-15-0	Carbon disulfide	7.1	U	U
79-20-9	Methyl acetate	7.1	U	U
75-09-2	Methylene chloride	7.1	U	U
156-60-5	trans-1,2-Dichloroethene	7.1	U	U
1634-04-4	Methyl tert-Butyl ether	7.1	U	U
75-34-3	1,1-Dichloroethane	7.1	U	U
156-59-2	cis-1,2-Dichloroethene	7.1	U	U
78-93-3	2-Butanone	15		
74-97-5	Bromochloromethane	7.1	U	U
67-66-3	Chloroform	7.1	U	U
71-55-6	1,1,1-Trichloroethane	7.1	U	U
110-82-7	Cyclohexane	7.1	U	U
56-23-5	Carbon Tetrachloride	7.1	U	U
71-43-2	Benzene	7.1	U	U
107-06-2	1,2-Dichloroethane	7.1	U	U
123-91-1	1,4-Dioxane	140	XR	XR

9/17/07

SOM01.1 (5/2005)

: 00145

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
79-01-6	Trichloroethene	7.1	UJK
108-87-2	Methylcyclohexane	7.1	U
78-87-5	1,2-Dichloropropane	7.1	U
75-27-4	Bromodichloromethane	7.1	U
10061-01-5	cis-1,3-Dichloropropene	7.1	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	7.1	U
10061-02-6	trans-1,3-Dichloropropene	7.1	U
79-00-5	1,1,2-Trichloroethane	7.1	U
127-18-4	Tetrachloroethene	7.1	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	7.1	U
106-93-4	1,2-Dibromoethane	7.1	U
108-90-7	Chlorobenzene	7.1	U
100-41-4	Ethylbenzene	7.1	U
95-47-6	o-Xylene	7.1	U
179601-23-1	m,p-Xylene	7.1	U
100-42-5	Styrene	7.1	U
75-25-2	Bromoform	7.1	U
98-82-8	Isopropylbenzene	7.1	U
79-34-5	1,1,2,2-Tetrachloroethane	7.1	U
541-73-1	1,3-Dichlorobenzene	7.1	U
106-46-7	1,4-Dichlorobenzene	7.1	U
95-50-1	1,2-Dichlorobenzene	7.1	U
96-12-8	1,2-Dibromo-3-chloropropane	7.1	U
120-82-1	1,2,4-Trichlorobenzene	7.1	U
87-61-6	1,2,3-Trichlorobenzene	7.1	U

SOM01.1 (5/2005)

9/17/07

: 00146

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 2.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00147

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g

Lab File ID: VE004631.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
75-71-8	Dichlorodifluoromethane	9.4	U
74-87-3	Chloromethane	9.4	U
75-01-4	Vinyl Chloride	9.4	U
74-83-9	Bromomethane	9.4	U
75-00-3	Chloroethane	9.4	U
75-69-4	Trichlorofluoromethane	9.4	U
75-35-4	1,1-Dichloroethene	9.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	9.4	U
67-64-1	Acetone	19	U
75-15-0	Carbon disulfide	9.4	U
79-20-9	Methyl acetate	9.4	U
75-09-2	Methylene chloride	9.4	U
156-60-5	trans-1,2-Dichloroethene	9.4	U
1634-04-4	Methyl tert-Butyl ether	9.4	U
75-34-3	1,1-Dichloroethane	9.4	U
156-59-2	cis-1,2-Dichloroethene	9.4	U
78-93-3	2-Butanone	19	U
74-97-5	Bromochloromethane	9.4	U
67-66-3	Chloroform	9.4	U
71-55-6	1,1,1-Trichloroethane	9.4	U
110-82-7	Cyclohexane	9.4	U
56-23-5	Carbon Tetrachloride	9.4	U
71-43-2	Benzene	9.4	U
107-06-2	1,2-Dichloroethane	9.4	U
123-91-1	1,4-Dioxane	190	NR

9/17/07

SOM01.1 (5/2005)

: 00162

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g

Lab File ID: VE004631.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
79-01-6	Trichloroethene	9.4	U
108-87-2	Methylcyclohexane	9.4	U
78-87-5	1,2-Dichloropropane	9.4	U
75-27-4	Bromodichloromethane	9.4	U
10061-01-5	cis-1,3-Dichloropropene	9.4	U
108-10-1	4-Methyl-2-pentanone	19	U
108-88-3	Toluene	9.4	U
10061-02-6	trans-1,3-Dichloropropene	9.4	U
79-00-5	1,1,2-Trichloroethane	9.4	U
127-18-4	Tetrachloroethene	9.4	U
591-78-6	2-Hexanone	19	U
124-48-1	Dibromochloromethane	9.4	U
106-93-4	1,2-Dibromoethane	9.4	U
108-90-7	Chlorobenzene	9.4	U
100-41-4	Ethylbenzene	9.4	U
95-47-6	o-Xylene	9.4	U
179601-23-1	m,p-Xylene	9.4	U
100-42-5	Styrene	9.4	U
75-25-2	Bromoform	9.4	U
98-82-8	Isopropylbenzene	9.4	U
79-34-5	1,1,2,2-Tetrachloroethane	9.4	U
541-73-1	1,3-Dichlorobenzene	9.4	U
106-46-7	1,4-Dichlorobenzene	9.4	U
95-50-1	1,2-Dichlorobenzene	9.4	U
96-12-8	1,2-Dibromo-3-chloropropane	9.4	U
120-82-1	1,2,4-Trichlorobenzene	9.4	U
87-61-6	1,2,3-Trichlorobenzene	9.4	U

SOM01.1 (5/2005)

9/17/07

: 00163

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g Lab File ID: VE004631.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 2.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00164

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g

Lab File ID: VE004627.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	6.3		UJK
74-87-3	Chloromethane	6.3		U
75-01-4	Vinyl Chloride	6.3		U
74-83-9	Bromomethane	6.3		U
75-00-3	Chloroethane	6.3		U
75-69-4	Trichlorofluoromethane	6.3		U
75-35-4	1,1-Dichloroethene	6.3		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.3		U
67-64-1	Acetone	22		JH
75-15-0	Carbon disulfide	6.3		UJK
79-20-9	Methyl acetate	16		JH
75-09-2	Methylene chloride	12		JH
156-60-5	trans-1,2-Dichloroethene	6.3		UJK
1634-04-4	Methyl tert-Butyl ether	6.3		U
75-34-3	1,1-Dichloroethane	6.3		U
156-59-2	cis-1,2-Dichloroethene	6.3		U
78-93-3	2-Butanone	23		JH
74-97-5	Bromochloromethane	6.3		UJK
67-66-3	Chloroform	6.3		U
71-55-6	1,1,1-Trichloroethane	6.3		U
110-82-7	Cyclohexane	6.3		U
56-23-5	Carbon Tetrachloride	6.3		U
71-43-2	Benzene	6.3		U
107-06-2	1,2-Dichloroethane	6.3		U
123-91-1	1,4-Dioxane	130		OR

9/17/07

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g

Lab File ID: VE004627.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene	6.3		UJK
108-87-2	Methylcyclohexane	6.3		U
78-87-5	1,2-Dichloropropane	6.3		U
75-27-4	Bromodichloromethane	6.3		U
10061-01-5	cis-1,3-Dichloropropene	6.3		U
108-10-1	4-Methyl-2-pentanone	13		U
108-88-3	Toluene	6.3		U
10061-02-6	trans-1,3-Dichloropropene	6.3		U
79-00-5	1,1,2-Trichloroethane	6.3		U
127-18-4	Tetrachloroethene	6.3		U
591-78-6	2-Hexanone	13		U
124-48-1	Dibromochloromethane	6.3		U
106-93-4	1,2-Dibromoethane	6.3		U
108-90-7	Chlorobenzene	6.3		U
100-41-4	Ethylbenzene	6.3		U
95-47-6	o-Xylene	6.3		U
179601-23-1	m,p-Xylene	6.3		U
100-42-5	Styrene	6.3		U
75-25-2	Bromoform	6.3		U
98-82-8	Isopropylbenzene	6.3		U
79-34-5	1,1,2,2-Tetrachloroethane	6.3		U
541-73-1	1,3-Dichlorobenzene	6.3		U
106-46-7	1,4-Dichlorobenzene	6.3		U
95-50-1	1,2-Dichlorobenzene	6.3		U
96-12-8	1,2-Dibromo-3-chloropropane	6.3		U
120-82-1	1,2,4-Trichlorobenzene	6.3		U
87-61-6	1,2,3-Trichlorobenzene	6.3		U

9/17/07

SOM01.1 (5/2005)

: 00180

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g Lab File ID: VE004627.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0


Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	71	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)


9/17/07

: 00181

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07RE

Sample wt/vol: 3.88 (g/mL) g

Lab File ID: VE004632.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane		6.5	U
74-87-3	Chloromethane		6.5	U
75-01-4	Vinyl Chloride		6.5	U
74-83-9	Bromomethane		6.5	U
75-00-3	Chloroethane		6.5	U
75-69-4	Trichlorofluoromethane		6.5	U
75-35-4	1,1-Dichloroethene		6.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		6.5	U
67-64-1	Acetone		23	
75-15-0	Carbon disulfide		6.5	U
79-20-9	Methyl acetate		31	
75-09-2	Methylene chloride		13	
156-60-5	trans-1,2-Dichloroethene		6.5	U
1634-04-4	Methyl tert-Butyl ether		6.5	U
75-34-3	1,1-Dichloroethane		6.5	U
156-59-2	cis-1,2-Dichloroethene		6.5	U
78-93-3	2-Butanone		38	
74-97-5	Bromochloromethane		6.5	U
67-66-3	Chloroform		6.5	U
71-55-6	1,1,1-Trichloroethane		6.5	U
110-82-7	Cyclohexane		6.5	U
56-23-5	Carbon Tetrachloride		6.5	U
71-43-2	Benzene		6.5	U
107-06-2	1,2-Dichloroethane		6.5	U
123-91-1	1,4-Dioxane		130	NR

9/17/07

SOM01.1 (5/2005)

: 00198

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07RE

Sample wt/vol: 3.88 (g/mL) g

Lab File ID: VE004632.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.5	U
108-87-2	Methylcyclohexane		6.5	U
78-87-5	1,2-Dichloropropane		6.5	U
75-27-4	Bromodichloromethane		6.5	U
10061-01-5	cis-1,3-Dichloropropene		6.5	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		6.5	U
10061-02-6	trans-1,3-Dichloropropene		6.5	U
79-00-5	1,1,2-Trichloroethane		6.5	U
127-18-4	Tetrachloroethene		6.5	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.5	U
106-93-4	1,2-Dibromoethane		6.5	U
108-90-7	Chlorobenzene		6.5	U
100-41-4	Ethylbenzene		6.5	U
95-47-6	o-Xylene		6.5	U
179601-23-1	m,p-Xylene		8.5	
100-42-5	Styrene		6.5	U
75-25-2	Bromoform		6.5	U
98-82-8	Isopropylbenzene		6.5	U
79-34-5	1,1,2,2-Tetrachloroethane		6.5	U
541-73-1	1,3-Dichlorobenzene		6.5	U
106-46-7	1,4-Dichlorobenzene		6.5	U
95-50-1	1,2-Dichlorobenzene		6.5	U
96-12-8	1,2-Dibromo-3-chloropropane		6.5	U
120-82-1	1,2,4-Trichlorobenzene		6.5	U
87-61-6	1,2,3-Trichlorobenzene		6.5	U

SOM01.1 (5/2005)

R
9/17/07

: 00199

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 3.88 (g/mL) g Lab File ID: VE004632.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	190	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

R
9/17/07

: 00200

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	Dichlorodifluoromethane		5.0	U
74-87-3	Chloromethane		5.0	U
75-01-4	Vinyl Chloride		5.0	U
74-83-9	Bromomethane		5.0	U
75-00-3	Chloroethane		5.0	U
75-69-4	Trichlorofluoromethane		5.0	U
75-35-4	1,1-Dichloroethene		5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		5.0	U
67-64-1	Acetone		10	U
75-15-0	Carbon disulfide		5.0	U
79-20-9	Methyl acetate		5.0	U
75-09-2	Methylene chloride		5.0	U
156-60-5	trans-1,2-Dichloroethene		5.0	U
1634-04-4	Methyl tert-Butyl ether		5.0	U
75-34-3	1,1-Dichloroethane		5.0	U
156-59-2	cis-1,2-Dichloroethene		5.0	U
78-93-3	2-Butanone		10	U
74-97-5	Bromochloromethane		5.0	U
67-66-3	Chloroform		5.0	U
71-55-6	1,1,1-Trichloroethane		5.0	U
110-82-7	Cyclohexane		5.0	U
56-23-5	Carbon Tetrachloride		5.0	U
71-43-2	Benzene		5.0	U
107-06-2	1,2-Dichloroethane		5.0	U
123-91-1	1,4-Dioxane		100	PR

9/17/07

SOM01.1 (5/2005)

: 00215

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6	Trichloroethene		5.0	U
108-87-2	Methylcyclohexane		5.0	U
78-87-5	1,2-Dichloropropane		5.0	U
75-27-4	Bromodichloromethane		5.0	U
10061-01-5	cis-1,3-Dichloropropene		5.0	U
108-10-1	4-Methyl-2-pentanone		10	U
108-88-3	Toluene		5.0	U
10061-02-6	trans-1,3-Dichloropropene		5.0	U
79-00-5	1,1,2-Trichloroethane		5.0	U
127-18-4	Tetrachloroethene		5.0	U
591-78-6	2-Hexanone		10	U
124-48-1	Dibromochloromethane		5.0	U
106-93-4	1,2-Dibromoethane		5.0	U
108-90-7	Chlorobenzene		5.0	U
100-41-4	Ethylbenzene		5.0	U
95-47-6	o-Xylene		5.0	U
179601-23-1	m,p-Xylene		5.0	U
100-42-5	Styrene		5.0	U
75-25-2	Bromoform		5.0	U
98-82-8	Isopropylbenzene		5.0	U
79-34-5	1,1,2,2-Tetrachloroethane		5.0	U
541-73-1	1,3-Dichlorobenzene		5.0	U
106-46-7	1,4-Dichlorobenzene		5.0	U
95-50-1	1,2-Dichlorobenzene		5.0	U
96-12-8	1,2-Dibromo-3-chloropropane		5.0	U
120-82-1	1,2,4-Trichlorobenzene		5.0	U
87-61-6	1,2,3-Trichlorobenzene		5.0	U

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9/17/07

SOM01.1 (5/2005)

: 00215

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____

SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. _____

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

Purge Volume: 5 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

1EPA-designated Registry Number.

SOM01.1 (5/2005)

[Signature]
9/17/07

: 00217

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007874.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)


Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	Dichlorodifluoromethane		5.0	U
74-87-3	Chloromethane		5.0	U
75-01-4	Vinyl Chloride		5.0	U
74-83-9	Bromomethane		5.0	U
75-00-3	Chloroethane		5.0	U
75-69-4	Trichlorofluoromethane		5.0	U
75-35-4	1,1-Dichloroethene		5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		5.0	U
67-64-1	Acetone		10	U
75-15-0	Carbon disulfide		5.0	U
79-20-9	Methyl acetate		5.0	U
75-09-2	Methylene chloride		5.0	U
156-60-5	trans-1,2-Dichloroethene		5.0	U
1634-04-4	Methyl tert-Butyl ether		5.0	U
75-34-3	1,1-Dichloroethane		5.0	U
156-59-2	cis-1,2-Dichloroethene		5.0	U
78-93-3	2-Butanone		10	U
74-97-5	Bromochloromethane		5.0	U
67-66-3	Chloroform		5.0	U
71-55-6	1,1,1-Trichloroethane		5.0	U
110-82-7	Cyclohexane		5.0	U
56-23-5	Carbon Tetrachloride		5.0	U
71-43-2	Benzene		5.0	U
107-06-2	1,2-Dichloroethane		5.0	U
123-91-1	1,4-Dioxane		100	UR


9/17/07 SOM01.1 (5/2005)

: 00224

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007874.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6	Trichloroethene		5.0	U
108-87-2	Methylcyclohexane		5.0	U
78-87-5	1,2-Dichloropropane		5.0	U
75-27-4	Bromodichloromethane		5.0	U
10061-01-5	cis-1,3-Dichloropropene		5.0	U
108-10-1	4-Methyl-2-pentanone		10	U
108-88-3	Toluene		5.0	U
10061-02-6	trans-1,3-Dichloropropene		5.0	U
79-00-5	1,1,2-Trichloroethane		5.0	U
127-18-4	Tetrachloroethene		5.0	U
591-78-6	2-Hexanone		10	U
124-48-1	Dibromochloromethane		5.0	U
106-93-4	1,2-Dibromoethane		5.0	U
108-90-7	Chlorobenzene		5.0	U
100-41-4	Ethylbenzene		5.0	U
95-47-6	o-Xylene		5.0	U
179601-23-1	m,p-Xylene		5.0	U
100-42-5	Styrene		5.0	U
75-25-2	Bromoform		5.0	U
98-82-8	Isopropylbenzene		5.0	U
79-34-5	1,1,2,2-Tetrachloroethane		5.0	U
541-73-1	1,3-Dichlorobenzene		5.0	U
106-46-7	1,4-Dichlorobenzene		5.0	U
95-50-1	1,2-Dichlorobenzene		5.0	U
96-12-8	1,2-Dibromo-3-chloropropane		5.0	U
120-82-1	1,2,4-Trichlorobenzene		5.0	U
87-61-6	1,2,3-Trichlorobenzene		5.0	U

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9/17/07

SOM01.1 (5/2005)

: 00225

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM

Case No.: 36737

Mod. Ref No.: _____

SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007874.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. _____

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

Purge Volume: 5 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

: 00226

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47

Noto Repat

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

9/12/07 : 00820

SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis (2-ethylhexyl) phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹ Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

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9/18/09 : 00821

Not to Repeat

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007
GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3806-59-5	1,3-Cyclooctadiene, (Z,Z)-	14.15	280	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	240	J

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00822

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

: 00834

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

9/18/07 : 00835

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3806-59-5	1,3-Cyclooctadiene, (Z,Z)-	12.15	250	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	250	J

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00836

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B48

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-04

Sample wt/vol: 30.2 (g/mL) g Lab File ID: BA033500.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U



: 00846

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B48

Repat

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-04

Sample wt/vol: 30.2 (g/mL) g Lab File ID: BA033500.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

9/18/07 : 00847

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: SOIL Lab Sample ID: Y4048-04
(SOIL/SED/WATER)
Sample wt/vol: 30.2 (g/mL) g Lab File ID: BA033500.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007
GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown3.39	3.39	280	JN
2.		unknown3.79	3.79	190	JN
3.	121080-73-7	Spiro[cyclopropane-1,2-[6.7]d	14.15	310	JN
4.		unknown17.39	17.39	120	JN
5.	62338-42-5	Cyclobutene, 4,4-dimethyl-1-(17.77	100	JN
7.		unknown19.13	19.13	130	JN
8.	29812-79-1	Hydroxylamine, O-decyl-	19.38	100	JN
9.	74744-36-8	1-Dodecen-3-yne	19.56	150	JN
0.	54766-91-5	Bicyclo[10.1.0]tridec-1-ene	19.58	84	JN
1.		unknown20.01	20.01	940	JN
2.	42217-02-7	1-Chloroeicosane	20.75	330	JN
3.		unknown21.66	21.66	310	JN
4.		unknown21.78	21.78	230	JN
5.	1000282-04-8	Methoxyacetic acid, 2-tetradec	22.12	410	JN
6.	62016-79-9	Heptacosane, 1-chloro-	22.91	120	JN
7.	111-02-4	2,6,10,14,18,22-Tetracosahexa	23.09	240	JN
1.		unknown25.41	25.41	110	JN
4.		unknown28.33	28.33	180	J
5.		unknown30.40	30.40	250	J
6.		unknown30.42	30.42	340	J
7.		unknown30.44	30.44	1700	J
8.		unknown30.87	30.87	85	J
9.		unknown30.91	30.91	180	J
0.		unknown30.93	30.93	220	J
		unknown31.32	31.32	310	J
2.		unknown31.71	31.71	96	J
2	E966796	Total Alkanes	N/A	2076	J

2EPA-designated Registry Number

R
9/18/07

SOM01.1 (5/2005)

: 00848

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B49

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH


% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UTK
100-02-7	4-Nitrophenol	330	U

 : 00888

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B49

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07 : 00889

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-05
Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007
GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	87-44-5	Caryophyllene	11.77	290	JN
02.	1700-10-3	1,3-Cyclooctadiene	14.16	4100	JN
03.	42217-02-7	1-Chloroeicosane	20.75	210	JN
05.	7683-64-9	Squalene	23.09	270	JN
09.		unknown28.91	28.91	100	JN
10.		unknown29.05	29.05	190	JN
11.		unknown29.08	29.08	76	JN
12.	81038-44-0	3-Bromo-4-hydroxy-5-methoxyphen	30.04	300	JN
13.	1000159-38-5	Cycloheptane, 4-methylene-1-met	30.06	290	JN
14.		unknown30.07	30.07	250	JN
15.		unknown30.35	30.35	82	JN
16.	25246-27-9	1H-Cycloprop[e]azulene, decahyd	30.39	100	JN
17.	98640-10-9	3a,6-Methano-3aH-indene, 2,3,4,	31.31	110	JN
18.		unknown31.71	31.71	77	JN
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	2451	JN

²EPA-designated Registry Number.

9/18/07

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50

Not to Report

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g

Lab File ID: BA033501.D

Level: (LOW/MED) LOW

Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N

Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL)

Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis (2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis (1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis (2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	340	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	340	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	340	UJK
100-02-7	4-Nitrophenol	340	U

9/18/07 : 00917

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033501.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	340	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	340	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07

00918

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033501.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
02.		unknown3.79	3.79	170	JN
03.	498-02-2	Ethanone, 1-(4-hydroxy-3-methox	12.34	100	JN
05.	75679-47-9	2-Methoxybenzoic acid, benzyl e	17.11	110	JN
07.		unknown19.43	19.43	84	JN
08.	4549-12-6	1-Naphthalenepropanol, .alpha.-	19.44	82	JN
11.		unknown22.92	22.92	350	JN
12.	1000108-92-4	Farnesol isomer a	23.09	320	JN
13.	14811-95-1	1,19-Eicosadiene	23.30	970	JN
15.	822-23-1	Acetic acid, octadecyl ester	23.92	2600	JN
16.	638-66-4	Octadecanal	25.44	750	JN
18.	1000283-04-0	Pentafluoropropionic acid, unde	26.32	280	JN
19.	645-10-3	1,7-Dimethyl-4-(1-methylethyl)c	26.33	230	JN
20.	77899-10-6	(Z)-14-Tricosenyl formate	28.50	400	JN
21.		unknown28.51	28.51	150	JN
23.	83-46-5	.beta.-Sitosterol	30.39	190	JN
24.		unknown30.4	30.40	630	JN
25.		unknown30.42	30.42	1300	J
26.		unknown30.43	30.43	430	J
27.		unknown30.44	30.44	400	J
28.		unknown30.45	30.45	320	J
29.		unknown30.74	30.74	400	J
30.		unknown30.75	30.75	600	J
		unknown30.76	30.76	860	J
32.		unknown31.44	31.44	91	J
33.		unknown31.45	31.45	130	J
34.		unknown31.46	31.46	74	J
35.		unknown31.47	31.47	110	J
36.	1000194-64-2	4,4,6a,6b,8a,11,12,14b-Octameth	31.84	6900	JN
37.		unknown31.85	31.85	1600	JN
2	E966796	Total Alkanes	N/A	6919	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/18/07

: 00919

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	340	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	340	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	340	UJK
100-02-7	4-Nitrophenol	340	U

: 00967

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	340	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	340	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis (2-ethylhexyl) phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹ Cannot be separated from Diphenylamine

9/18/07 : 00568

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.		unknown2.14	2.14	210	JN
07.	56554-89-3	14-Octadecenal	20.56	940	JN
08.	67860-04-2	Oxirane, heptadecyl-	21.74	460	JN
11.		unknown22.21	22.21	130	JN
12.	1454-84-8	1-Nonadecanol	22.28	120	JN
13.	638-66-4	Octadecanal	23.29	810	JN
16.	83-46-5	.beta.-Sitosterol	24.14	270	JN
17.	83-47-6	.gamma.-Sitosterol	24.15	300	JN
18.	1000210-86-9	17-(1,5-Dimethylhexyl)-10,13-di	24.16	150	JN
19.	55103-80-5	Pregn-5-en-3-ol, 21-bromo-20-me	24.17	160	JN
20.		unknown24.18	24.18	79	JN
21.	1000188-66-5	2(1H)Naphthalenone, 3,5,6,7,8,8	24.27	1400	JN
22.		unknown24.66	24.66	79	JN
23.		unknown24.67	24.67	89	JN
24.		unknown24.81	24.81	5000	JN
25.		unknown25.17	25.17	390	JN
26.	1058-61-3	Stigmast-4-en-3-one	25.57	610	JN
27.		unknown26.09	26.09	230	JN
28.	20475-86-9	Urs-12-en-24-oic acid, 3-oxo-,	26.15	220	JN
29.					
30.					
2	E966796	Total Alkanes	N/A	5055	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00969

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-07

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033507.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy)methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

 : 01004

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51

Not to Report

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07

Sample wt/vol: 30.1 (g/mL) g

Lab File ID: BA033507.D

Level: (LOW/MED) LOW

Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N

Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Noto Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033507.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007
GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	121080-73-7	Spiro[cyclopropane-1,2-[6.7]dia	14.16	440	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	270	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 01006

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51RE

Report

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g

Lab File ID: BB039471.D

Level: (LOW/MED) LOW

Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N

Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy)methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

01018

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039471.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis (2-ethylhexyl) phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

E

9/18/07

: 01019

1K - FORM I SV-TIC Report
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039471.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	242794-76-9	Bicyclo[5.2.0]nonane, 2-methyle	9.78	94	JN
02.	33622-26-3	1-Decen-3-yne	12.15	330	JN
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	320	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

: 01020

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B53

Report

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL

Lab File ID: BB039481.D

Level: (LOW/MED)

Extraction: (Type) CONT

% Moisture: Decanted: (Y/N)

Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL)

Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0

Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	Bis(2-chloroethyl) ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-Oxybis(1-chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	Bis(2-chloroethoxy) methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	5.0	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	5.0	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U

01033

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B53

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL Lab File ID: BB039481.D

Level: (LOW/MED) Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/L	Q
132-64-9	Dibenzofuran		5.0	U
121-14-2	2,4-Dinitrotoluene		5.0	U
84-66-2	Diethylphthalate		5.0	U
86-73-7	Fluorene		5.0	U
7005-72-3	4-Chlorophenyl-phenylether		5.0	U
100-01-6	4-Nitroaniline		10	U
534-52-1	4,6-Dinitro-2-methylphenol		10	U
86-30-6	N-Nitrosodiphenylamine ¹		5.0	U
95-94-3	1,2,4,5-Tetrachlorobenzene		5.0	U
101-55-3	4-Bromophenyl-phenylether		5.0	U
118-74-1	Hexachlorobenzene		5.0	U
1912-24-9	Atrazine		5.0	U
87-86-5	Pentachlorophenol		10	U
85-01-8	Phenanthrene		5.0	U
120-12-7	Anthracene		5.0	U
86-74-8	Carbazole		5.0	U
84-74-2	Di-n-butylphthalate		5.0	U
206-44-0	Fluoranthene		5.0	U
129-00-0	Pyrene		5.0	U
85-68-7	Butylbenzylphthalate		5.0	U
91-94-1	3,3'-Dichlorobenzidine		5.0	U
56-55-3	Benzo(a)anthracene		5.0	U
218-01-9	Chrysene		5.0	U
117-81-7	Bis(2-ethylhexyl)phthalate		5.0	U
117-84-0	Di-n-octylphthalate		5.0	U
205-99-2	Benzo(b)fluoranthene		5.0	U
207-08-9	Benzo(k)fluoranthene		5.0	U
50-32-8	Benzo(a)pyrene		5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene		5.0	U
53-70-3	Dibenzo(a,h)anthracene		5.0	U
191-24-2	Benzo(g,h,i)perylene		5.0	U
58-90-2	2,3,4,6-Tetrachlorophenol		5.0	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

R

9/18/07

: 01034

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL Lab File ID: BB039481.D

Level: (TRACE or LOW/MED) Extraction: (Type) CONT

% Moisture: Decanted: (Y/N): Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3744-02-3	4-Penten-2-one, 4-methyl-	1.68	12	JN
02.	141-79-7	3-Penten-2-one, 4-methyl-	2.15	34	A
03.	123-42-2	2-Pentanone, 4-hydroxy-4-methyl	2.66	130	AB
04.		unknown2.91	2.91	5.1	JN
05.		unknown8.36	8.36	11	JN
06.	2240-47-3	Phosphine imide, P,P,P-tripheny	18.74	3.6	JN
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A		

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 01035

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample wt/vol: 30.3 (g/mL) g Lab File ID: P7016513.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.34 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		8.1	
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U

R
9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 30.3 (g/mL) g

Lab File ID: P7016516.D

% Moisture: 1 Decanted: (Y/N) N

Date Received: 08/18/2007

Extraction: (Type) SOXH

Date Extracted: 08/27/2007

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 08/29/2007

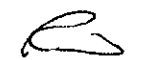
Injection Volume: 1.0 (uL) GPC Factor: 2.0

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.87

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		3.3	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U


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1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 30.2 (g/mL) g

Lab File ID: P7016517.D

% Moisture: 1 Decanted: (Y/N) N

Date Received: 08/18/2007

Extraction: (Type) SOXH

Date Extracted: 08/27/2007

Concentrated Extract Volume: 5000 (uL)

Date Analyzed: 08/29/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.95

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		3.3	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U


9/18/07


1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06
Sample wt/vol: 30.2 (g/mL) g Lab File ID: P7016518.D
% Moisture: 2 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.87 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		3.3	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U


9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample wt/vol: 30.1 (g/mL) g Lab File ID: P7016519.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.30 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I.		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		7.6	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U

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9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-08
Sample wt/vol: 1000 (g/mL) mL Lab File ID: P7016522.D
% Moisture: Decanted: (Y/N) Date Received: 08/18/2007
Extraction: (Type) CONT Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U

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9/18/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B47

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample 30.0 (g/mL) g Lab File ID: P5015714.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SOXH) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 7.34 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B48

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-04
Sample 30.2 (g/mL) g Lab File ID: P5015715.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SONC) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 6.87 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-05
Sample 30.2 (g/mL) g Lab File ID: P5015716.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SONC) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 6.95 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B50

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06
Sample 30.2 (g/mL) g Lab File ID: P5015717.D
% Moisture: 2 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SONC Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 6.87 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B51

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample 30.1 (g/mL) g Lab File ID: P5015718.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SONC Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 7.15 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U


9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Chemtech

Contract: EPW05037

Lab Code: CHEM

Case No.: 36737

Mod. Ref No.:

SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: Y4048-08

Sample 1000 (g/mL) mL

Lab File ID: P5015789.D

% Moisture: Decanted: (Y/N)

Date Received: 08/18/2007

Extraction: (Type SEPF

Date Extracted: 08/22/2007

Concentrated Extract Volume: 10000 (uL

Date Analyzed: 08/30/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0

Dilution Factor: 1.0

GPC N pH:

Sulfur Cleanup: (Y/N) N

Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
37324-23-5	Aroclor-1262	1.0	U
11100-14-4	Aroclor-1268	1.0	U

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9/19/07



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RADIATION AND INDOOR AIR
National Air and Radiation Environmental Laboratory
540 South Morris Avenue, Montgomery, AL 36115-2601
(334) 270-3400

December 7, 2007

MEMORANDUM

SUBJECT: Radiochemical Results for
Grandview Mine Samples

FROM: John Griggs, Chief *John Griggs*
Monitoring and Analytical Services Branch

TO: Earl Liverman, On-Scene Coordinator
Region 10

Attached is a data package reported electronically for gamma analysis of samples collected from the Grandview Mine site in Metaline Falls, WA. The samples constitute NAREL batch number 0700026.

Radiochemical analyses usually require the subtraction of an instrument background measurement from a gross sample measurement. Both values are positive, but when the sample activity is low, random variations in the two measurements can cause the gross value to be less than the background, resulting in a measured activity less than zero. Although negative activities have no physical significance, they do have statistical significance, as for example in the evaluation of trends or the comparison of two groups of samples.

For all analyses except gamma spectroscopy, it is the policy of NAREL to report results as generated, whether positive, negative, or zero, together with the 2-sigma measurement uncertainty and a sample-specific estimate of the minimum detectable concentration (MDC). The activity, uncertainty, and MDC are given in the same units. The activity and 2-sigma uncertainty for a radionuclide measured by gamma spectroscopy are reported only if the nuclide is detected; so, the results of gamma analyses are never zero or negative. Nuclides that are not detected do not appear in the report, with the exception of Ba-140, Cs-137, I-131, K-40, Ra-226, and Ra-228. If one of these six nuclides is undetected, NAREL reports it as "Not Detected," or "ND," and provides a sample-specific estimate of the MDC.

Specific information concerning all aspects of the radiological analysis of the samples is contained in the batch case narratives of the data packages. If you have any questions concerning the analytical results, please contact me at (334)270-3450.

Attachments

cc: Rick Poeton, Region 10, w/o attachments
Ron Fraass, NAREL

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY
GAMMA ANALYSES**

REPORT OF SAMPLE DELIVERY GROUP #0700026

Project: Grandview Mine, Metaline Falls, WA
Analysis Procedure: Gamma Spectrometry
Report ID: 0700026-GAMMA
Report Type: Original
Date Reported: 09/12/2007
Total Pages in Report: 15

SAMPLES

NAREL Sample #	Client Sample ID	Type	Matrix	Date Collected	Date Received
A7.05294Z	J8B47	SAM	SOIL	08/16/2007	08/20/2007
A7.05295A	J8B48	SAM	SOIL	08/16/2007	08/20/2007
A7.05296B	J8B49	SAM	SOIL	08/16/2007	08/20/2007
A7.05297C	J8B50	SAM	SOIL	08/16/2007	08/20/2007
A7.05298D	J8B52	SAM	SOIL	08/16/2007	08/20/2007

EXCEPTIONS

1. Packaging and Shipping - No problems were observed.
2. Documentation - No problems were observed.
3. Sample Preparation - No problems were encountered.
4. Analysis - No problems were encountered.
5. Holding Times - All holding times were met.

QUALITY CONTROL

1. QC samples - All QC analysis results met NAREL acceptance criteria.
2. Instruments - Response and background checks for all instruments used in these analyses met NAREL acceptance criteria.

CERTIFICATION

I certify that this data report complies with the terms and conditions of the Quality Assurance Project Plan, except as noted above. Release of the data contained in this report has been authorized by the Chief of the Monitoring and Analytical Services Branch and the NAREL Quality Assurance Manager, or their designees, as verified by the following signatures.

Mary F. Wisdom 11-8-07
Mary F. Wisdom Date
Quality Assurance Manager, NAREL

John G. Griggs 11/29/07
John G. Griggs, Ph.D. Date
Chief, Monitoring and Analytical Services Branch

GENERAL INFORMATION

SAMPLE TYPES

BLD	Blind sample
FBK	Field blank
SAM	Normal sample

ANALYSIS QC TYPES

ANA	Normal analysis
DUP	Laboratory duplicate
LCS	Laboratory control sample (blank spike)
MS	Matrix spike
MSD	Matrix spike duplicate
RBK	Reagent blank

QUALITY INDICATORS

RPD	Relative Percent Difference
%R	Percent Recovery
Z	Number of standard deviations by which a QC measurement differs from the expected value

EVALUATION OF QC ANALYSES

A reagent blank result is considered unacceptable if it is more than 3 standard deviations below zero or more than 3 standard deviations above a predetermined upper control limit. For some analyses NAREL has set the upper control limit at zero. For others the control limit is a small positive number.

NAREL evaluates the results of duplicate and spike analyses using "Z scores." A Z score is the number of standard deviations by which the QC result differs from its ideal value. The score is considered acceptable if its absolute value is not greater than 3.

The Z score for a spiked sample is computed by dividing the difference between the measured value and the target value by the combined standard uncertainty of the difference.

The Z score for a duplicate analysis is computed by dividing the difference between the two measured values by the combined standard uncertainty of the difference. When the precision of paired MS/MSD analyses is evaluated, the native sample activity is subtracted from each measured value and the net concentrations are then converted to total activities before the Z score is computed.

Each standard uncertainty used to compute a Z score includes an additional fixed term to represent sources of measurement error other than counting error. This additional term is not used in the evaluation of reagent blanks.

NAREL reports the "relative percent difference," or RPD, between duplicate results and the "percent recovery," or %R, for spiked analyses, but does not use these values for evaluation.

GENERAL INFORMATION (CONTINUED)

GAMMA ANALYSIS

The reporting format lists the gamma emitters in alphabetical order. The activity and 2-sigma uncertainty for radionuclides measured by gamma spectroscopy are reported only if the nuclide is detected. Nuclides that are not detected do not appear in the report, with the exception of Ba-140, Co-60, Cs-137, I-131, K-40, Ra-226 and Ra-228. If one of these seven nuclides is undetected, NAREL reports it as "Not Detected" or "ND", and provides a sample-specific estimate of the MDC.

Due to potential spectral interferences and other possible problems associated with the determination of the activity of certain radionuclides, the activities for Bi-214, Pb-214, Th-234, Pa-234m, Ra-226, Th-231, and U-235 are subject to greater possible uncertainty than other commonly reported radionuclides. It should be noted that this potential uncertainty is not included in the two-sigma counting uncertainty which is reported with each activity. Although in this report we do provide the calculated activities for these radionuclides, we recommend that the results be used only as a qualitative means of indicating the presence of these radionuclides and not as a quantitative measure of their concentration. The results for these nuclides are not used in the evaluation of quality control samples. Furthermore, because of mutual interference between Ra-226 and U-235, NAREL's gamma analysis software tends to overestimate the amounts of these nuclides whenever both are present in a sample. Lower estimates for Ra-226 activities can be obtained from the reported activities of its decay products, Pb-214 and Bi-214, which are likely to be somewhat less than the Ra-226 activity because of the potential escape of radon gas.

NAREL's gamma spectroscopy software corrects activities and MDCs for decay between collection and analysis, but only up to a limit of ten half-lives. So, if the decay time for a sample is more than ten half-lives of a radionuclide, that nuclide will almost always be undetected and the reported MDC will be meaningless. This is usually a problem only for short-lived radionuclides, such as I-131 and Ba-140, when there is a long delay between collection and analysis.

**U.S.ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

ANALYSIS SUMMARY

Analysis Procedure: NAREL GAM-01
Title: Gamma Spectrometry

NAREL Sample #	QC Type	Preparation Procedure	Date Completed	Prep Batch #	QC Batch #
A7.05294Z	DUP	N/A	08/31/2007	0011825W	0004644Q
A7.05295A		N/A	08/31/2007	0011825W	0004644Q
A7.05296B		N/A	08/31/2007	0011825W	0004644Q
A7.05297C		N/A	08/31/2007	0011825W	0004644Q
A7.05298D		N/A	08/31/2007	0011825W	0004644Q
A7.05298D		N/A	08/31/2007	0011825W	0004644Q
A7.05324M *		N/A	09/06/2007	0011825W	0004644Q
A7.05325N *		N/A	08/30/2007	0011825W	0004644Q
A7.05326P *		N/A	08/31/2007	0011825W	0004644Q
A7.05327Q *		N/A	08/31/2007	0011825W	0004644Q
LCS-00526604U *	LCS	N/A	08/30/2007	0011825W	0004644Q
RBK-00526603T *	RBK	N/A	09/06/2007	0011825W	0004644Q
			09/06/2007	0011825W	0004644Q

* Samples marked with an asterisk are not in this sample delivery group but were analyzed with it for QC purposes.

PREPARATION METHOD(S) USED

Procedure ID	Title

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05294Z	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	3.500e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
08/30/2007 16:26	1000.0	GE07	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		1.5e-01	PCI/GWET	08/16/2007
Bi212	4.37e-01	1.6e-01		PCI/GWET	08/16/2007
Bi214 *	1.55e+00	1.8e-01		PCI/GWET	08/16/2007
Co60	ND		2.3e-02	PCI/GWET	08/16/2007
Cs137	2.81e-01	3.5e-02		PCI/GWET	08/16/2007
I131	ND		5.8e-02	PCI/GWET	08/16/2007
K40	7.93e+00	9.5e-01		PCI/GWET	08/16/2007
Pb212	4.20e-01	5.4e-02		PCI/GWET	08/16/2007
Pb214 *	1.60e+00	1.9e-01		PCI/GWET	08/16/2007
Ra223 *	2.31e-01	6.0e-02		PCI/GWET	08/16/2007
Ra224	3.74e-01	2.6e-01		PCI/GWET	08/16/2007
Ra226 *	3.29e+00	4.6e-01		PCI/GWET	08/16/2007
Ra228	4.34e-01	6.1e-02		PCI/GWET	08/16/2007
Th227	6.57e-02	3.9e-02		PCI/GWET	08/16/2007
Th234 *	1.49e+00	2.6e-01		PCI/GWET	08/16/2007
Tl208	1.39e-01	2.1e-02		PCI/GWET	08/16/2007
U235 *	2.00e-01	2.8e-02		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S.ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05295A	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	3.520e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
08/30/2007 16:26	1000.0	GE08	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		1.7e-01	PCI/GWET	08/16/2007
Bi212	1.24e-01	1.7e-01		PCI/GWET	08/16/2007
Bi214 *	2.02e+00	2.4e-01		PCI/GWET	08/16/2007
Co60	ND		2.6e-02	PCI/GWET	08/16/2007
Cs137	2.35e-01	3.3e-02		PCI/GWET	08/16/2007
I131	ND		6.8e-02	PCI/GWET	08/16/2007
K40	3.45e+00	4.6e-01		PCI/GWET	08/16/2007
Pb212	1.34e-01	3.7e-02		PCI/GWET	08/16/2007
Pb214 *	2.21e+00	2.6e-01		PCI/GWET	08/16/2007
Ra223 *	2.82e-01	8.8e-02		PCI/GWET	08/16/2007
Ra226 *	5.31e+00	7.2e-01		PCI/GWET	08/16/2007
Ra228	1.84e-01	4.7e-02		PCI/GWET	08/16/2007
Th234 *	1.77e+00	2.6e-01		PCI/GWET	08/16/2007
Tl208	4.63e-02	1.6e-02		PCI/GWET	08/16/2007
U235 *	3.30e-01	4.5e-02		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S.ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05296B	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	4.320e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
08/30/2007 16:34	1000.0	GE09	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		1.1e-01	PCI/GWET	08/16/2007
Bi212	8.08e-01	1.4e-01		PCI/GWET	08/16/2007
Bi214 *	5.86e-01	7.1e-02		PCI/GWET	08/16/2007
Co60	ND		1.9e-02	PCI/GWET	08/16/2007
Cs137	ND		1.6e-02	PCI/GWET	08/16/2007
I131	ND		4.4e-02	PCI/GWET	08/16/2007
K40	1.48e+01	1.7e+00		PCI/GWET	08/16/2007
Pb212	7.00e-01	8.3e-02		PCI/GWET	08/16/2007
Pb214 *	6.23e-01	7.4e-02		PCI/GWET	08/16/2007
Ra223 *	1.87e-01	4.4e-02		PCI/GWET	08/16/2007
Ra224	5.57e-01	2.0e-01		PCI/GWET	08/16/2007
Ra226 *	1.20e+00	2.3e-01		PCI/GWET	08/16/2007
Ra228	7.31e-01	9.1e-02		PCI/GWET	08/16/2007
Th234 *	4.63e-01	1.8e-01		PCI/GWET	08/16/2007
Tl208	2.40e-01	3.0e-02		PCI/GWET	08/16/2007
U235 *	7.49e-02	1.4e-02		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05297C	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	3.230e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
08/30/2007 16:34	1000.0	GE11	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		2.0e-01	PCI/GWET	08/16/2007
Bi212	2.29e-01	1.6e-01		PCI/GWET	08/16/2007
Bi214 *	1.16e+01	1.3e+00		PCI/GWET	08/16/2007
Co60	ND		3.3e-02	PCI/GWET	08/16/2007
Cs137	2.00e-01	2.8e-02		PCI/GWET	08/16/2007
I131	ND		8.6e-02	PCI/GWET	08/16/2007
K40	4.60e+00	5.7e-01		PCI/GWET	08/16/2007
Pa231	5.30e-01	2.9e-01		PCI/GWET	08/16/2007
Pb211	7.92e-01	3.4e-01		PCI/GWET	08/16/2007
Pb212	2.57e-01	4.1e-02		PCI/GWET	08/16/2007
Pb214 *	1.22e+01	1.4e+00		PCI/GWET	08/16/2007
Ra223 *	7.63e-01	1.1e-01		PCI/GWET	08/16/2007
Ra224	3.00e-01	3.8e-01		PCI/GWET	08/16/2007
Ra226 *	1.37e+01	1.6e+00		PCI/GWET	08/16/2007
Ra228	2.43e-01	5.2e-02		PCI/GWET	08/16/2007
Rn219	7.38e-01	1.3e-01		PCI/GWET	08/16/2007
Th227	5.64e-01	9.7e-02		PCI/GWET	08/16/2007
Th234 *	1.03e+01	1.2e+00		PCI/GWET	08/16/2007
Tl208	8.16e-02	1.8e-02		PCI/GWET	08/16/2007
U235 *	9.01e-01	1.1e-01		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05298D	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	3.390e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	ANA
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
08/30/2007 16:35	1000.0	GE16	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		9.8e-02	PCI/GWET	08/16/2007
Be7	6.62e-02	5.3e-02		PCI/GWET	08/16/2007
Bi212	1.12e-01	1.1e-01		PCI/GWET	08/16/2007
Bi214 *	2.43e+00	2.8e-01		PCI/GWET	08/16/2007
Co60	ND		1.6e-02	PCI/GWET	08/16/2007
Cs137	2.34e-01	2.9e-02		PCI/GWET	08/16/2007
I131	ND		4.3e-02	PCI/GWET	08/16/2007
K40	3.66e+00	4.4e-01		PCI/GWET	08/16/2007
Pb210 *	3.45e+00	4.5e-01		PCI/GWET	08/16/2007
Pb212	2.07e-01	2.9e-02		PCI/GWET	08/16/2007
Pb214 *	2.70e+00	3.1e-01		PCI/GWET	08/16/2007
Ra223 *	2.15e-01	6.5e-02		PCI/GWET	08/16/2007
Ra224	1.48e-01	1.9e-01		PCI/GWET	08/16/2007
Ra226 *	3.28e+00	4.3e-01		PCI/GWET	08/16/2007
Ra228	2.19e-01	3.3e-02		PCI/GWET	08/16/2007
Rn219	2.24e-01	7.5e-02		PCI/GWET	08/16/2007
Th227	1.37e-01	3.8e-02		PCI/GWET	08/16/2007
Th234 *	2.85e+00	3.4e-01		PCI/GWET	08/16/2007
Tl208	7.17e-02	1.1e-02		PCI/GWET	08/16/2007
U235 *	1.98e-01	2.6e-02		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	A7.05298D	QC batch #:	0004644Q
Matrix:	SOIL	Prep batch #:	0011825W
Sample type:	SAM	Prep procedure:	N/A
Amount analyzed:	3.390e+02 GWET	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	DUP
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
09/05/2007 15:31	1000.0	GE07	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		2.2e-01	PCI/GWET	08/16/2007
Bi214 *	2.48e+00	2.9e-01		PCI/GWET	08/16/2007
Co60	ND		2.5e-02	PCI/GWET	08/16/2007
Cs137	2.32e-01	3.0e-02		PCI/GWET	08/16/2007
I131	ND		1.0e-01	PCI/GWET	08/16/2007
K40	3.72e+00	4.7e-01		PCI/GWET	08/16/2007
Pb212	2.28e-01	3.5e-02		PCI/GWET	08/16/2007
Pb214 *	2.63e+00	3.0e-01		PCI/GWET	08/16/2007
Ra223 *	1.19e-01	6.2e-02		PCI/GWET	08/16/2007
Ra224	3.56e-01	2.9e-01		PCI/GWET	08/16/2007
Ra226 *	2.77e+00	4.3e-01		PCI/GWET	08/16/2007
Ra228	2.11e-01	4.6e-02		PCI/GWET	08/16/2007
Rn219	2.66e-01	8.3e-02		PCI/GWET	08/16/2007
Th227	1.50e-01	4.6e-02		PCI/GWET	08/16/2007
Th234 *	3.28e+00	4.5e-01		PCI/GWET	08/16/2007
Tl208	7.37e-02	1.6e-02		PCI/GWET	08/16/2007
U235 *	1.98e-01	2.9e-02		PCI/GWET	08/16/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	LCS-00526604U	QC batch #:	0004644Q
Matrix:	N/A	Prep batch #:	0011825W
Sample type:	N/A	Prep procedure:	N/A
Amount analyzed:	1.000e+00 SAMP	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	LCS
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
09/05/2007 16:09	1000.0	GE09	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba133	1.25e+02	1.5e+01	1.8e+04	PCI	11/01/2006
Ba140	ND			PCI	11/01/2006
Bi212	1.18e+02	4.1e+01		PCI	11/01/2006
Bi214 *	8.92e+01	1.3e+01		PCI	11/01/2006
Co60	9.19e+01	1.1e+01		PCI	11/01/2006
Cs137	1.47e+02	1.8e+01	4.8e+03	PCI	11/01/2006
Eu152	1.21e+02	1.6e+01		PCI	11/01/2006
I131	ND			PCI	11/01/2006
K40	8.75e+02	1.1e+02		PCI	11/01/2006
Pb212	1.08e+02	1.4e+01		PCI	11/01/2006
Pb214 *	1.01e+02	1.3e+01		PCI	11/01/2006
Ra226 *	2.54e+02	7.4e+01		PCI	11/01/2006
Ra228	1.31e+02	1.9e+01		PCI	11/01/2006
Th234 *	1.45e+02	5.8e+01		PCI	11/01/2006
Tl208	4.53e+01	7.2e+00		PCI	11/01/2006
U235 *	1.57e+01	4.5e+00		PCI	11/01/2006

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG #0700026

SAMPLE ANALYSIS REPORT

Sample #:	RBK-00526603T	QC batch #:	0004644Q
Matrix:	N/A	Prep batch #:	0011825W
Sample type:	N/A	Prep procedure:	N/A
Amount analyzed:	1.000e+00 SAMP	Analysis procedure:	NAREL GAM-01
Dry/wet weight:	N/A	Analyst:	RL
Ash/dry weight:	N/A	QC type:	RBK
Sample description:	N/A		
Comment:	N/A		

COUNTING INFORMATION

Date and time	Duration (min)	Detector ID	Operator
09/05/2007 16:09	1000.0	GE11	RCL

ANALYTICAL RESULTS

Analyte	Activity	$\pm 2 \sigma$ Uncertainty	MDC	Unit	Date
Ba140	ND		1.2e+01	PCI	08/30/2007
Co60	ND		3.4e+00	PCI	08/30/2007
Cs137	ND		2.9e+00	PCI	08/30/2007
I131	ND		4.2e+00	PCI	08/30/2007
K40	ND		3.2e+01	PCI	08/30/2007
Pb214 *	4.59e+00	3.3e+00		PCI	08/30/2007
Ra226	ND		4.4e+01	PCI	08/30/2007
Ra228	ND		1.7e+01	PCI	08/30/2007

* An asterisk indicates a result that may be significantly under or overestimated

**U.S. ENVIRONMENTAL PROTECTION AGENCY
NATIONAL AIR AND RADIATION ENVIRONMENTAL LABORATORY**

SDG 0700026

QC BATCH SUMMARY

QC batch #: 0004644Q
Preparation procedure: N/A
Analysis procedure: NAREL GAM-01

NAREL Sample #	QC Type	Yield (%)	$\pm 2 \sigma$ Uncertainty (%)	Analyst
A7.05294Z	DUP	N/A		RL
A7.05295A		N/A		RL
A7.05296B		N/A		RL
A7.05297C		N/A		RL
A7.05298D		N/A		RL
A7.05298D		N/A		RL
A7.05324M *		N/A		RL
A7.05325N *		N/A		RL
A7.05326P *		N/A		RL
A7.05327Q *		N/A		RL
LCS-00526604U *	LCS	N/A		RL
RBK-00526603T *	RBK	N/A		RL

* Samples marked with an asterisk are not in this sample delivery group but were analyzed with it for QC purposes.

National Air and Radiation Environmental Laboratory QC Batch Report

QC Batch #: 0004644Q

Analytical Procedure: NAREL GAM-01

REAGENT BLANKS (PCI)

Sample ID	Nuclide	Activity $\pm 2\sigma$	Prep Date
00526603T	BA140		
00526603T	CO60		
00526603T	CS137		
00526603T	I131		
00526603T	K40		
00526603T	RA226		
00526603T	RA228		

LABORATORY DUPLICATES (PCI/GWET)

Sample ID	Nuclide	Original $\pm 2\sigma$	Duplicate $\pm 2\sigma$	RPD	Z
A7.05298D	BA140				
A7.05298D	CO60				
A7.05298D	CS137				
A7.05298D	I131	$2.34e-01 \pm 2.9e-02$	$2.32e-01 \pm 3.0e-02$	0.86	-0.10 OK
A7.05298D	K40	$3.66e+00 \pm 4.4e-01$	$3.72e+00 \pm 4.7e-01$	1.63	0.19 OK
A7.05298D	PB212	$2.07e-01 \pm 2.9e-02$	$2.28e-01 \pm 3.5e-02$	9.66	0.92 OK
A7.05298D	RA224	$1.48e-01 \pm 1.9e-01$	$3.56e-01 \pm 2.9e-01$	82.54	1.20 OK
A7.05298D	RA228	$2.19e-01 \pm 3.3e-02$	$2.11e-01 \pm 4.6e-02$	3.72	-0.28 OK
A7.05298D	RN219	$2.24e-01 \pm 7.5e-02$	$2.66e-01 \pm 8.3e-02$	17.14	0.75 OK
A7.05298D	TH227	$1.37e-01 \pm 3.8e-02$	$1.50e-01 \pm 4.6e-02$	9.06	0.44 OK
A7.05298D	TL208	$7.17e-02 \pm 1.1e-02$	$7.37e-02 \pm 1.6e-02$	2.75	0.21 OK

LAB CONTROL SAMPLES (PCI)

Sample ID	Nuclide	Amt Added $\pm 2\sigma$	Measured $\pm 2\sigma$	%R	Z
00526604U	BA133	$1.21e+02 \pm 2.1\%$			
00526604U	BA140	NO SPIKE DATA	$1.25e+02 \pm 1.5e+01$	103.17	0.50 OK
00526604U	BI212	NO SPIKE DATA			
00526604U	CO60	$8.60e+01 \pm 2.1\%$			
00526604U	CS137	$1.35e+02 \pm 2.1\%$	$9.19e+01 \pm 1.1e+01$	106.89	1.05 OK
00526604U	EU152	$1.12e+02 \pm 2.1\%$	$1.47e+02 \pm 1.8e+01$	108.77	1.32 OK
00526604U	I131	NO SPIKE DATA	$1.21e+02 \pm 1.6e+01$	108.48	1.16 OK
00526604U	K40	NO SPIKE DATA			
00526604U	PB212	NO SPIKE DATA			
00526604U	RA228	NO SPIKE DATA			
00526604U	TL208	NO SPIKE DATA			

Analyst:

Lowry, Robert C.

11-7-2007

QA Officer:

Kirk J. McQuinn

11/8/07



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 7, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Upper Grandview Mine,
Case# 36737, SDG: MJ8B53, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. One (1) rinsate blank was analyzed for total elements by Bonner Analytical, Hattiesburg, MS. The sample number is MJ8B53.

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days; Hg 28 days). The sample was collected on 8/17/07. ICP-AES and mercury analyses were both conducted on 8/24/07.

INSTRUMENT CALIBRATION/VERIFICATION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-102%) met both the frequency (10%) and recovery (90-110%) criteria.

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B53

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36737

NRAS No.:

SDG NO.: MJ8B53Matrix (soil/water): WATERLab Sample ID: BT65878Level (low/med): LOWDate Received: 08/18/2007% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight):

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	70.3	J	u	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	0.64	J		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	2.3	J	u	P
7440-23-5	Sodium	267	J	u	P
7440-28-0	Thallium	2.8	J	u	P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	60.0	U		P

DM
9-7-07Color Before: COLORLESSClarity Before: CLEAR

Texture: _____

Color After: COLORLESSClarity After: CLEAR

Artifacts: _____

Comments:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue
Seattle, Washington 98101

September 7, 2007

Reply To
Attn. Of: OEA-095

MEMORANDUM

SUBJECT: Data Validation for the Upper Grandview Mine,
Case# 36737, SDG: MJ8B47, Inorganic Analyses

FROM: Donald Matheny, Chemist *DM*
Environmental Services Unit, OEA

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Alexis Ande, TechLaw Inc.

The data validation of metals analysis for the above sample set is complete. Five (5) soil samples were analyzed for total elements by Bonner Analytical, Hattiesburg, MS. Sample numbers for this delivery group are as follows:

MJ8B47 MJ8B48 MJ8B49 MJ8B50 MJ8B51

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.4", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days; Hg 28 days). Samples were collected on 8/16/07 and 8/17/07. ICP-AES analysis was conducted on 8/28/07 and Mercury analysis on 8/24/07.

ASSESSMENT SUMMARY

The following is a summary of qualified data: The (D) qualifier was applied to sample results that required dilution due to analyte concentrations that exceeded the instrument's upper calibration range.

Silver and sodium data were qualified (U) due to the detected presence of these elements in the instrument calibration and/or preparation blanks.

Antimony, copper and manganese data were qualified (J or UJ) due to low matrix spike recoveries. These data may be biased low.

Iron data were qualified (J) due to a high relative percent difference in the duplicate sample analysis. Bias for iron values could not be determined.

Chromium and potassium data were qualified (J) due to high percent differences in the serial dilution analysis. Values for these elements may be biased high.

DATA QUALIFIERS

- U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
- J - The associated value is an estimated quantity.
- R - The data are unusable. The analyte may or may not be present in the sample.
- UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B48

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36737

NRAS No.:

SDG NO.: MJ8B47Matrix (soil/water): SOILLab Sample ID: BT65874Level (low/med): LOWDate Received: 08/18/2007% Solids: 99.0

Concentration Units (ug/L or mg/kg dry weight):

MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5640			P
7440-36-0	Antimony	2.0	J	N J	P
7440-38-2	Arsenic	20.5			P
7440-39-3	Barium	76.5			P
7440-41-7	Beryllium	0.27	J		P
7440-43-9	Cadmium	9.7			P
7440-70-2	Calcium	123000		D	P
7440-47-3	Chromium	9.6		E J	P
7440-48-4	Cobalt	3.6	J	*	P
7440-50-8	Copper	27.5		** J	P
7439-89-6	Iron	8340		* J	P
7439-92-1	Lead	5060		*	P
7439-95-4	Magnesium	37300			P
7439-96-5	Manganese	275		** J	P
7439-97-6	Mercury	0.43			CV
7440-02-0	Nickel	26.3		*	P
7440-09-7	Potassium	1230		E J	P
7782-49-2	Selenium	1.3	J		P
7440-22-4	Silver	0.50	J	U	P
7440-23-5	Sodium	505	U		P
7440-28-0	Thallium	2.5	U		P
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	4270		D	P

DM
9-7-07Color Before: BROWN

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ8B50

Lab Name: Bonner Analytical Testing CompaContract: EPW06055Lab Code: BONNER Case No.: 36737

NRAS No.: _____

SDG NO.: MJ8B47Matrix (soil/water): SOILLab Sample ID: BT65876Level (low/med): LOWDate Received: 08/18/2007% Solids: 97.9Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5550			P
7440-36-0	Antimony	3.9	J	H J	P
7440-38-2	Arsenic	73.6			P
7440-39-3	Barium	66.3			P
7440-41-7	Beryllium	0.30	J		P
7440-43-9	Cadmium	32.1			P
7440-70-2	Calcium	191000		D	P
7440-47-3	Chromium	10.3		H J	P
7440-48-4	Cobalt	4.1	J	H	P
7440-50-8	Copper	32.0		H J	P
7439-89-6	Iron	11400		H J	P
7439-92-1	Lead	8990		H D	P
7439-95-4	Magnesium	36200			P
7439-96-5	Manganese	271		H J	P
7439-97-6	Mercury	0.15			CV
7440-02-0	Nickel	86.9		H	P
7440-09-7	Potassium	2190		H J	P
7782-49-2	Selenium	3.1	J		P
7440-22-4	Silver	1.6			P
7440-23-5	Sodium	511	U		P
7440-28-0	Thallium	1.1	J		P
7440-62-2	Vanadium	62.2			P
7440-66-6	Zinc	8970		D	P

DM
9-7-07Color Before: GRAY

Clarity Before: _____

Texture: MEDIUMColor After: YELLOW

Clarity After: _____

Artifacts: YESComments: PLANT MATTER AND ROCKS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

September 19, 2007

MEMORANDUM

SUBJECT: Data validation report for the Volatile Organics (VOCs), Semi-Volatile Organics (SVOCs), Organochlorine Pesticides (Pests) and Polychlorinated Biphenyls (PCBs) analyses of samples from the Upper Grandview Mine Site Case: 36767 SDG: J8B47

FROM: Raymond Wu, QA Chemist
Office of Environmental Assessment *RW 9/20/07*

TO: Earl Liverman, On-Scene Coordinator
Office of Environmental Cleanup

CC: Bryan McKinnon, Start-3 Project Manager
TechLaw, Inc.

The quality assurance (QA) review of 2 water samples and 5 soil samples collected from the above referenced site has been completed. The samples were analyzed for VOCs, SVOCs, Pesticides, and PCBs in accordance with the USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Concentration Organic Analysis (SOM01.1) by Chemtech at Mountainside, New Jersey. The following samples were evaluated in this validation report:

SDG: J8B47

J8B47 J8B48 J8B49 J8B50 J8B51 J8B53 J8B54

DATA QUALIFICATIONS

The following comments refer to the laboratory performance specification outlined in the Quality Assurance Project Plan dated July 31, 2007, USEPA CLP SOW for Organic Analysis (SOM01.1, 05/2005), and applicable criteria set forth in the USEPA CLP National Functional Guidelines for Organic Data Review (01/2005). Note that some of the analytical data reported may be qualified based on the professional judgment of the data reviewer.

The conclusions presented herein are based on the information provided for the review.

Holding Time - Acceptable

All of the samples met the extraction, Validated Time of Sample Receipt (VTSR) and/or analytical holding time criteria for VOC, SVOC, Pesticides and PCB analyses. The samples were collected

Continuing Calibration Verification (CCV)

The frequency of analysis of CCV checks, chromatographic resolution, percent differences (%Ds) between the mean and daily response (calibration) factors, minimum response factors, retention time shifts and percent DDT and endrin breakdowns (Pesticide & PCB analyses) were met by all target compounds and surrogates. The recoveries of the pesticide & PCB standard mixtures were within the control limits. None of the pest/PCB data were qualified on this basis.

All of the volatile CCV checks met the criteria for frequency of analysis, the SOW specified, minimum RRFs and %D as compared to the initial calibration with the exception of the RRF for 1,4-Dioxane and the following:

Date/Time of Analysis/ Inst.	Compound	%D	Qualifier Detect/Non-detect	Associated Samples
8/24/07 11:59 (opening)	Acetone	32.1	J/None	J8B53 -> J8B54

The %Ds of the SVOC target compounds bracketing the sample and QC sample runs were all acceptable with the exception of the following:

Date/Time of Analysis/ Inst.	Compound	%D	Qualifier Detect/Non-detect	Associated Samples
8/25/07 3:46 (closing)	2,4-Dinitrophenol	-91.6	J/UJ	J8B47 -> J8B51
	4,6-Dinitro-2-Methylphenol	-84.7	J/UJ	"
8/29/07 2:07 (closing)	2,4-Dinitrophenol	-81.8	J/UJ	J8B47, J8B50, J8B51
	4,6-Dinitro-2-Methylphenol	-69.1	J/UJ	"

* Note: J8B47 -> J8B51, J8B53 and J8B54 were selected for reporting volatiles whereas J8B47RE, J8B48, J8B49, J8B50RE, J8B51RE & J8B53 were picked for reporting semivolatiles.

Quantitation Limits

The VOC samples were analyzed at the contract required quantitation limits (CRQL). The CRQLs were based on the lowest standard concentration analyzed in the initial calibrations. Target compounds that were detected at concentrations less than the QLs were qualified as estimated, "JQ". Trace level of common contaminants detected in the samples at concentration < CRQL were qualified by the reviewer as non-detects, "U", and reported at the CRQL. All of the reported results were adjusted for sample amount analyzed. When applicable, all of the "B", "J", "D", "S" and "E" qualifiers applied by the laboratory were crossed out by the reviewer.

All of the sample runs met the Contract-Required Quantitation Limits (CRQLs). There were no SVOCs detected above the CRQL for all of the samples. Detected Target compounds in the samples at concentrations less than the CRQLs were qualified as estimated, "JQ". Trace level of common contaminants detected in the samples at

All of the water volatile surrogate recoveries met the applicable recovery criteria.

“Soil”

DMCs	Recovery Limits (%)	DMCs	Recovery Limits (%)
Vinyl chloride -d3 (VCL)	68-122	1,2- Dichloropropane-d6 (DPA)	74-124
Chloroethane-d5 (CLA)	61-130	Toluene-d8 (TOL)	78-121
1,1- Dichloroethene-d2 (DCE)	45-132	trans-1,3-dichloropropene-d4 (TDP)	72-130
2-Butanone-d5 (BUT)	20-182	2-Hexanone-d5 (HEX)	17-184
Chloroform-d (CLF)	72-123	1,4-Dioxane (DXE)	50-150
1,2-Dichloroethane-d4 (DCA)	79-122	1,1,2,2-Tetrachloroethane-d2 (TCA)	56 -161
Benzene-d6 (BEN)	80-121	1,2-dichlorobenzene-d4 (DCZ)	70 -131

All of the soil volatile surrogate recoveries met the applicable recovery criteria with exceptions of the following:

Soil Sample	DMC	%Recovery	Qualification Detects/Non-detects	Associated VOCs
J8B47	VCL	127	J/None	Vinyl Chloride
	CLA	159	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	139	J/None	Benzene
	DPA	134	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane
J8B48	VCL	171	J/None	Vinyl Chloride
	CLA	236	J/None	Dichlorodifluoromethane, Chloromethane, Bromomethane, Chloroethane, Carbon Disulfide
	BEN	145	J/None	Benzene
	DPA	138	J/None	Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane
J8B50	VCL	128	J/None	Vinyl Chloride

Gel Permeation Chromatography (GPC) Check – Acceptable

GPC is an optional cleanup method for both aqueous and non-aqueous samples. It was employed by the contract laboratory. A GPC blank was analyzed and was found to not exceed the contract Required Quantitation Limit (CRQL).

Tentatively Identified Compounds

Chromatographic peaks in the samples' VOC and SVOC runs that are not target compounds, surrogates or internal standards with areas > 10% of the nearest IS must be tentatively identified by the laboratory using a mass spectral search of the NIST library. The TICs identified by the lab on Form 1s were qualified as tentatively identified at estimated concentrations, "JN", with an unknown bias.

Laboratory Contact

The laboratory was contacted during this review. The subcontract laboratory was asked to submit current Gas Chromatographic Temperature Program and to provide explanations for greater than usual amount of manual integrations regarding the volatile data.

Overall Assessment

The total number of data points evaluated was 946. As the result of the data validation, 14.4% of those were qualified due to failing internal standard; 1.1% of those were qualified due to calibration; 0.7% of those were qualified unusable due to extremely low and unacceptable instrument response.

The data, as qualified, are acceptable and can be used for all purposes.

4-Methylphenol-d8 (4MP)	8-100	Fluorene-d10 (FLR)	40-108
Nitrobenzene-d4 (NBZ)	16-103	4,6-Dinitro-2-methylphenol-d2 (NMP)	1-121
2-Nitrophenol-d4 (2NP)	16-104	Anthracene-d10 (ANC)	22-98
2,4-Dichlorophenol-d3 (DCP)	23-104	Pyrene-d10 (PYR)	51-120
4-Chloroaniline-d4 (4CA)	1-145	Benzo(a)pyrene-d12 (BAP)	43-111

All of the soil SVOC surrogate recoveries met the applicable recovery criteria.

Pesticide/PCB DMCs (both water and soil)	Recovery Limits (%)
Tetrachloro-m-xylene (TCX)	30-150
Decachlorobiphenyl (DCB)	30-150

The recoveries of TCX and DCB were calculated and reported from the two GC columns used for both pesticides and PCB analyses. For pesticides, the TCX and DCB recoveries met acceptable control limits in all samples. Therefore, none was qualified on this basis.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Samples J8B47 was designated for MS/MSD analyses for VOCs, SVOCs, Pesticides and PCBs. The percent recovery and percent difference (%RPD) were met for all with the exceptions of the following:

- Aroclors: half of the spiking %recoveries were out.

Since there was no detection of the aroclors in any of the samples, none was qualified on this basis.

Internal Standards

VOCs

- The acceptance criteria for internal standards (IS) was within +/- 30 seconds for retention time (RT) shifts and 50% to 200% of the IS area as compared to the IS RT and area of the daily continuing verification standard. All of the analyses met the IS area & RT criteria with exceptions of 3 samples:

- J8B47 - Internal Standard #1 & #3 were lower than the QC limits;
- J8B48 - Internal Standard #1, #2 & #3 were lower than the QC limits;
- J8B51 - Internal Standard #1, #2 & #3 were lower than the QC limits.

The corresponding compounds were qualified as J/UI. They are:

- For Internal Standard #1 (1,4-Difluorobenzene)

Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, Chloroethane,

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

REPORT

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01

Sample wt/vol: 4.33 (g/mL) g

Lab File ID: VE004621.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane		5.8	UJK
74-87-3	Chloromethane		5.8	U
75-01-4	Vinyl Chloride		5.8	U
74-83-9	Bromomethane		5.8	U
75-00-3	Chloroethane		5.8	U
75-69-4	Trichlorofluoromethane		5.8	U
75-35-4	1,1-Dichloroethene		5.8	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		5.8	U L
67-64-1	Acetone		20	JH
75-15-0	Carbon disulfide		5.8	UJK
79-20-9	Methyl acetate		5.8	U L
75-09-2	Methylene chloride		7.5	JH
156-60-5	trans-1,2-Dichloroethene		5.8	UJK
1634-04-4	Methyl tert-Butyl ether		5.8	U
75-34-3	1,1-Dichloroethane		5.8	U
156-59-2	cis-1,2-Dichloroethene		5.8	U
78-93-3	2-Butanone		12	U
74-97-5	Bromochloromethane		5.8	U
67-66-3	Chloroform		5.8	U L
71-55-6	1,1,1-Trichloroethane		5.8	U
110-82-7	Cyclohexane		5.8	U
56-23-5	Carbon Tetrachloride		5.8	U
71-43-2	Benzene		5.8	U
107-06-2	1,2-Dichloroethane		5.8	UJK
123-91-1	1,4-Dioxane		120	XR

9/13/07

SOM01.1 (5/2005)

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

REPORT

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.:

SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01

Sample wt/vol: 4.33 (g/mL) g

Lab File ID: VE004621.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
79-01-6	Trichloroethene	5.8	UJK
108-87-2	Methylcyclohexane	5.8	U
78-87-5	1,2-Dichloropropane	5.8	U
75-27-4	Bromodichloromethane	5.8	U
10061-01-5	cis-1,3-Dichloropropene	5.8	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	5.8	U
10061-02-6	trans-1,3-Dichloropropene	5.8	U
79-00-5	1,1,2-Trichloroethane	5.8	U
127-18-4	Tetrachloroethene	5.8	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	5.8	U
106-93-4	1,2-Dibromoethane	5.8	U
108-90-7	Chlorobenzene	5.8	U
100-41-4	Ethylbenzene	5.8	U
95-47-6	o-Xylene	5.8	U
179601-23-1	m,p-Xylene	6.6	
100-42-5	Styrene	5.8	U
75-25-2	Bromoform	5.8	UJK
98-82-8	Isopropylbenzene	5.8	U
79-34-5	1,1,2,2-Tetrachloroethane	5.8	U
541-73-1	1,3-Dichlorobenzene	5.8	UJK
106-46-7	1,4-Dichlorobenzene	5.8	U
95-50-1	1,2-Dichlorobenzene	5.8	U
96-12-8	1,2-Dibromo-3-chloropropane	5.8	U
120-82-1	1,2,4-Trichlorobenzene	5.8	U
87-61-6	1,2,3-Trichlorobenzene	5.8	U

SOM01.1 (5/2005)

9/13/07

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REPORT

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 4.33 (g/mL) g Lab File ID: VE004621.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
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11.					
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22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/13/07

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1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g

Lab File ID: VE004628.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
75-71-8	Dichlorodifluoromethane	7.1	U
74-87-3	Chloromethane	7.1	U
75-01-4	Vinyl Chloride	7.1	U
74-83-9	Bromomethane	7.1	U
75-00-3	Chloroethane	7.1	U
75-69-4	Trichlorofluoromethane	7.1	U
75-35-4	1,1-Dichloroethene	7.1	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.1	U
67-64-1	Acetone	36	
75-15-0	Carbon disulfide	7.1	U
79-20-9	Methyl acetate	7.1	U
75-09-2	Methylene chloride	12	
156-60-5	trans-1,2-Dichloroethene	7.1	U
1634-04-4	Methyl tert-Butyl ether	7.1	U
75-34-3	1,1-Dichloroethane	7.1	U
156-59-2	cis-1,2-Dichloroethene	7.1	U
78-93-3	2-Butanone	14	U
74-97-5	Bromochloromethane	7.1	U
67-66-3	Chloroform	7.1	U
71-55-6	1,1,1-Trichloroethane	7.1	U
110-82-7	Cyclohexane	7.1	U
56-23-5	Carbon Tetrachloride	7.1	U
71-43-2	Benzene	7.1	U
107-06-2	1,2-Dichloroethane	7.1	U
123-91-1	1,4-Dioxane	140	OR

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g

Lab File ID: VE004628.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		7.1	U
108-87-2	Methylcyclohexane		7.1	U
78-87-5	1,2-Dichloropropane		7.1	U
75-27-4	Bromodichloromethane		7.1	U
10061-01-5	cis-1,3-Dichloropropene		7.1	U
108-10-1	4-Methyl-2-pentanone		14	U
108-88-3	Toluene		7.1	U
10061-02-6	trans-1,3-Dichloropropene		7.1	U
79-00-5	1,1,2-Trichloroethane		7.1	U
127-18-4	Tetrachloroethene		7.1	U
591-78-6	2-Hexanone		14	U
124-48-1	Dibromochloromethane		7.1	U
106-93-4	1,2-Dibromoethane		7.1	U
108-90-7	Chlorobenzene		7.1	U
100-41-4	Ethylbenzene		7.1	U
95-47-6	o-Xylene		7.1	U
179601-23-1	m,p-Xylene		12	
100-42-5	Styrene		7.1	U
75-25-2	Bromoform		7.1	U
98-82-8	Isopropylbenzene		7.1	U
79-34-5	1,1,2,2-Tetrachloroethane		7.1	U
541-73-1	1,3-Dichlorobenzene		7.1	U
106-46-7	1,4-Dichlorobenzene		7.1	U
95-50-1	1,2-Dichlorobenzene		7.1	U
96-12-8	1,2-Dibromo-3-chloropropane		7.1	U
120-82-1	1,2,4-Trichlorobenzene		7.1	U
87-61-6	1,2,3-Trichlorobenzene		7.1	U

SOM01.1 (5/2005)

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1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 3.55 (g/mL) g Lab File ID: VE004628.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
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26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

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1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	6.7		UJK
74-87-3	Chloromethane	6.7		U
75-01-4	Vinyl Chloride	6.7		U
74-83-9	Bromomethane	6.7		U
75-00-3	Chloroethane	6.7		U
75-69-4	Trichlorofluoromethane	6.7		U
75-35-4	1,1-Dichloroethene	6.7		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.7		U L
67-64-1	Acetone	21		JH
75-15-0	Carbon disulfide	6.7		UJK
79-20-9	Methyl acetate	8.8		JH
75-09-2	Methylene chloride	23		JH
156-60-5	trans-1,2-Dichloroethene	6.7		UJK
1634-04-4	Methyl tert-Butyl ether	6.7		U
75-34-3	1,1-Dichloroethane	6.7		U
156-59-2	cis-1,2-Dichloroethene	6.7		U L
78-93-3	2-Butanone	16		JH
74-97-5	Bromochloromethane	6.7		UJK
67-66-3	Chloroform	6.7		U
71-55-6	1,1,1-Trichloroethane	6.7		U
110-82-7	Cyclohexane	6.7		U
56-23-5	Carbon Tetrachloride	6.7		U
71-43-2	Benzene	6.7		U
107-06-2	1,2-Dichloroethane	6.7		U L
123-91-1	1,4-Dioxane	130		NR

9/17/07

SOM01.1 (5/2005)

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.7	UJK
108-87-2	Methylcyclohexane		6.7	U
78-87-5	1,2-Dichloropropane		6.7	U
75-27-4	Bromodichloromethane		6.7	U
10061-01-5	cis-1,3-Dichloropropene		6.7	U
108-10-1	4-Methyl-2-pentanone		13	U L
108-88-3	Toluene		9.5	JH
10061-02-6	trans-1,3-Dichloropropene		6.7	UJK
79-00-5	1,1,2-Trichloroethane		6.7	U
127-18-4	Tetrachloroethene		6.7	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.7	U
106-93-4	1,2-Dibromoethane		6.7	U
108-90-7	Chlorobenzene		6.7	U
100-41-4	Ethylbenzene		6.7	U
95-47-6	o-Xylene		6.7	U L
179601-23-1	m,p-Xylene		12	JH
100-42-5	Styrene		6.7	UJK
75-25-2	Bromoform		6.7	U
98-82-8	Isopropylbenzene		6.7	U
79-34-5	1,1,2,2-Tetrachloroethane		6.7	U
541-73-1	1,3-Dichlorobenzene		6.7	U
106-46-7	1,4-Dichlorobenzene		6.7	U
95-50-1	1,2-Dichlorobenzene		6.7	U
96-12-8	1,2-Dibromo-3-chloropropane		6.7	U
120-82-1	1,2,4-Trichlorobenzene		6.7	U
87-61-6	1,2,3-Trichlorobenzene		6.7	U L

SOM01.1 (5/2005)

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: 00091

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 3.76 (g/mL) g

Lab File ID: VE004624.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

: 00092

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane		14	U
74-87-3	Chloromethane		14	U
75-01-4	Vinyl Chloride		14	U
74-83-9	Bromomethane		14	U
75-00-3	Chloroethane		14	U
75-69-4	Trichlorofluoromethane		14	U
75-35-4	1,1-Dichloroethene		14	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		14	U
67-64-1	Acetone		58	
75-15-0	Carbon disulfide		14	U
79-20-9	Methyl acetate		37	
75-09-2	Methylene chloride		20	
156-60-5	trans-1,2-Dichloroethene		14	U
1634-04-4	Methyl tert-Butyl ether		14	U
75-34-3	1,1-Dichloroethane		14	U
156-59-2	cis-1,2-Dichloroethene		14	U
78-93-3	2-Butanone		28	U
74-97-5	Bromochloromethane		14	U
67-66-3	Chloroform		14	U
71-55-6	1,1,1-Trichloroethane		14	U
110-82-7	Cyclohexane		14	U
56-23-5	Carbon Tetrachloride		14	U
71-43-2	Benzene		14	U
107-06-2	1,2-Dichloroethane		14	U
123-91-1	1,4-Dioxane		280	NR

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9/17/07

SOM01.1 (5/2005)

: 00108

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

No to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		14	U
108-87-2	Methylcyclohexane		14	U
78-87-5	1,2-Dichloropropane		14	U
75-27-4	Bromodichloromethane		14	U
10061-01-5	cis-1,3-Dichloropropene		14	U
108-10-1	4-Methyl-2-pentanone		28	U
108-88-3	Toluene		14	U
10061-02-6	trans-1,3-Dichloropropene		14	U
79-00-5	1,1,2-Trichloroethane		14	U
127-18-4	Tetrachloroethene		14	U
591-78-6	2-Hexanone		28	U
124-48-1	Dibromochloromethane		14	U
106-93-4	1,2-Dibromoethane		14	U
108-90-7	Chlorobenzene		14	U
100-41-4	Ethylbenzene		14	U
95-47-6	o-Xylene		14	U
179601-23-1	m,p-Xylene		14	U
100-42-5	Styrene		14	U
75-25-2	Bromoform		14	U
98-82-8	Isopropylbenzene		14	U
79-34-5	1,1,2,2-Tetrachloroethane		14	U
541-73-1	1,3-Dichlorobenzene		14	U
106-46-7	1,4-Dichlorobenzene		14	U
95-50-1	1,2-Dichlorobenzene		14	U
96-12-8	1,2-Dibromo-3-chloropropane		14	U
120-82-1	1,2,4-Trichlorobenzene		14	U
87-61-6	1,2,3-Trichlorobenzene		14	U

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SOM01.1 (5/2005)

: 00109

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B48RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-04RE

Sample wt/vol: 1.78 (g/mL) g

Lab File ID: VE004629.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00110

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g Lab File ID: VE004630.D

Level (TRACE/LOW/MED): LOW Date Received: 08/18/2007

% Moisture: not dec. 1 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
75-71-8	Dichlorodifluoromethane	6.4	U
74-87-3	Chloromethane	6.4	U
75-01-4	Vinyl Chloride	6.4	U
74-83-9	Bromomethane	6.4	U
75-00-3	Chloroethane	6.4	U
75-69-4	Trichlorofluoromethane	6.4	U
75-35-4	1,1-Dichloroethene	6.4	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.4	U
67-64-1	Acetone	19	JH
75-15-0	Carbon disulfide	6.4	U
79-20-9	Methyl acetate	11	
75-09-2	Methylene chloride	6.4	U
156-60-5	trans-1,2-Dichloroethene	6.4	U
1634-04-4	Methyl tert-Butyl ether	6.4	U
75-34-3	1,1-Dichloroethane	6.4	U
156-59-2	cis-1,2-Dichloroethene	6.4	U
78-93-3	2-Butanone	13	U
74-97-5	Bromochloromethane	6.4	U
67-66-3	Chloroform	6.4	U
71-55-6	1,1,1-Trichloroethane	6.4	U
110-82-7	Cyclohexane	6.4	U
56-23-5	Carbon Tetrachloride	6.4	U
71-43-2	Benzene	6.4	U
107-06-2	1,2-Dichloroethane	6.4	U
123-91-1	1,4-Dioxane	130	JR

SOM01.1 (5/2005)

9/17/07

: 00126

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g

Lab File ID: VE004630.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.4	UJK
108-87-2	Methylcyclohexane		6.4	U
78-87-5	1,2-Dichloropropane		6.4	U
75-27-4	Bromodichloromethane		6.4	U
10061-01-5	cis-1,3-Dichloropropene		6.4	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		6.4	U
10061-02-6	trans-1,3-Dichloropropene		6.4	U
79-00-5	1,1,2-Trichloroethane		6.4	U
127-18-4	Tetrachloroethene		6.4	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.4	U
106-93-4	1,2-Dibromoethane		6.4	U
108-90-7	Chlorobenzene		6.4	U
100-41-4	Ethylbenzene		6.4	U
95-47-6	o-Xylene		6.4	U
179601-23-1	m,p-Xylene		6.4	
100-42-5	Styrene		6.4	U
75-25-2	Bromoform		6.4	U
98-82-8	Isopropylbenzene		6.4	U
79-34-5	1,1,2,2-Tetrachloroethane		6.4	U
541-73-1	1,3-Dichlorobenzene		6.4	U
106-46-7	1,4-Dichlorobenzene		6.4	U
95-50-1	1,2-Dichlorobenzene		6.4	U
96-12-8	1,2-Dibromo-3-chloropropane		6.4	U
120-82-1	1,2,4-Trichlorobenzene		6.4	U
87-61-6	1,2,3-Trichlorobenzene		6.4	U

SOM01.1 (5/2005)

9/17/07

: 00127

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-05

Sample wt/vol: 3.94 (g/mL) g

Lab File ID: VE004630.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 1.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	24	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

: 00128

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	7.1	U	U
74-87-3	Chloromethane	7.1	U	U
75-01-4	Vinyl Chloride	7.1	U	U
74-83-9	Bromomethane	7.1	U	U
75-00-3	Chloroethane	7.1	U	U
75-69-4	Trichlorofluoromethane	7.1	U	U
75-35-4	1,1-Dichloroethene	7.1	U	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	7.1	U	U
67-64-1	Acetone	14	UJK	UJK
75-15-0	Carbon disulfide	7.1	U	U
79-20-9	Methyl acetate	7.1	U	U
75-09-2	Methylene chloride	7.1	U	U
156-60-5	trans-1,2-Dichloroethene	7.1	U	U
1634-04-4	Methyl tert-Butyl ether	7.1	U	U
75-34-3	1,1-Dichloroethane	7.1	U	U
156-59-2	cis-1,2-Dichloroethene	7.1	U	U
78-93-3	2-Butanone	15		
74-97-5	Bromochloromethane	7.1	U	U
67-66-3	Chloroform	7.1	U	U
71-55-6	1,1,1-Trichloroethane	7.1	U	U
110-82-7	Cyclohexane	7.1	U	U
56-23-5	Carbon Tetrachloride	7.1	U	U
71-43-2	Benzene	7.1	U	U
107-06-2	1,2-Dichloroethane	7.1	U	U
123-91-1	1,4-Dioxane	140	OR	OR

9/17/07

SOM01.1 (5/2005)

: 00145

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
79-01-6	Trichloroethene	7.1	UJK
108-87-2	Methylcyclohexane	7.1	U
78-87-5	1,2-Dichloropropane	7.1	U
75-27-4	Bromodichloromethane	7.1	U
10061-01-5	cis-1,3-Dichloropropene	7.1	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	7.1	U
10061-02-6	trans-1,3-Dichloropropene	7.1	U
79-00-5	1,1,2-Trichloroethane	7.1	U
127-18-4	Tetrachloroethene	7.1	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	7.1	U
106-93-4	1,2-Dibromoethane	7.1	U
108-90-7	Chlorobenzene	7.1	U
100-41-4	Ethylbenzene	7.1	U
95-47-6	o-Xylene	7.1	U
179601-23-1	m,p-Xylene	7.1	U
100-42-5	Styrene	7.1	U
75-25-2	Bromoform	7.1	U
98-82-8	Isopropylbenzene	7.1	U
79-34-5	1,1,2,2-Tetrachloroethane	7.1	U
541-73-1	1,3-Dichlorobenzene	7.1	U
106-46-7	1,4-Dichlorobenzene	7.1	U
95-50-1	1,2-Dichlorobenzene	7.1	U
96-12-8	1,2-Dibromo-3-chloropropane	7.1	U
120-82-1	1,2,4-Trichlorobenzene	7.1	U
87-61-6	1,2,3-Trichlorobenzene	7.1	U

SOM01.1 (5/2005)

9/17/07

: 00146

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B50

Lab Name: Chentech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 3.61 (g/mL) g

Lab File ID: VE004626.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec. 2.0

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00147

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g

Lab File ID: VE004631.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	9.4	U	U
74-87-3	Chloromethane	9.4	U	U
75-01-4	Vinyl Chloride	9.4	U	U
74-83-9	Bromomethane	9.4	U	U
75-00-3	Chloroethane	9.4	U	U
75-69-4	Trichlorofluoromethane	9.4	U	U
75-35-4	1,1-Dichloroethene	9.4	U	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	9.4	U	U
67-64-1	Acetone	19	U	U
75-15-0	Carbon disulfide	9.4	U	U
79-20-9	Methyl acetate	9.4	U	U
75-09-2	Methylene chloride	9.4	U	U
156-60-5	trans-1,2-Dichloroethene	9.4	U	U
1634-04-4	Methyl tert-Butyl ether	9.4	U	U
75-34-3	1,1-Dichloroethane	9.4	U	U
156-59-2	cis-1,2-Dichloroethene	9.4	U	U
78-93-3	2-Butanone	19	U	U
74-97-5	Bromochloromethane	9.4	U	U
67-66-3	Chloroform	9.4	U	U
71-55-6	1,1,1-Trichloroethane	9.4	U	U
110-82-7	Cyclohexane	9.4	U	U
56-23-5	Carbon Tetrachloride	9.4	U	U
71-43-2	Benzene	9.4	U	U
107-06-2	1,2-Dichloroethane	9.4	U	U
123-91-1	1,4-Dioxane	190	NR	NR

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9/17/07

SOM01.1 (5/2005)

: 00162

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g

Lab File ID: VE004631.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 2

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		9.4	U
108-87-2	Methylcyclohexane		9.4	U
78-87-5	1,2-Dichloropropane		9.4	U
75-27-4	Bromodichloromethane		9.4	U
10061-01-5	cis-1,3-Dichloropropene		9.4	U
108-10-1	4-Methyl-2-pentanone		19	U
108-88-3	Toluene		9.4	U
10061-02-6	trans-1,3-Dichloropropene		9.4	U
79-00-5	1,1,2-Trichloroethane		9.4	U
127-18-4	Tetrachloroethene		9.4	U
591-78-6	2-Hexanone		19	U
124-48-1	Dibromochloromethane		9.4	U
106-93-4	1,2-Dibromoethane		9.4	U
108-90-7	Chlorobenzene		9.4	U
100-41-4	Ethylbenzene		9.4	U
95-47-6	o-Xylene		9.4	U
179601-23-1	m,p-Xylene		9.4	U
100-42-5	Styrene		9.4	U
75-25-2	Bromoform		9.4	U
98-82-8	Isopropylbenzene		9.4	U
79-34-5	1,1,2,2-Tetrachloroethane		9.4	U
541-73-1	1,3-Dichlorobenzene		9.4	U
106-46-7	1,4-Dichlorobenzene		9.4	U
95-50-1	1,2-Dichlorobenzene		9.4	U
96-12-8	1,2-Dibromo-3-chloropropane		9.4	U
120-82-1	1,2,4-Trichlorobenzene		9.4	U
87-61-6	1,2,3-Trichlorobenzene		9.4	U

SOM01.1 (5/2005)

9/17/07

: 00163

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 2.71 (g/mL) g Lab File ID: VE004631.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 2.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

9/17/07

: 00164

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g

Lab File ID: VE004627.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
75-71-8	Dichlorodifluoromethane	6.3		UJK
74-87-3	Chloromethane	6.3		U
75-01-4	Vinyl Chloride	6.3		U
74-83-9	Bromomethane	6.3		U
75-00-3	Chloroethane	6.3		U
75-69-4	Trichlorofluoromethane	6.3		U
75-35-4	1,1-Dichloroethene	6.3		U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.3		U L
67-64-1	Acetone	22		JH
75-15-0	Carbon disulfide	6.3		UJK
79-20-9	Methyl acetate	16		JH
75-09-2	Methylene chloride	12		JH
156-60-5	trans-1,2-Dichloroethene	6.3		UJK
1634-04-4	Methyl tert-Butyl ether	6.3		U
75-34-3	1,1-Dichloroethane	6.3		U
156-59-2	cis-1,2-Dichloroethene	6.3		U L
78-93-3	2-Butanone	23		JH
74-97-5	Bromochloromethane	6.3		UJK
67-66-3	Chloroform	6.3		U
71-55-6	1,1,1-Trichloroethane	6.3		U
110-82-7	Cyclohexane	6.3		U
56-23-5	Carbon Tetrachloride	6.3		U
71-43-2	Benzene	6.3		U
107-06-2	1,2-Dichloroethane	6.3		U L
123-91-1	1,4-Dioxane	130		U R

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1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g

Lab File ID: VE004627.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 1.0 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.3	UJK
108-87-2	Methylcyclohexane		6.3	U
78-87-5	1,2-Dichloropropane		6.3	U
75-27-4	Bromodichloromethane		6.3	U
10061-01-5	cis-1,3-Dichloropropene		6.3	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		6.3	U
10061-02-6	trans-1,3-Dichloropropene		6.3	U
79-00-5	1,1,2-Trichloroethane		6.3	U
127-18-4	Tetrachloroethene		6.3	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.3	U
106-93-4	1,2-Dibromoethane		6.3	U
108-90-7	Chlorobenzene		6.3	U
100-41-4	Ethylbenzene		6.3	U
95-47-6	o-Xylene		6.3	U
179601-23-1	m,p-Xylene		6.3	U
100-42-5	Styrene		6.3	U
75-25-2	Bromoform		6.3	U
98-82-8	Isopropylbenzene		6.3	U
79-34-5	1,1,2,2-Tetrachloroethane		6.3	U
541-73-1	1,3-Dichlorobenzene		6.3	U
106-46-7	1,4-Dichlorobenzene		6.3	U
95-50-1	1,2-Dichlorobenzene		6.3	U
96-12-8	1,2-Dibromo-3-chloropropane		6.3	U
120-82-1	1,2,4-Trichlorobenzene		6.3	U
87-61-6	1,2,3-Trichlorobenzene		6.3	U

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9/17/07

SOM01.1 (5/2005)

: 00180

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07

Sample wt/vol: 4.04 (g/mL) g Lab File ID: VE004627.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. 1.0 Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg Purge Volume: 10 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	71	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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00181

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07RE

Sample wt/vol: 3.88 (g/mL) g

Lab File ID: VE004632.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
75-71-8	Dichlorodifluoromethane	6.5	U
74-87-3	Chloromethane	6.5	U
75-01-4	Vinyl Chloride	6.5	U
74-83-9	Bromomethane	6.5	U
75-00-3	Chloroethane	6.5	U
75-69-4	Trichlorofluoromethane	6.5	U
75-35-4	1,1-Dichloroethene	6.5	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.5	U
67-64-1	Acetone	23	
75-15-0	Carbon disulfide	6.5	U
79-20-9	Methyl acetate	31	
75-09-2	Methylene chloride	13	
156-60-5	trans-1,2-Dichloroethene	6.5	U
1634-04-4	Methyl tert-Butyl ether	6.5	U
75-34-3	1,1-Dichloroethane	6.5	U
156-59-2	cis-1,2-Dichloroethene	6.5	U
78-93-3	2-Butanone	38	
74-97-5	Bromochloromethane	6.5	U
67-66-3	Chloroform	6.5	U
71-55-6	1,1,1-Trichloroethane	6.5	U
110-82-7	Cyclohexane	6.5	U
56-23-5	Carbon Tetrachloride	6.5	U
71-43-2	Benzene	6.5	U
107-06-2	1,2-Dichloroethane	6.5	U
123-91-1	1,4-Dioxane	130	OR

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SOM01.1 (5/2005)

: 00198

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-07RE

Sample wt/vol: 3.88 (g/mL) g

Lab File ID: VE004632.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec. 1

Date Analyzed: 08/22/2007

GC Column: RTX-VMS ID: 0.18 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 10 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
79-01-6	Trichloroethene		6.5	U
108-87-2	Methylcyclohexane		6.5	U
78-87-5	1,2-Dichloropropane		6.5	U
75-27-4	Bromodichloromethane		6.5	U
10061-01-5	cis-1,3-Dichloropropene		6.5	U
108-10-1	4-Methyl-2-pentanone		13	U
108-88-3	Toluene		6.5	U
10061-02-6	trans-1,3-Dichloropropene		6.5	U
79-00-5	1,1,2-Trichloroethane		6.5	U
127-18-4	Tetrachloroethene		6.5	U
591-78-6	2-Hexanone		13	U
124-48-1	Dibromochloromethane		6.5	U
106-93-4	1,2-Dibromoethane		6.5	U
108-90-7	Chlorobenzene		6.5	U
100-41-4	Ethylbenzene		6.5	U
95-47-6	o-Xylene		6.5	U
179601-23-1	m,p-Xylene		8.5	
100-42-5	Styrene		6.5	U
75-25-2	Bromoform		6.5	U
98-82-8	Isopropylbenzene		6.5	U
79-34-5	1,1,2,2-Tetrachloroethane		6.5	U
541-73-1	1,3-Dichlorobenzene		6.5	U
106-46-7	1,4-Dichlorobenzene		6.5	U
95-50-1	1,2-Dichlorobenzene		6.5	U
96-12-8	1,2-Dibromo-3-chloropropane		6.5	U
120-82-1	1,2,4-Trichlorobenzene		6.5	U
87-61-6	1,2,3-Trichlorobenzene		6.5	U

[Signature]

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SOM01.1 (5/2005)

: 00199

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Not to Report

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM

Case No.: 36737

Mod. Ref No.: _____

SDG No.: J8B47

Matrix: (SOIL/SED/WATER)

SOIL

Lab Sample ID:

Y4048-07RE

Sample wt/vol:

3.88

(g/mL)

g

Lab File ID:

VE004632.D

Level: (TRACE or LOW/MED)

LOW

Date Received:

08/18/2007

% Moisture: not dec.

1.0

Date Analyzed:

08/22/2007

GC Column:

RTX-VMS

ID: 0.18

(mm)

Dilution Factor:

1.0

Soil Extract Volume:

(uL)

Soil Aliquot Volume:

(uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg)

ug/Kg

Purge Volume:

10

(mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	000087-44-5	Caryophyllene	14.03	190	JN
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

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9/17/07

: 00200

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/L
75-71-8	Dichlorodifluoromethane	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U
67-64-1	Acetone	10	U
75-15-0	Carbon disulfide	5.0	U
79-20-9	Methyl acetate	5.0	U
75-09-2	Methylene chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl tert-Butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-Butanone	10	U
74-97-5	Bromochloromethane	5.0	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
110-82-7	Cyclohexane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
123-91-1	1,4-Dioxane	100	PR

R

9/17/07

SOM01.1 (5/2005)

: 00215

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6	Trichloroethene		5.0	U
108-87-2	Methylcyclohexane		5.0	U
78-87-5	1,2-Dichloropropane		5.0	U
75-27-4	Bromodichloromethane		5.0	U
10061-01-5	cis-1,3-Dichloropropene		5.0	U
108-10-1	4-Methyl-2-pentanone		10	U
108-88-3	Toluene		5.0	U
10061-02-6	trans-1,3-Dichloropropene		5.0	U
79-00-5	1,1,2-Trichloroethane		5.0	U
127-18-4	Tetrachloroethene		5.0	U
591-78-6	2-Hexanone		10	U
124-48-1	Dibromochloromethane		5.0	U
106-93-4	1,2-Dibromoethane		5.0	U
108-90-7	Chlorobenzene		5.0	U
100-41-4	Ethylbenzene		5.0	U
95-47-6	o-Xylene		5.0	U
179601-23-1	m,p-Xylene		5.0	U
100-42-5	Styrene		5.0	U
75-25-2	Bromoform		5.0	U
98-82-8	Isopropylbenzene		5.0	U
79-34-5	1,1,2,2-Tetrachloroethane		5.0	U
541-73-1	1,3-Dichlorobenzene		5.0	U
106-46-7	1,4-Dichlorobenzene		5.0	U
95-50-1	1,2-Dichlorobenzene		5.0	U
96-12-8	1,2-Dibromo-3-chloropropane		5.0	U
120-82-1	1,2,4-Trichlorobenzene		5.0	U
87-61-6	1,2,3-Trichlorobenzene		5.0	U

9/17/07

SOM01.1 (5/2005)

: 00215

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER

Lab Sample ID: Y4048-08

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007873.D

Level: (TRACE or LOW/MED) LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

Purge Volume: 5 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	1E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

ES
9/17/07

: 00217

1A - FORM I VOA-1
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007874.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
75-71-8	Dichlorodifluoromethane		5.0	U
74-87-3	Chloromethane		5.0	U
75-01-4	Vinyl Chloride		5.0	U
74-83-9	Bromomethane		5.0	U
75-00-3	Chloroethane		5.0	U
75-69-4	Trichlorofluoromethane		5.0	U
75-35-4	1,1-Dichloroethene		5.0	U
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane		5.0	U
67-64-1	Acetone		10	U
75-15-0	Carbon disulfide		5.0	U
79-20-9	Methyl acetate		5.0	U
75-09-2	Methylene chloride		5.0	U
156-60-5	trans-1,2-Dichloroethene		5.0	U
1634-04-4	Methyl tert-Butyl ether		5.0	U
75-34-3	1,1-Dichloroethane		5.0	U
156-59-2	cis-1,2-Dichloroethene		5.0	U
78-93-3	2-Butanone		10	U
74-97-5	Bromochloromethane		5.0	U
67-66-3	Chloroform		5.0	U
71-55-6	1,1,1-Trichloroethane		5.0	U
110-82-7	Cyclohexane		5.0	U
56-23-5	Carbon Tetrachloride		5.0	U
71-43-2	Benzene		5.0	U
107-06-2	1,2-Dichloroethane		5.0	U
123-91-1	1,4-Dioxane		100	PR

9/17/07 SOM01.1 (5/2005)

: 00224

1B - FORM I VOA-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER

Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL

Lab File ID: VF007874.D

Level (TRACE/LOW/MED): LOW

Date Received: 08/18/2007

% Moisture: not dec.

Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Purge Volume: 5 (mL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/L	
79-01-6	Trichloroethene		5.0	U
108-87-2	Methylcyclohexane		5.0	U
78-87-5	1,2-Dichloropropane		5.0	U
75-27-4	Bromodichloromethane		5.0	U
10061-01-5	cis-1,3-Dichloropropene		5.0	U
108-10-1	4-Methyl-2-pentanone		10	U
108-88-3	Toluene		5.0	U
10061-02-6	trans-1,3-Dichloropropene		5.0	U
79-00-5	1,1,2-Trichloroethane		5.0	U
127-18-4	Tetrachloroethene		5.0	U
591-78-6	2-Hexanone		10	U
124-48-1	Dibromochloromethane		5.0	U
106-93-4	1,2-Dibromoethane		5.0	U
108-90-7	Chlorobenzene		5.0	U
100-41-4	Ethylbenzene		5.0	U
95-47-6	o-Xylene		5.0	U
179601-23-1	m,p-Xylene		5.0	U
100-42-5	Styrene		5.0	U
75-25-2	Bromoform		5.0	U
98-82-8	Isopropylbenzene		5.0	U
79-34-5	1,1,2,2-Tetrachloroethane		5.0	U
541-73-1	1,3-Dichlorobenzene		5.0	U
106-46-7	1,4-Dichlorobenzene		5.0	U
95-50-1	1,2-Dichlorobenzene		5.0	U
96-12-8	1,2-Dibromo-3-chloropropane		5.0	U
120-82-1	1,2,4-Trichlorobenzene		5.0	U
87-61-6	1,2,3-Trichlorobenzene		5.0	U

SOM01.1 (5/2005)

R
9/17/07

: 00225

1J - FORM I VOA-TIC
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B54

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: _____ SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-09

Sample wt/vol: 5.00 (g/mL) mL Lab File ID: VF007874.D

Level: (TRACE or LOW/MED) LOW Date Received: 08/18/2007

% Moisture: not dec. _____ Date Analyzed: 08/24/2007

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L Purge Volume: 5 (mL)

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.					
02.					
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
	¹ E966796	Total Alkanes	N/A		

¹EPA-designated Registry Number.

SOM01.1 (5/2005)

R
9/17/07

: 00226

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47

Note Repeat

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH


% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy)methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

 : 00820
 9/1/07

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis (2-ethylhexyl) phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

R
9/18/07 : 00821

Not to Repeat

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033506.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007
GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3806-59-5	1,3-Cyclooctadiene, (Z,Z)-	14.15	280	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	240	J

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00822

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

: 00834

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B47RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07 : 00835

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B47RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039468.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.34 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3806-59-5	1,3-Cyclooctadiene, (Z,Z)-	12.15	250	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	250	J

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00836

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B48

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-04

Sample wt/vol: 30.2 (g/mL) g

Lab File ID: BA033500.D

Level: (LOW/MED) LOW

Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N

Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL)

Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0

Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

R
9/10/07

: 00846

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B48

Repat

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-04

Sample wt/vol: 30.2 (g/mL) g Lab File ID: BA033500.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

9/18/07 : 00847

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: SOIL Lab Sample ID: Y4048-04
(SOIL/SED/WATER)
Sample wt/vol: 30.2 (g/mL) g Lab File ID: BA033500.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown3.39	3.39	280	JN
2.		unknown3.79	3.79	190	JN
3.	121080-73-7	Spiro[cyclopropane-1,2-[6.7]d	14.15	310	JN
4.		unknown17.39	17.39	120	JN
5.	62338-42-5	Cyclobutene, 4,4-dimethyl-1-(17.77	100	JN
7.		unknown19.13	19.13	130	JN
8.	29812-79-1	Hydroxylamine, O-decyl-	19.38	100	JN
9.	74744-36-8	1-Dodecen-3-yne	19.56	150	JN
0.	54766-91-5	Bicyclo[10.1.0]tridec-1-ene	19.58	84	JN
1.		unknown20.01	20.01	940	JN
2.	42217-02-7	1-Chloroeicosane	20.75	330	JN
3.		unknown21.66	21.66	310	JN
4.		unknown21.78	21.78	230	JN
5.	1000282-04-8	Methoxyacetic acid, 2-tetrad	22.12	410	JN
6.	62016-79-9	Heptacosane, 1-chloro-	22.91	120	JN
7.	111-02-4	2,6,10,14,18,22-Tetracosahexa	23.09	240	JN
1.		unknown25.41	25.41	110	JN
4.		unknown28.33	28.33	180	J
5.		unknown30.40	30.40	250	J
6.		unknown30.42	30.42	340	J
7.		unknown30.44	30.44	1700	J
8.		unknown30.87	30.87	85	J
9.		unknown30.91	30.91	180	J
0.		unknown30.93	30.93	220	J
		unknown31.32	31.32	310	J
2.		unknown31.71	31.71	96	J
2	E966796	Total Alkanes	N/A	2076	J

2EPA-designated Registry Number

SOM01.1 (5/2005)

R
9/18/07

: 00848

1D - FORM I SV-1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Repeat

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UTK
100-02-7	4-Nitrophenol	330	U

00888

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B49

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07 : 00889

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-05

Sample wt/vol: 30.0 (g/mL) g Lab File ID: BA033499.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.95 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	87-44-5	Caryophyllene	11.77	290	JN
02.	1700-10-3	1,3-Cyclooctadiene	14.16	4100	JN
03.	42217-02-7	1-Chloroeicosane	20.75	210	JN
05.	7683-64-9	Squalene	23.09	270	JN
09.		unknown28.91	28.91	100	JN
10.		unknown29.05	29.05	190	JN
11.		unknown29.08	29.08	76	JN
12.	81038-44-0	3-Bromo-4-hydroxy-5-methoxyphen	30.04	300	JN
13.	1000159-38-5	Cycloheptane, 4-methylene-1-met	30.06	290	JN
14.		unknown30.07	30.07	250	JN
15.		unknown30.35	30.35	82	JN
16.	25246-27-9	1H-Cycloprop[<i>a</i>]azulene, decahyd	30.39	100	JN
17.	98640-10-9	3a,6-Methano-3aH-indene, 2,3,4,	31.31	110	JN
18.		unknown31.71	31.71	77	JN
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	2451	JN

²EPA-designated Registry Number.

9/18/07

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50

Not to Report

Lab Name: Chemtech Consulting Group

Contract: EPW05037

Lab Code: CHEM Case No.: 36737

Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL

Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g

Lab File ID: BA033501.D

Level: (LOW/MED) LOW

Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N

Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	340	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	340	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	340	UJK
100-02-7	4-Nitrophenol	340	U

9/18/07 : 00917

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033501.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	340	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	340	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

 9/18/07

: 00918

Not to Report

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033501.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/24/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
02.		unknown3.79	3.79	170	JN
03.	498-02-2	Ethanone, 1-(4-hydroxy-3-methox	12.34	100	JN
05.	75679-47-9	2-Methoxybenzoic acid, benzyl e	17.11	110	JN
07.		unknown19.43	19.43	84	JN
08.	4549-12-6	1-Naphthalenepropanol, .alpha.-	19.44	82	JN
11.		unknown22.92	22.92	350	JN
12.	1000108-92-4	Farnesol isomer a	23.09	320	JN
13.	14811-95-1	1,19-Eicosadiene	23.30	970	JN
15.	822-23-1	Acetic acid, octadecyl ester	23.92	2600	JN
16.	638-66-4	Octadecanal	25.44	750	JN
18.	1000283-04-0	Pentafluoropropionic acid, unde	26.32	280	JN
19.	645-10-3	1,7-Dimethyl-4-(1-methylethyl)c	26.33	230	JN
20.	77899-10-6	(Z)-14-Tricosenyl formate	28.50	400	JN
21.		unknown28.51	28.51	150	JN
23.	83-46-5	.beta.-Sitosterol	30.39	190	JN
24.		unknown30.4	30.40	630	JN
25.		unknown30.42	30.42	1300	J
26.		unknown30.43	30.43	430	J
27.		unknown30.44	30.44	400	J
28.		unknown30.45	30.45	320	J
29.		unknown30.74	30.74	400	J
30.		unknown30.75	30.75	600	J
		unknown30.76	30.76	860	J
32.		unknown31.44	31.44	91	J
33.		unknown31.45	31.45	130	J
34.		unknown31.46	31.46	74	J
35.		unknown31.47	31.47	110	J
36.	1000194-64-2	4,4,6a,6b,8a,11,12,14b-Octameth	31.84	6900	JN
37.		unknown31.85	31.85	1600	JN
2	E966796	Total Alkanes	N/A	6919	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

R
9/18/07

: 00919

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	340	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	340	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	340	UJK
100-02-7	4-Nitrophenol	340	U

: 00967

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B50RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	340	U
534-52-1	4,6-Dinitro-2-methylphenol	340	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	340	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	U
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

9/18/07 : 00968

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Report

EPA SAMPLE NO.

J8B50RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039462.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 2.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 6.87 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.		unknown2.14	2.14	210	JN
07.	56554-89-3	14-Octadecenal	20.56	940	JN
08.	67860-04-2	Oxirane, heptadecyl-	21.74	460	JN
11.		unknown22.21	22.21	130	JN
12.	1454-84-8	1-Nonadecanol	22.28	120	JN
13.	638-66-4	Octadecanal	23.29	810	JN
16.	83-46-5	.beta.-Sitosterol	24.14	270	JN
17.	83-47-6	.gamma.-Sitosterol	24.15	300	JN
18.	1000210-86-9	17-(1,5-Dimethylhexyl)-10,13-di	24.16	150	JN
19.	55103-80-5	Pregn-5-en-3-ol, 21-bromo-20-me	24.17	160	JN
20.		unknown24.18	24.18	79	JN
21.	1000188-66-5	2(1H)Naphthalenone, 3,5,6,7,8,8	24.27	1400	JN
22.		unknown24.66	24.66	79	JN
23.		unknown24.67	24.67	89	JN
24.		unknown24.81	24.81	5000	JN
25.		unknown25.17	25.17	390	JN
26.	1058-61-3	Stigmast-4-en-3-one	25.57	610	JN
27.		unknown26.09	26.09	230	JN
28.	20475-86-9	Urs-12-en-24-oic acid, 3-oxo-,	26.15	220	JN
29.					
30.					
2	E966796	Total Alkanes	N/A	5055	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 00969

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51

Not to Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-07

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033507.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy)methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	UJK
100-02-7	4-Nitrophenol	330	U

 : 01004

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51

*Not to Report*Lab Name: Chemtech Consulting GroupContract: EPW05037Lab Code: CHEM Case No.: 36737Mod. Ref No.: SDG No.: J8B47Matrix (SOIL/SED/WATER): SOILLab Sample ID: Y4048-07Sample wt/vol: 30.1 (g/mL) gLab File ID: BA033507.DLevel: (LOW/MED) LOWExtraction: (Type) SOXH% Moisture: 1.0 Decanted: (Y/N) NDate Received: 08/18/2007Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	UJK
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo (a) anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis (2-ethylhexyl) phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo (b) fluoranthene	170	U
207-08-9	Benzo (k) fluoranthene	170	U
50-32-8	Benzo (a) pyrene	170	U
193-39-5	Indeno (1,2,3-cd) pyrene	170	U
53-70-3	Dibenzo (a,h) anthracene	170	U
191-24-2	Benzo (g,h,i) perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine*9/18/07*

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Noto Report

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech Consulting Group Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample wt/vol: 30.1 (g/mL) g Lab File ID: BA033507.D
Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH
% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007
Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/25/2007
GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	121080-73-7	Spiro[cyclopropane-1,2-[6.7]dia	14.16	440	JN
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	270	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

9/18/07

: 01006

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039471.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
100-52-7	Benzaldehyde	170	U
108-95-2	Phenol	170	U
111-44-4	Bis(2-chloroethyl) ether	170	U
95-57-8	2-Chlorophenol	170	U
95-48-7	2-Methylphenol	170	U
108-60-1	2,2'-Oxybis(1-chloropropane)	170	U
98-86-2	Acetophenone	170	U
106-44-5	4-Methylphenol	170	U
621-64-7	N-Nitroso-di-n-propylamine	170	U
67-72-1	Hexachloroethane	170	U
98-95-3	Nitrobenzene	170	U
78-59-1	Isophorone	170	U
88-75-5	2-Nitrophenol	170	U
105-67-9	2,4-Dimethylphenol	170	U
111-91-1	Bis(2-chloroethoxy) methane	170	U
120-83-2	2,4-Dichlorophenol	170	U
91-20-3	Naphthalene	170	U
106-47-8	4-Chloroaniline	170	U
87-68-3	Hexachlorobutadiene	170	U
105-60-2	Caprolactam	170	U
59-50-7	4-Chloro-3-methylphenol	170	U
91-57-6	2-Methylnaphthalene	170	U
77-47-4	Hexachlorocyclopentadiene	170	U
88-06-2	2,4,6-Trichlorophenol	170	U
95-95-4	2,4,5-Trichlorophenol	170	U
92-52-4	1,1'-Biphenyl	170	U
91-58-7	2-Chloronaphthalene	170	U
88-74-4	2-Nitroaniline	330	U
131-11-3	Dimethylphthalate	170	U
606-20-2	2,6-Dinitrotoluene	170	U
208-96-8	Acenaphthylene	170	U
99-09-2	3-Nitroaniline	330	U
83-32-9	Acenaphthene	170	U
51-28-5	2,4-Dinitrophenol	330	U JK
100-02-7	4-Nitrophenol	330	U

 : 01018

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B51RE

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039471.D

Level: (LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N) N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
132-64-9	Dibenzofuran	170	U
121-14-2	2,4-Dinitrotoluene	170	U
84-66-2	Diethylphthalate	170	U
86-73-7	Fluorene	170	U
7005-72-3	4-Chlorophenyl-phenylether	170	U
100-01-6	4-Nitroaniline	330	U
534-52-1	4,6-Dinitro-2-methylphenol	330	UJK
86-30-6	N-Nitrosodiphenylamine ¹	170	U
95-94-3	1,2,4,5-Tetrachlorobenzene	170	U
101-55-3	4-Bromophenyl-phenylether	170	U
118-74-1	Hexachlorobenzene	170	U
1912-24-9	Atrazine	170	U
87-86-5	Pentachlorophenol	330	U
85-01-8	Phenanthrene	170	U
120-12-7	Anthracene	170	U
86-74-8	Carbazole	170	U
84-74-2	Di-n-butylphthalate	170	U
206-44-0	Fluoranthene	170	U
129-00-0	Pyrene	170	U
85-68-7	Butylbenzylphthalate	170	U
91-94-1	3,3'-Dichlorobenzidine	170	U
56-55-3	Benzo(a)anthracene	170	U
218-01-9	Chrysene	170	U
117-81-7	Bis(2-ethylhexyl)phthalate	170	U
117-84-0	Di-n-octylphthalate	170	UJK
205-99-2	Benzo(b)fluoranthene	170	U
207-08-9	Benzo(k)fluoranthene	170	U
50-32-8	Benzo(a)pyrene	170	U
193-39-5	Indeno(1,2,3-cd)pyrene	170	U
53-70-3	Dibenzo(a,h)anthracene	170	U
191-24-2	Benzo(g,h,i)perylene	170	U
58-90-2	2,3,4,6-Tetrachlorophenol	170	U

¹Cannot be separated from Diphenylamine

9/18/07 : 01019

1K - FORM I SV-TIC Report
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B51RE

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07RE

Sample wt/vol: 30.1 (g/mL) g Lab File ID: BB039471.D

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SOXH

% Moisture: 1.0 Decanted: (Y/N): N Date Received: 08/18/2007

Concentrated Extract Volume: 500 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 08/28/2007

GPC Cleanup: (Y/N) Y pH: 7.15 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	242794-76-9	Bicyclo[5.2.0]nonane, 2-methyle	9.78	94	JN
02.	33622-26-3	1-Decen-3-yne	12.15	330	JN
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A	320	JN

²EPA-designated Registry Number.

SOM01.1 (5/2005)

: 01020

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B53

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL Lab File ID: BB039481.D

Level: (LOW/MED) Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	Bis(2-chloroethyl) ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-Oxybis(1-chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	Bis(2-chloroethoxy) methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	5.0	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	10	U
83-32-9	Acenaphthene	5.0	U
51-28-5	2,4-Dinitrophenol	10	U
100-02-7	4-Nitrophenol	10	U



: 01033

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

J8B53

Report

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix (SOIL/SED/WATER): WATER Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL Lab File ID: BB039481.D

Level: (LOW/MED) Extraction: (Type) CONT

% Moisture: Decanted: (Y/N) Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-methylphenol	10	U
86-30-6	N-Nitrosodiphenylamine ¹	5.0	U
95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
86-74-8	Carbazole	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U
58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U

¹Cannot be separated from Diphenylamine

SOM01.1 (5/2005)

9/18/07

01034

1K - FORM I SV-TIC Report
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech Consulting Group Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-08

Sample wt/vol: 1000 (g/mL) mL Lab File ID: BB039481.D

Level: (TRACE or LOW/MED) Extraction: (Type) CONT

% Moisture: Decanted: (Y/N): Date Received: 08/18/2007

Concentrated Extract Volume: 1000 (uL) Date Extracted: 08/22/2007

Injection Volume: 1.0 (uL) GPC Factor: 1.0 Date Analyzed: 08/29/2007

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	3744-02-3	4-Penten-2-one, 4-methyl-	1.68	12	JN
02.	141-79-7	3-Penten-2-one, 4-methyl-	2.15	34	A
03.	123-42-2	2-Pentanone, 4-hydroxy-4-methyl	2.66	130	AB
04.		unknown2.91	2.91	5.1	JN
05.		unknown8.36	8.36	11	JN
06.	2240-47-3	Phosphine imide, P,P,P-tripheny	18.74	3.6	JN
07.					
08.					
09.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					
2	E966796	Total Alkanes	N/A		

²EPA-designated Registry Number.

SOM01.1 (5/2005)

Handwritten: 9/18/07

: 01035

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B47

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample wt/vol: 30.3 (g/mL) g Lab File ID: P7016513.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.34 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		8.1	
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U


9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B48

Lab Name: Chemtech Contract: EPW05037

Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47

Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-04

Sample wt/vol: 30.3 (g/mL) g Lab File ID: P7016516.D

% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007

Extraction: (Type) SOXH Date Extracted: 08/27/2007

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.87 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	ug/Kg
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U

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9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-05
Sample wt/vol: 30.2 (g/mL) g Lab File ID: P7016517.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.95 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	alpha-BHC	1.7	U
319-85-7	beta-BHC	1.7	U
319-86-8	delta-BHC	1.7	U
58-89-9	gamma-BHC (Lindane)	1.7	U
76-44-8	Heptachlor	1.7	U
309-00-2	Aldrin	1.7	U
1024-57-3	Heptachlor epoxide	1.7	U
959-98-8	Endosulfan I	1.7	U
60-57-1	Dieldrin	3.3	U
72-55-9	4,4'-DDE	3.3	U
72-20-8	Endrin	3.3	U
33213-65-9	Endosulfan II	3.3	U
72-54-8	4,4'-DDD	3.3	U
1031-07-8	Endosulfan sulfate	3.3	U
50-29-3	4,4'-DDT	3.3	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	3.3	U
7421-93-4	Endrin aldehyde	3.3	U
5103-71-9	alpha-Chlordane	1.7	U
5103-74-2	gamma-Chlordane	1.7	U
8001-35-2	Toxaphene	170	U


9/18/07


1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B50

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06
Sample wt/vol: 30.2 (g/mL) g Lab File ID: P7016518.D
% Moisture: 2 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 6.87 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		3.3	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U


9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B51

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample wt/vol: 30.1 (g/mL) g Lab File ID: P7016519.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SOXH Date Extracted: 08/27/2007
Concentrated Extract Volume: 5000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 2.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) Y pH: 7.30 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
319-84-6	alpha-BHC		1.7	U
319-85-7	beta-BHC		1.7	U
319-86-8	delta-BHC		1.7	U
58-89-9	gamma-BHC (Lindane)		1.7	U
76-44-8	Heptachlor		1.7	U
309-00-2	Aldrin		1.7	U
1024-57-3	Heptachlor epoxide		1.7	U
959-98-8	Endosulfan I		1.7	U
60-57-1	Dieldrin		3.3	U
72-55-9	4,4'-DDE		7.6	U
72-20-8	Endrin		3.3	U
33213-65-9	Endosulfan II		3.3	U
72-54-8	4,4'-DDD		3.3	U
1031-07-8	Endosulfan sulfate		3.3	U
50-29-3	4,4'-DDT		3.3	U
72-43-5	Methoxychlor		17	U
53494-70-5	Endrin ketone		3.3	U
7421-93-4	Endrin aldehyde		3.3	U
5103-71-9	alpha-Chlordane		1.7	U
5103-74-2	gamma-Chlordane		1.7	U
8001-35-2	Toxaphene		170	U

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9/18/07

1G - FORM I PEST
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Name: Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-08
Sample wt/vol: 1000 (g/mL) mL Lab File ID: P7016522.D
% Moisture: Decanted: (Y/N) Date Received: 08/18/2007
Extraction: (Type) CONT Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/29/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U

R
9/18/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B47

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-01
Sample 30.0 (g/mL) g Lab File ID: P5015714.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SOXH) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 7.34 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

R
9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B48

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-04
Sample 30.2 (g/mL) g Lab File ID: P5015715.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SONC) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 6.87 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B49

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-05
Sample 30.2 (g/mL) g Lab File ID: P5015716.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type SONC) Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 6.95 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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9/19/07

1H - FORM I ARO
 AROCLOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B50

Lab Chemtech Contract: EPW05037
 Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
 Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-06
 Sample 30.2 (g/mL) g Lab File ID: P5015717.D
 % Moisture: 2 Decanted: (Y/N) N Date Received: 08/18/2007
 Extraction: (Type SONC) Date Extracted: 08/22/2007
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
 Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
 GPC N pH: 6.87 Sulfur Cleanup: (Y/N) N
 Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U

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1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B51

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) SOIL Lab Sample ID: Y4048-07
Sample 30.1 (g/mL) g Lab File ID: P5015718.D
% Moisture: 1 Decanted: (Y/N) N Date Received: 08/18/2007
Extraction: (Type) SONC Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/25/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: 7.15 Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U
37324-23-5	Aroclor-1262	33	U
11100-14-4	Aroclor-1268	33	U


9/19/07

1H - FORM I ARO
AROCOR ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J8B53

Lab Chemtech Contract: EPW05037
Lab Code: CHEM Case No.: 36737 Mod. Ref No.: SDG No.: J8B47
Matrix: (SOIL/SED/WATER) WATER Lab Sample ID: Y4048-08
Sample 1000 (g/mL) mL Lab File ID: P5015789.D
% Moisture: Decanted: (Y/N) Date Received: 08/18/2007
Extraction: (Type) SEPF Date Extracted: 08/22/2007
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/30/2007
Injection Volume: 1.0 (uL) GPC Factor: 1.0 Dilution Factor: 1.0
GPC N pH: Sulfur Cleanup: (Y/N) N
Acid Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U
37324-23-5	Aroclor-1262	1.0	U
11100-14-4	Aroclor-1268	1.0	U

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9/19/07

APPENDIX I

Historical Data Summary Tables

TABLE 11
Summary of Tailings Pile Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSLs ^a (mg/kg)	MTCA Method A Cleanup Levels for Industrial Properties ^b (mg/kg)	434238	434224	434225	434226	434227
CLP Sample Number			MJ00BM	MJCG27	MJ00BC	MJ00BD	MJ00BE
Location ID Number			BK01SS	TP01SS	TP01SB	TP02SS	TP02SB
Depth (inches bgs)			0-6	0-6	24-36	0-6	24-36
Description			Background	Source			
Inorganics (mg/kg)							
Arsenic	284	20	5.2	11.9	8.8	15.1	13.6
Barium	100,000	NL	222	6.2 JB	4.9 JB	4.9 JB	6.2 JB
Cadmium	563	2	0.12 U	58.4	42.2	44.5	49.6
Chromium	498	2,000 ^c	20.7	3.4	2.4	5.8	5.8
Cobalt	2,135	NL	8.7 JB	0.34 JB	0.26 U	0.3 JB	0.41 JB
			SQL = 12.3				
Copper	42,177	NL	17.8	46.8	35.6	42.1	91.5
Lead	800	1,000	67.8	1,670	2,260	929	2,130
Manganese	35,171	NL	616	260	251	240	299
Mercury	341	NL	0.06 UJK	1.5 JL	0.95 JL	1.3 JL	1.7 JL
Nickel	22,711	NL	18.4 JK	8 JB	4.7 JB	9.9	10
Selenium	5,678	NL	0.96 U	1.1	0.83 U	0.83 U	1.1
Silver	5,678	NL	0.36 U	0.58 JB	0.56 JB	0.5 JB	0.6 JB
Sodium	NL	NL	234 JB	150 JB	174 JB	124 JB	155 JB
Thallium	79	NL	2.6	1.7 U	1.7 U	1.7 U	1.7 U
Vanadium	5,678	NL	29.7	13.5	8.6 JB	17.3	15.9
Zinc	100,000	NL	245	19,100	11,700	14,600	15,900

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

mg/kg = Milligrams per kilogram

BK = Background

SS = Surface soil sample

TP = Tailings pile

SB = Subsurface soil sample

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

U = Constituent was undetected

c = Chromium III value used

SQL = Sample quantitation limit

K = Sample has an unknown bias

L = Low bias

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 12
Summary of Tailings Pile Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434238	434224	434225	434226	434227
CLP Sample Number			MJ00BM	MJCG27	MJ00BC	MJ00BD	MJ00BE
Location ID Number			BK01SS	TP01SS	TP01SB	TP02SS	TP02SB
Depth (inches bgs)			0-6	0-6	24-36	0-6	24-36
Description			Background	Source			
Gamma Spectroscopy (pCi/g)							
Bismuth-214	NL	NL	0.799	1.2	0.956	2.47	1.67
Cesium-137	0.7	2.1	1.31	0.0239	0.025 UJ	0.0213	0.021 UJ
Potassium-40	10	30	15.2	0.876	1.4 U	1.14	1.04 U
Protactinium-234m	NL	NL	NDL	2.7 J	1.46 J	6.2 J	3.3 J
Lead-212	NL	NL	0.974	0.0945	0.0561	0.0525	0.0666
Lead-214	NL	NL	0.878	1.39	1.06	2.78	1.86
Radium-223	NL	NL	NDL	NDL	NDL	0.386	NDL
Radium-226	1	3	1.41 J	3.46 J	2.81 J	3.25 J	1.54 J
Radium-228	1	3	0.91	0.0692	0.077 UJ	0.099 UJ	0.0556
Thorium-234	NL	NL	NDL	1.76 J	2.04 J	3.73 J	2.5 J
Uranium-235	0.03	0.09	NDL	0.208 J	0.169 J	0.268 J	0.176 J
Bismuth-212	NL	NL	0.98	NDL	0.271	NDL	NDL
Radium-224	NL	NL	0.605	NDL	NDL	NDL	NDL
Thallium-208	1	3	0.289	0.0161	0.0143 U	0.0178	0.0115 U

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SS = Surface soil sample

TP = Tailings pile

SB = Subsurface soil sample

NL = Not listed

U = Constituent was undetected

J = Estimated value

NDL = No detection limit

Bold = Constituent is elevated three times above typical background concentrations

TABLE 13
Summary of Waste Rock Pile Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSLs ^a (mg/kg)	MTCA Method A Cleanup Levels for Industrial Properties ^b (mg/kg)	434238	434207	434208	434209	434210	434211
CLP Sample Number			MJ00BM	MJCG14	MJCG15	MJCG16	MJCG17	MJCG18
Location ID Number			BK01SS	WP01SB	WP02SB	WP03SB	WP04SB	WP05SB
Depth (inches bgs)			0-6	24-36	24-36	24-36	24-36	24-36
Description			Background	Source				
Inorganics (mg/kg)								
Arsenic	284	20	5.2	18.4	16.4	44	17.2	25.5
Barium	100,000	NL	222	20.8 JB	16.5 JB	28.8 JB	12.7 JB	21 JB
Cadmium	563	2	0.12 U	23.3	13	16	2.8	3.2
Chromium	498	2,000 ^c	20.7	1.8 JB	1.1 JB	4.7	2.2	1.3 JB
Cobalt	2,135	NL	8.7 JB	0.5 JB	0.28 JB	2.0 JB	0.56 JB	0.49 JB
			SQL = 12.3					
Copper	42,177	NL	17.8	13.6	6 U	14.5	8.7	11.2
Lead	800	1,000	67.8	3,850	4,930	810	351	575
Manganese	35,171	NL	616	245	210	262	197	116
Mercury	341	2	0.06 UJK	1.1	1.0	0.71	0.34	1.5
			0.1 UAC					
Nickel	22,711	NL	18.4 JK	15.1 JK	11.9 JK	35.7 JK	20.4 JK	14.9 JK
				11.2 AC	8.81 AC	26.4 AC	15.1 AC	11 AC
Selenium	5,678	NL	0.96 U	1.1	0.8 U	1.5	0.8 U	0.82 U
Thallium	79	NL	2.6	1.8 JB	2.2	3.2	1.6 U	1.7 U
Vanadium	5,678	NL	29.7	11.4	8.9 JB	24.6	20.2	13.9
Zinc	100,000	NL	245	7,310	3,830	7,420	729	1,040

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

mg/kg = Milligrams per kilogram

BK = Background

SS = Surface soil sample

WP = Waste pile

SB = Subsurface soil sample

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

U = Constituent was undetected

c = Chromium III value used

SQL = Sample quantitation limit

K = Sample has an unknown bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 14
Summary of Waste Rock Pile Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434238	434207	434208	434209	434210	434211
CLP Sample Number			MJ00BM	MJCG14	MJCG15	MJCG16	MJCG17	MJCG18
Location ID Number			BK01SS	WP01SB	WP02SB	WP03SB	WP04SB	WP05SB
Depth (inches bgs)			0-6	24-36	24-36	24-36	24-36	24-36
Description			Background	Source				
Gamma Spectroscopy (pCi/g)								
Bismuth-214	NL	NL	0.799	4.23	3.11	2.34	1.57	1.5
Cesium-137	0.3	2.1	1.31	0.0659	0.0189	0.028 UJ	0.021 UJ	0.0733
Potassium-40	10	30	15.2	2.09 U	1.33 U	3.45 U	1.72 U	1.25 U
Protactinium-234m	NL	NL	NDL	4.8 J	5.12 J	4.78 J	2.38 J	2.51 J
Lead-212	NL	NL	0.974	0.118	0.101	0.23	0.116	0.0709
Lead-214	NL	NL	0.878	4.9	3.45	2.61	1.78	1.71
Radium-223	NL	NL	NDL	0.329	0.218	0.194	0.126	0.184
Radium-226	1	3	1.41 J	11.1 J	5.48 J	3.01 J	1.17 J	4.19 J
Radium-228	1	3	0.91	0.0938	0.0749	0.177 J	0.083	0.069 UJ
Radon-219	NL	NL	NDL	0.275	0.214	NDL	0.132	NDL
Thorium-227	NL	NL	NDL	0.4	0.278	NDL	NDL	NDL
Thorium-234	NL	NL	NDL	4.11 J	3.01 J	2.78 J	2.07 J	1.67 J
Uranium-235	0.03	0.09	NDL	0.654 J	0.161 J	0.234 J	0.18 J	0.248 J
Bismuth-212	NL	NL	0.98	NDL	NDL	NDL	0.123	NDL
Radium-224	NL	NL	0.605	NDL	NDL	NDL	NDL	0.243
Thallium-208	1	3	0.289	0.036 U	9.0654 U	0.0654 U	0.025 U	0.0158 U

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SS = Surface soil sample

WP = Waste pile

SB = Subsurface soil sample

NL = Not listed

U = Constituent was undetected

J = Estimated value

NDL = No detection limit

Bold = Constituent is elevated three times above typical background concentrations

TABLE 15
Summary of Abandon Container Drum Area Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSLs ^a (mg/kg)	MTCA Method A Cleanup Levels for Industrial Properties ^b (mg/kg)	434238	434212	434213	434214	434215	434216	434217
CLP Sample Number			MJ00BM	MJCG19	MJCG20	MJCG21	MJCG22	MJCG23	MJCG24
Location ID Number			BK01SS	DA01SS	DA02SS	DA03SS	DA04SS	DA05SS	DA06SS
Depth (inches bgs)			0-6	0-6	0-6	0-6	0-6	0-6	0-6
Description			Background	Source					
Inorganics (mg/kg)									
Arsenic	284	20	5.2	6.9	6.2	13.3	15.3	7.9	64.9
Barium	100,000	NL	222	99.8	107	26.4 JB	189	5.2 JB	57.4
Cadmium	563	2	0.12 U	5.9	9.3	11.5	67.5	8.4	99.5
Chromium	498	2,000 ^c	20.7	19.4	17.5	48.8	10.1	5.5	16.3
Cobalt	2,135	NL	8.7 JB	10.2	9.8 JB	3.3 JB	5.4 JB	0.33 JB	9.4 JB
			SQL = 12.3						
Copper	42,177	NL	17.8	74.8	65.8	236	212	35.1	216
Lead	800	1,000	67.8	705	1,490	5,110	14,600	264	3,640
Manganese	35,171	NL	616	519	450	342	338	219	300
Mercury	341	2	0.06 UJK	0.26 JK	0.25 JK	0.97	1.9	0.35 JK	6
			0.1 UAC	0.14 AC	0.14 AC			0.19 AC	
Nickel	22,711	NL	18.4 JK	22.2 JK	19.7 JK	25.1 JK	20.2 JK	5.7 JB	37.2 JK
				16.4 AC	14.6 AC	18.6 AC	15 AC		27.6 AC
Selenium	5,678	NL	0.96 U	1.4 JB	1.2 U	1.1 U	3	0.94 U	2.1
Thallium	79	NL	2.6	3.4	3.1	2.3 U	2.8	1.9 U	4.1
Vanadium	5,678	NL	29.7	18.5	18.3	18.5	22.4	21.2	19.5
Zinc	100,000	NL	245	1,860	3,400	2,900	21,800	1,790	36,200

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

mg/kg = Milligrams per kilogram

BK = Background

SS = Surface soil sample

DA = Drum area

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

U = Constituent was undetected

c = Chromium III value used

SQL = Sample quantitation limit

K = Sample has an unknown bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 16
Summary of Abandon Container Drum Area Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434238	434212	434213	434214	434215	434216	434217
CLP Sample Number			MJ00BM	MJCG19	MJCG20	MJCG21	MJCG22	MJCG23	MJCG24
Location ID Number			BK01SS	DA01SS	DA02SS	DA03SS	DA04SS	DA05SS	DA06SS
Depth (inches bgs)			0-6	0-6	0-6	0-6	0-6	0-6	0-6
Description			Background	Source					
Gamma Spectroscopy (pCi/g)									
Bismuth-214	NL	NL	0.799	2.28	0.943	3.45	2.48	6.45	3.7
Cesium-137	0.3	2.1	1.31	1.01	1.03	0.317	0.907	0.17	0.599
Potassium-40	10	30	15.2	12.7	13.3	1.61	4.05	0.948	9.23
Protactinium-234m	NL	NL	NDL	2.18 J	NDL	10.7 J	4.39 J	6 J	8.25 J
Lead-212	NL	NL	0.974	1.27	1.11	0.16	0.332	0.0776	0.595
Lead-214	NL	NL	0.878	2.54	1.05	3.86	2.77	7.04	4.04
Radium-223	NL	NL	NDL	0.221	NDL	0.519	NDL	0.554	0.366
Radium-226	1	3	1.41 J	7.11 J	1.45 J	6.11 J	2.56 J	9.06 J	9.98 J
Radium-228	1	3	0.91	1.12	1.03	0.18 UJ	0.278	0.24 UJ	0.606
Radon-219	NL	NL	NDL	NDL	NDL	0.401	NDL	0.652	NDL
Thorium-227	NL	NL	NDL	0.171	NDL	0.466	NDL	0.561	NDL
Thorium-234	NL	NL	NDL	3.24 J	NDL	4.96 J	3.46 J	7.36 J	3.3 J
Uranium-235	0.03	0.09	NDL	0.425 J	NDL	0.348 J	0.289 J	0.431 J	0.594 J
Bismuth-212	NL	NL	0.98	1.01	1.27	0.335	NDL	NDL	0.907
Radium-224	NL	NL	0.605	0.946	0.842	NDL	NDL	NDL	NDL
Thallium-208	1	3	0.289	0.349	0.352	0.0607	0.0903	0.0249	0.187

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SS = Surface soil sample

DA = Drum area

NL = Not listed

NDL = No detection limit

J = Estimated value

U = Constituent was undetected

Bold = Constituent is elevated three times above typical background concentrations

TABLE 17
Summary of Abandon Container Drum Area Semi-volatile Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSLs ^a (mg/kg)	MTCA Method A Cleanup Levels for Industrial Properties ^b (µg/kg)	434238	434212	434213	434214	434215	434216	434217
CLP Sample Number			MJ00BM	MJCG19	MJCG20	MJCG21	MJCG22	MJCG23	MJCG24
Location ID Number			BK01SS	DA01SS	DA02SS	DA03SS	DA04SS	DA05SS	DA06SS
Depth (inches bgs)			0-6	0-6	0-6	0-6	0-6	0-6	0-6
Description			Background	Source					
SVOCs (µg/kg)									
2,4-Dimethylphenol	13,680,000,000	NL	NA	59.3 U	89.5	166	778	161	278
4-Methylphenol	3,420,000,000	NL	NA	80.8 JQ	101 JQ	158	277	124	138
9H-Fluorene	NL	NL	NA	12.8 JQ	72.3 U	53.2 U	29.8 U	36.7 U	38.1 U
Acenaphthene	32,503,000,000	NL	NA	59.3 U	72.3 U	53.2 U	29.8 U	36.7 U	30.3 JQ
Anthracene	100,000,000,000	NL	NA	5.8 JQ	72.3 U	53.2 U	7.5 JQ	36.7 U	38.1 U
Benzaldehyde	68,400,000,000	NL	NA	126 JL	135 JL	37.4 JL	52.9 JQ	5.3 JQ	26.2 JQ
Benzo[b]Fluoranthene	2340000	NL	NA	119 U	145 U	106 U	76.7	73.4 U	76.1 U
Benzoic Acid	100,000,000,000	NL	NA	614	794	539	256 JQ	367 U	381 UJK
Chrysene	234,000,000	NL	NA	59.3 U	72.3 U	53.2 U	70.6	36.7 U	38.1 U
Dibenzofuran	1,738,000,000	NL	NA	59.3 U	72.3 U	10.9 JQ	18.6 JQ	36.7 U	41.8
Ethanone, 1-phenyl-	NL	NL	NA	28.2 JQ	34.5 JQ	10.1 JQ	16.3 JQ	36.7 U	10.9 JQ
Fluoranthene	24,444,000,000	NL	NA	22.4 JQ	72.3 U	21.3 JQ	24.3 JQ	36.7 U	11.2 UQ
Indeno(1,2,3-cd)pyrene	NL	NL	NA	296 U	361 U	186 JQ	149 U	184 U	190 U
Naphthalene	209,000,000	5,000,000	NA	59.3 U	72.3 U	53.2 U	31	36.7 U	38.1 U
Naphthalene, 2-methyl-	NL	NL	NA	14.8 JQ	21 JQ	22.8 JQ	51.1	36.7 U	139
Phenanthrene	NL	NL	NA	59.3 U	72.3 U	53.2 U	33.3	36.7 U	19.2 JQ
Phenol	100,000,000,000	NL	NA	101	130 AC	70.1	41.1	43.3	46.3
Phenol, 2-methyl-	34,200,000,000	NL	NA	59.3 U	66.1 JQ	51.1 JQ	196	25.6 JQ	56.5
Pyrene	31,979,000,000	NL	NA	59.3 U	38.6 JQ	19.2 JQ	43.8	36.7 U	11.1 JQ

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels for industrial properties.

µg/kg = Micrograms per kilogram

BK = Background

SS = Surface soil sample

DA = Drum area

NL = Not listed

NA = Not applicable

U = Constituent was undetected

J = Estimated value

Q = Concentration is below the method reporting limit, but above the method detection limit

L = Low bias

K = Sample has an unknown bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 18
Summary of POV Groundwater Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSL for Tap Water ^a * (µg/L)	MTCA Method A Cleanup Levels for Groundwater ^b (µg/L)	4343241	434231	434232
CLP Sample Number			MJ00BW	MJ00BJ	MJ00BK
Location ID Number			BK03GW	PO01GW	PO02GW
Description			Background	Target	
Inorganics (µg/L)					
Arsenic	NL	5	7.4 U	9.8 JB	7.9 JB
Barium	7,300	NL	52.8 JB	64.3 JB	63.9 JB
		NL	SQL = 200 U		
Chromium	NL	50	0.7 U	0.7 U	0.7 JB
Copper	1,356	NL	12.2 JB	8 JB	8.6 JB
		NL	SQL = 25 U		
Manganese	1,703	NL	19.1	245	241
Nickel	730	NL	3 JB	2 JB	3 JB
		NL	SQL = 40 U		
Selenium	183	NL	3.9 U	5.1	3.9 U
Thallium	2.6	NL	10.4	8 U	8 U
Zinc	10,950	NL	32.5	14.8 JB	15.4 JB

Notes:

CLP = Contract Laboratory Program

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

* The HHMSSL best available reference for comparison is Tap Water. According to the National Contingency Plan's (NCP) Ground-Water Goals, "Ground water that is not currently a drinking water source but is potentially a drinking water source in the future would be protected to levels appropriate to its use as a drinking water source."

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Mode Control Act (MTCA) Method A Cleanup Levels for industrial properties.

µg/L = Micrograms per liter

BK = Background

PO = Pend Oreille Village

GW = Groundwater sample

NL = Not listed

J = Estimated value

NA = Not applicable

U = Constituent was undetected

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 19
Summary of POV Groundwater Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	4343241	434231	434232
CLP Sample Number	MJ00BW	MJ00BJ	MJ00BK
Location ID Number	BK03GW	PO01GW	PO02GW
Description	Background	Target	
Gamma Spectroscopy (pCi/L)			
Bismuth-214	28.2 J	1,340 J	1,160 J
Thallium-208	28.4 J	1,400 J	1,200 J

Notes:

CLP = Contract Laboratory Program

pCi/L = Picocurie per liter

BK = Background

GW = Groundwater sample

PO = Pend Oreille Village

J = Estimated value

TABLE 20
Summary of Pend Oreille River Surface Water Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	National Recommended Water Quality Criteria ^a CMC (µg/L)	National Recommended Water Quality Criteria CCC (µg/L)	434239	434234	434236
CLP Sample Number			MJ00BS	MJ00BN	MJ00BQ
Location ID Number			BK02SW	PR01SW	PR02SW
Description			Background	Target	
Inorganics (µg/L)					
Arsenic	340	150	9.5 JB	9.8 JB	7.9 JB
			SQL = 10 U		
Barium	NL	NL	62.4 JB	64.3 JB	63.9 JB
			SQL = 200 U		
Copper	13	9	12.6 JB	10.7 JB	13.2 JB
			SQL = 25 U		
Manganese	NL	NL	4.4 JB	4.5 JB	5 JB
			SQL = 15 U		
Nickel	470	52	2.2 JB	2.2 JB	2.4 JB
			SQL - 40 U		
Zinc	120	120	19.2 JB	14.8 JB	15.4 JB
			SQL = 20 U		

Notes:

CLP = Contract Laboratory Program

a = EPA National Recommended Water Quality Criteria for Priority Toxic Pollutants 2006

CMC = Criteria maximum concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect

CCC = Criterion continuous concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect

µg/L = Micrograms per liter

BK = Background

PR = Pend Oreille River

SW = Surface water sample

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

U = Constituent was undetected

Shading = Constituent is elevated above the National Recommended Water Quality Criteria CMC

Bold = Constituent is elevated above the National Recommended Water Quality Criteria CCC

TABLE 21
Summary of Pend Oreille River Surface Water Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	434239	434234	434236
CLP Sample Number	MJ00BS	MJ00BN	MJ00BQ
Location ID Number	BK02SW	PR01SW	PR02SW
Description	Background	Target	
Gamma Spectroscopy (pCi/L)			
Bismuth-214	7.66 J	NDL	NDL
Thallium-208	1.28	NDL	NDL

Notes:

CLP = Contract Laboratory Program

pCi/L = Picocurie per liter

BK = Background

SW = Surface water sample

PR = Pend Oreille River

J = Estimated value

NDL = No detection limit

TABLE 22
Summary of Pend Oreille River Sediment Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Sediment Quality Standards ^a (mg/kg)	Sediment Cleanup Screening Level/Minimum Cleanup Level ^b (mg/kg)	434240	434235	434237
CLP Sample Number			MJ00BT	MJ00BP	MJ00BR
Location ID Number			BK02SD	PR01SD	PR02SD
Depth (inches bgs)			0-6	0-6	0-6
Description			Background	Target	
Inorganics (mg/kg)					
Arsenic	57	93	7.4	5.2	4.8
Barium	NL	NL	25.9 JB	6.8 JB	65.3
			SQL = 200 U		
Cadmium	5.1	6.7	0.12 U	0.18 JB	1.4
Chromium	260	270	7.8	1.1 JB	9.5
Cobalt	NL	NL	2.1 JB	0.57 J	4.3 JB
			SQL = 50 U		
Copper	390	390	9.3	7.7	28.2
Lead	450	530	7.7	349	827
Manganese	NL	NL	217	166	269
Mercury	0.41	0.59	R	R	0.07 JB
Nickel	NL	NL	5.8 JB	3.1 JB	10.2 JB
			SQL = 40 U		
Silver	6	6	0.24 JB	0.28 JB	0.46 JB
			SQL = 10 U		
Thallium	NL	NL	1.9 U	1.8 U	2.1 U
Vanadium	NL	NL	10.6 JB	1.8 JB	14.5
			SQL = 50 U		
Zinc	410	960	112	173	1,090

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = Washington Department of Ecology WAC 173-204-320

b = Washington Department of Ecology WAC 173-204-420/WAC 173-204-520

mg/kg = Milligrams per kilogram

BK = Background

SD = Sediment sample

PR = Pend Oreille River

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

U = Constituent was undetected

R = Data rejected and is unusable

Shading = Constituent is elevated above the Sediment Quality Standards

Bold = Constituent is elevated above the Sediment Cleanup Screening Level/Minimum Cleanup Level

TABLE 23
Summary of Pend Oreille River Sediment Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434240	434235	434237
CLP Sample Number			MJ00BT	MJ00BP	MJ00BR
Location ID Number			BK02SD	PR01SD	PR02SD
Depth (inches bgs)			0-6	0-6	0-6
Description			Background	Target	
Gamma Spectroscopy (pCi/g)					
Barium-40	NL	NL	0.14 UJ	0.22	0.25 UJ
Bismuth-214	NL	NL	0.457	0.381	1.46
Cesium-137	0.3	2.1	0.00897	0.031 UJ	0.0948
Potassium-40	10	30	7.21	4.27	13.5
Protactinium-234m	NL	NL	2.03 J	1.97 J	NDL
Lead-212	NL	NL	0.378	0.255	0.984
Lead-214	NL	NL	0.514	0.431	1.6
Radium-226	1	3	0.951 J	0.934 J	3.69 J
Radium-228	1	3	0.338	0.273	0.9
Thorium-234	NL	NL	0.474 J	NDL J	1.25 J
Uranium-235	0.03	0.09	NDL	NDL J	0.223 J
Bismuth-212	NL	NL	0.315	0.192	1.23
Radium- 224	NL	NL	0.213	NDL	NDL
Thallium-208	1	3	0.113	0.0813	0.308

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SD = Sediment sample

PR = Pend Oreille River

NL = Not listed

U = Constituent was undetected

J = Estimated value

NDL = No detection limit

Bold = Constituent is elevated three times above typical background concentrations

TABLE 24
Summary of Unnamed Spring Surface Water Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	National Recommended Water Quality Criteria ^a CMC (µg/L)	National Recommended Water Quality Criteria CCC (µg/L)	434239	434201	434203	434205
CLP Sample Number			MJ00BS	MJCG08	MJCG10	MJCG12
Location ID Number			BK02SW	US01SW	US02SW	US03SW
Description			Background	Target		
Inorganics (µg/L)						
Arsenic	340	150	9.5 JB	10.3	8.7 JB	10.4
			SQL = 10 U			
Barium	NL	NL	62.4 JB	53.1 JB	80.4 JB	56.1 JB
			SQL = 200 U			
Cadmium	2	0.25	0.5 U	0.5 U	1.5 JB	0.5 U
Chromium	570 ^b	74 ^b				1.4 JB
Copper	13	9	12.6 JB	9.1 JB	23.1 JB	11.3 JB
			SQL = 25 U	253		
Lead	65	2.5	2.3 U	105	1,340	37.7
Manganese	NL	NL	4.4 JB	11.2 JB	101	46.1
			SQL = 15 U			
Nickel	470	52	2.2 JB	2.8 JB	6.1 JB	3.4 JB
			SQL = 40 U			
Selenium	NL	5	3.9 U	4.6 JB	6.7	3.9 U
Vanadium	NL	NL	0.8 U	2.4 JB	8.2 JB	2.7 JB
Zinc	120	120	19.2 JB	117	547	77.8
			SQL = 20 U			

Notes:

CLP = Contract Laboratory Program

a = EPA National Recommended Water Quality Criteria for Priority Toxic Pollutants 2006

CMC = Criteria maximum concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect

CCC = Criterion continuous concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect

µg/L = Micrograms per liter

BK = Background

SW = Surface water sample

US = Unnamed spring

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

U = Constituent was undetected

NL = Not listed

b = Chromium III value used

Shading = Constituent is elevated above the National Recommended Water Quality Criteria CMC

Bold = Constituent is elevated above the National Recommended Water Quality Criteria CCC

TABLE 25
Summary of Unnamed Spring Surface Water Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	434239	434201	434203	434205
CLP Sample Number	MJ00BS	MJCG08	MJCG10	MJCG12
Location ID Number	BK02SW	US01SW	US02SW	US03SW
Description	Background	Target		
Gamma Spectroscopy (pCi/L)				
Bismuth-214	7.66 J	19.4 J	NDL	23.9 JB
Lead-212	NDL	NDL	4.49	3.76
Lead-214	NDL	12.1 J	NDL	21.5 JB
Thallium-208	1.28	1.5	NDL	1.48

Notes:

CLP = Contract Laboratory Program

pCi/L = Picocurie per liter

BK = Background

SW = Surface water sample

US = Unnamed spring

J = Estimated value

NDL = No detection limit

TABLE 26
Summary of Unnamed Spring Sediment Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Sediment Quality Standards ^a (mg/kg)	Sediment Cleanup Screening Level/Minimum Cleanup Level ^b (mg/kg)	434240	434202	434204	434206
CLP Sample Number			MJ00BT	MJCG09	MJCG11	MJCG13
Location ID Number			BK02SD	US01SD	US02SD	US03SD
Depth (inches bgs)			0-6	0-6	0-6	0-6
Description			Background	Target		
Inorganics (mg/kg)						
Arsenic	57	93	7.4	16.9	4.8	9
Barium	NL	NL	25.9 JB	87	38.8 JB	77.3
			SQL = 200 U			
Cadmium	5.1	6.7	0.12 U	63.9	3.5	0.13 U
Chromium	260	270	7.8	12.4	11.1	25.2
Cobalt	NL	NL	2.1 JB	4.7 JB	3.6 JB	8.7 JB
			SQL = 50 U			
Copper	390	390	9.3	120	17.6	29.9
Lead	450	530	7.7	11,800	842	161
Manganese	NL	NL	217	213	197	266
Mercury	0.41	0.59	R	2.1	0.11 JB	0.07 UJK
Nickel	NL	NL	5.8 JB	21.6 JK	10.7 JK	21.6 JK
			SQL= 40 U	16 AC	7.93 AC	16 AC
Selenium	NL	NL	0.95 U	2.4	0.91 U	1.1 U
Silver	6.1	6.1	0.24 JB	2.3 U	0.46 U	0.54 U
			SQL = 10 U			
Thallium	NL	NL	1.9 U	4.9	1.9 U	2.4 JB
Vanadium	NL	NL	10.6 JB	20.6	20.8	40
			SQL = 50 U			
Zinc	410	960	112	19,800	1,300	360

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = Washington Department of Ecology WAC 173-204-320

b = Washington Department of Ecology WAC 173-204-420/WAC 173-204-520

mg/kg = Milligrams per kilogram

BK = Background

SD = Sediment sample

US = Unnamed spring

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

U = Constituent was undetected

R = Data rejected and is unusable

K = Sample has an unknown bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Sediment Quality Standards

Bold = Constituent is elevated above the Sediment Cleanup Screening Level/Minimum Cleanup Level

TABLE 27
Summary of Unnamed Spring Sediment Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434240	434202	434204	434206
CLP Sample Number			MJ00BT	MJCG09	MJCG11	MJCG13
Location ID Number			BK02SD	US01SD	US02SD	US03SD
Depth (inches bgs)			0-6	0-6	0-6	0-6
Description			Background	Target		
Gamma Spectroscopy (pCi/g)						
Bismuth-214	NL	NL	0.457	2.65	1.44	0.86
Cesium-137	0.3	2.1	0.00897	0.273	0.0514	0.0519
Potassium-40	10	30	7.21	5.32	11.4	19.2
Protactinium-234m	NL	NL	2.03 J	4.42 J	1.95 J	NDL
Lead-212	NL	NL	0.378	0.315	0.588	0.926
Lead-214	NL	NL	0.514	2.82	1.61	0.92
Radium-226	1	3	0.951 J	7.91 J	3.23 J	1.89 J
Radium-228	1	3	0.338	0.26	0.561	0.855
Thorium-227	NL	NL	NDL	0.255	NDL	NDL
Thorium-234	NL	NL	0.474 J	4.22 J	1.3 J	NDL
Uranium-235	0.03	0.09	NDL	0.47 J	0.198 J	NDL
Bismuth-212	NL	NL	0.315	0.398	0.622	0.883
Radium-224	NL	NL	0.213	NDL	NDL	0.947
Thallium-208	1	3	0.113	0.0941	0.163	0.299

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft [EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SD = Sediment sample

US = Unnamed spring

NL = Not listed

J = Estimated value

NDL = No detection limit

Bold = Constituent is elevated three times above typical background concentrations

TABLE 28
Summary of Former Wastewater Drainage Ditch Inorganic Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	EPA Region 6 HHMSSLs ^a (mg/kg)	MTCA Method A Cleanup Levels for Industrial Properties ^b (mg/kg)	434238	434218	434219	434220	434221	434222	434223	434228	434229	434230
CLP Sample Number			MJ00BM	MJCG25	MJCG26	MJCG27	MJCG28	MJCG29	MJCG30	MJ00BE	MJ00BG	MJ00BH
Location ID Number			BK01SS	FD01SS	FD02SS	FD03SS	FD04SS	FD05SS	FD06SS	FD07SS	FD08SS	FD09SS
Depth (inches bgs)			0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Description			Background	Target								
Inorganics (mg/kg)												
Antimony	454	NL	0.89 U	10.1 JB	8.6 JB	0.77 U	1.3 JB	0.91 U	0.85 U	0.77 U	1.2 U	1.1 U
Arsenic	264	20	5.2	31.2	22.1	9.3	13.7	16.8	15.7	12.6 U	12.1	13.5
Barium	100,000	NL	222	63.6	10.8 JB	20.8 JB	20.4 JB	100	51.4	30.5 JB	69.7	109
Cadmium	563	2	0.12 U	26.4	27.8	15.6	23.2	41.8	35	30	28.1	19.9
Chromium	498	2,000 ^c	20.7	133	33.3	4.7	10	9.4	8.3	10.6	7.5	13.9
Cobalt	2,135	NL	8.7 JB	4.8 JB	1.7 JB	0.46 JB	1.0 JB	1.7 JB	0.67 JB	1.2 JB	0.44 JB	6.8 JB
			SQL = 12.3									
Copper	42,177	NL	17.8	3730	658	46.8	132	233	170	858	38	67
Lead	800	1,000	67.8	43,000	23,200	1,250	2,840	5,560	3,870	921	9,520	1,970
Manganese	35,171	NL	616	468	395	217	287	283	278	277	265	784
Mercury	341	2	0.06 UJK	3.9	0.99	0.54	1.0	2.4	1.2 JL	0.34 JL	0.92 JL	0.83 JL
Nickel	22,711	NL	18.4 JK	40.7 JK	22.3 JK	8.0 JB	10.8 JK	13.9 JK	12.1	12.4	9.0	16.6
				30.1481 AC	16.5185 AC		8 AC	10.2963 AC				
Selenium	5,678	NL	0.96 U	6.4	3.5	0.83 U	0.93 U	1.3	1.1 JB	0.84 U	1.3	1.7
Silver	5,678	NL	0.36 U	7.4	3.3 U	0.63 U	0.83 U	1.4 U	1.0 JB	0.49 JB	1.3 JB	0.84 JB
Thallium	79	NL	2.6	3.0	2.3	2.5	1.9 U	2.8	1.9 U	1.7 U	1.6 U	2.3 JB
Vanadium	5,678	NL	29.7	17.5	19	18.7	22.1	21.8	21.9	17.5	18.9	24.3
Zinc	100,000	NL	245	7,890	8,120	4,570	6,160	12,100	11,600	11,100	10,300	6,390

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = EPA Region 6 Human Health Medium Specific Screening Levels 2007

b = Washington Department of Ecology recommended site-specific cleanup levels and Ecology Model Toxics

Control Act (MTCA) Method A Cleanup Levels for industrial properties.

mg/kg = Milligrams per kilogram

BK = Background

SS = Surface soil sample

FD = Former drainage ditch

NL = Not listed

U = Constituent was undetected

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

c = Chromium III value used

SQL = Sample quantitation limit

K = Sample has an unknown bias

L = Low bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Region 6 HHMS Screening Level

Bold = Constituent is elevated above the MTCA Method A Cleanup Level

TABLE 29
Summary of Former Wastewater Drainage Ditch Radionuclide Analytical Results
Grandview Mine Preliminary Assessment/Site Inspection 2001
Metaline Falls, Washington

EPA Sample Number	Typical US Background Concentrations ^a (pCi/g)	3 times US Background Concentrations (pCi/g)	434238	434218	434219	434220	434221	434222	434223	434228	434229	434230
CLP Sample Number			MJ00BM	MJCG25	MJCG26	MJCG27	MJCG28	MJCG29	MJCG30	MJ00BE	MJ00BG	MJ00BH
Location ID Number			BK01SS	FD01SS	FD02SS	FD03SS	FD04SS	FD05SS	FD06SS	FD07SS	FD08SS	FD09SS
Depth (inches bgs)			0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Description			Background	Target					Target			
Gamma Spectroscopy (pCi/g)												
Bismuth-214	NL	NL	0.799	3.87	4.11	4.34	5.24	2.89	2.09	2.29	2.63	1.48
Cesium-137	0.3	2.1	1.31	0.0671	0.07	0.348	0.216	0.421	0.228	0.129	0.053	0.295
Potassium-40	10	30	15.2	1.28	1.34	1.18	1.81	2.89	1.24	0.989	1.09	12.7
Protactinium-234m	NL	NL	NDL	8.37 J	8.79 J	7.14 J	8.89 J	4.87 J	7.39 J	3.96 J	7.08 J	2.28 J
Lead-212	NL	NL	0.974	0.115	0.065	0.085	0.126	0.141	0.0793	0.0762	0.0703	0.918
Lead-214	NL	NL	0.878	4.21	4.39	4.77	5.68	3.11	2.33	2.54	2.86	1.67
Radium-223	NL	NL	NDL	0.415	0.324	0.496	0.531	NDL	0.267	0.218	0.198	0.161
Radium-226	1	3	1.41 J	7.52 J	3.58 J	6.82 J	10.3 J	8.31 J	3.71 J	6.84 J	4.58 J	4.12 J
Radium-228	1	3	0.91	0.11 UJ	0.2 UJ	0.19 UJ	0.14 UJ	0.163	0.12 UJ	0.15 UJ	0.092 UJ	0.864
Radon-219	NL	NL	NDL	0.415	NDL	0.385	0.582	0.247	NDL	NDL	NDL	NDL
Thorium-227	NL	NL	NDL	NDL	NDL	NDL	0.503	0.333	NDL	NDL	0.272	NDL
Thorium-234	NL	NL	NDL	5.29 J	5.55 J	6.38 J	5.27 J	3.69 J	3.57 J	3.58 J	2.98 J	0.689 J
Uranium-235	0.03	0.09	NDL	0.347 J	0.523	0.355 J	0.412 J	0.5 J	0.187 J	0.404 J	0.17 J	0.249 J
Bismuth-212	NL	NL	0.98	NDL	NDL	NDL	NDL	NDL	NDL	NDL	NDL	0.986
Radium-224	NL	NL	0.605	NDL	NDL	NDL	NDL	NDL	NDL	NDL	NDL	0.688
Thallium-208	1	3	0.289	0.0364	0.0223	NDL	0.0332	0.0215	0.0163	NDL	NDL	0.275

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = U.S. EPA, Office of Air and Radiation. Radiation Site Cleanup Regulations: Technical Support
Document for the Development of Radionuclide Cleanup Levels for Soil, Review Draft
[EPA 402-R-96-011 A]. September 1994

pCi/g = Picocurie per gram

BK = Background

SD = Sediment sample

FD = Former drainage ditch

NL = Not listed

NDL = No detection limit

J = Estimated value

U = Constituent was undetected

Bold = Constituent is elevated three times above typical background concentrations

TABLE 30
Summary of Grandview Mine/Mill Surface Water Inorganic Analytical Results
Lower Pend Oreille River Mines and Mills Preliminary Assessment/Site Inspection 2002
Metalline Falls, Washington

EPA Sample Number	National Recommended Water Quality Criteria ^a CMC (µg/L)	National Recommended Water Quality Criteria CCC (µg/L)	1264419	1264415	1264417
CLP Sample Number			MJ0GM8	MJ0GM4	MJ0GM6
Location ID Number			POBK01SW	GMPP04SW	GMPP05SW
Description			Background	PPE	
Inorganics (µg/L)					
Lead	65	2.5	2.8 U	2.8 U	4.1
Manganese	NL	NL	7.7 JB	11.1 JB	25.5
			SQL = 15		
Zinc	120	120	2.8 JB	5.5 JB	20.6
			SQL = 20		

Notes:

CLP = Contract Laboratory Program

a = EPA National Recommended Water Quality Criteria for Priority Toxic Pollutants 2006

CMC = Criteria maximum concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable

CCC = Criterion continuous concentration - estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an

µg/L = Micrograms per liter

PO = Pend Oreille

BK = Background

SW = Surface water sample

GM = Grandview Mine/Mill

PPE = Probable point of entry

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

SQL = Sample quantitation limit

U = Constituent was undetected

TABLE 31
Summary of Grandview Mine/Mill Sediment Inorganic Analytical Results
Lower Pend Oreille River Mines and Mills Preliminary Assessment/Site Inspection 2002
Metline Falls, Washington

EPA Sample Number	Sediment Quality Standards ^a (mg/kg)	Sediment Cleanup Screening Level/Minimum Cleanup Level ^b (mg/kg)	1264420	1264416	1264418
CLP Sample Number			MJ0GM9	MJ0GM5	MJ0GM7
Location ID Number			POBK01SD	GMPP04SD	GMPP05SD
Depth (inches bgs)			0-8	0-8	0-8
Description			Background	PPE	
Inorganics (mg/kg)					
Arsenic	57	93	16.3	4.5	5.2
Barium	NL	NL	183	44.6	110
Cadmium	5.1	6.7	0.57 JB	0.34 U	1.6
			SQL = 0.57		
Chromium	260	270	17.6	7.1	25.5
Copper	390	390	25.9 JL	8.1	84 JL
			31.6 AC		
Lead	450	530	35.7	44	449
Manganese	NL	NL	921	209 JH	313
				169 AC	
Nickel	NL	NL	20.9	5.9 JB	12.3
Vanadium	NL	NL	28.3	9.3 JB	20.1
Zinc	410	960	287	152	864

Notes:

CLP = Contract Laboratory Program

bgs = below ground surface

a = Washington Department of Ecology WAC 173-204-320

b = Washington Department of Ecology WAC 173-204-420/WAC 173-204-520

mg/kg = Milligrams per kilogram

PO = Pend Oreille

BK = Background

SD = Sediment sample

GM = Grandview Mine/Mill

PPE = Probable point of entry

NL = Not listed

J = Estimated value

B = Concentration is below the method reporting limit, but above the instrument detection limit

U = Constituent was undetected

SQL = Sample quantitation limit

L = Low bias

H = High bias

AC = Adjusted concentration

Shading = Constituent is elevated above the Sediment Quality Standards

Bold = Constituent is elevated above the Sediment Cleanup Screening Level/Minimum Cleanup Level