Site Assessment and Remedial Action Report

Bellingham I Meter Station 4175 Britton Road Bellingham, Washington 98226 VCP No.: NW1749

Prepared For:

Northwest Pipeline GP 295 Chipeta Way #1 Salt Lake City, UT 84108

December 2012

Prepared By:

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1.0 INTRODUCTION

On behalf of Northwest Pipeline GP (NWPL GP), Portnoy Environmental (PEI) has prepared this Site Assessment and Remedial Action Report (Report) for the Bellingham I meter station (site). The site is located at 4175 Britton Road in Bellingham, Whatcom County, Washington within the area regulated by the Washington Department of Ecology's (Ecology's) Northwest Regional Office (NWRO). The site is located within NWPL GP's Sumas operational district at the location shown on *Figure BLMS-1*. The site has been enrolled in Ecology's Voluntary Cleanup Program (VCP) with VCP No. NW1749 and site name Northwest Pipeline Bellingham. The Facility/Site Number is 2906.

1.1. Program History

In 2005, NWPL GP began a Capacity Replacement Project (CRP) to replace the existing pipeline due to the DOT-mandated retirement of approximately 270 miles of a natural gas transmission line primarily along the I-5 corridor. As part of the CRP permitting, NWPL GP was required to obtain a Water Quality Certification, which included Permit Condition D11 that required CRP construction areas with potential soil contamination to be evaluated for compliance with Model Toxics Control Act (MTCA) cleanup standards prior to commencing construction. Assessment and, as necessary, remediation were conducted within the CRP construction work spaces where there was the possibility of impacts prior to commencing construction activities.

Following a December 2005 meeting with Ecology regarding Permit Condition D11, Ecology requested and NWPL GP provided a "commitment letter" dated January 19, 2006. The letter stated the company's commitment to assess and, if necessary, remediate its remaining facilities in Washington following CRP. A complete program history is documented in NWPL GP's May 15, 2010 *Update of Northwest Pipeline GP's Washington Cleanup Program Technical Memorandum*.

NWPL GP also assessed and remediated mercury impacts at its' facilities in the early 1990's, although such work was intended to address occupational worker exposures and may not have met MTCA requirements/standards.

1.2. Contaminant of Potential Concern

The primary contaminant of potential concern (COPC) at NWPL GP meter stations was identified as inorganic mercury. The primary source of potential mercury releases, if present, at NWPL GP meter stations was due to accidental spillage of inorganic mercury during historic maintenance and calibration of a certain type of differential pressure manometer (meters) that contained mercury. NWPL GP used such manometers to measure pressure on both sides of an orifice plate in order to calculate flow volumes through the pipeline, laterals, and taps that supply its customers. It is important to note that not all of the manometers historically used by NWPL GP contained mercury and that the installation of such manometers was phased out in the mid-to-late 1980's.

A secondary source of potential mercury releases, if present, at NWPL GP facilities was from "thermowells". Thermowells are test tube-shaped "wells" installed in the meter station piping into which





thermometers were placed to measure gas temperatures. In some instances, mercury was also placed in the well to improve the thermal conductance between the well and thermometer. The placement of mercury in thermowells varied regionally along the NWPL GP pipeline system. The thermowells did not contain large amounts of mercury, but there was the potential for some spillage when a thermowell was filled and/or when a thermometer was inserted and/or removed. The use of mercury in thermowells was phased out by 1993.

As requested by Ecology's Northwest and Southwest Regional Offices (NWRO and SWRO) during CRP, asbestos was added as a COPC at meter stations when historical records or field observations indicated the use of transite siding on the meter buildings. Similarly, the MTCA 5 metals plus copper, nickel and zinc were added as COPCs when sandblast media and/or paint flakes were observed. Since arsenic impacts were also found at a NWPL GP compressor station and the source of the arsenic is not understood; arsenic was added as a COPC at meter stations that had yet to be assessed. These COPCs and the triggers for collecting additional samples were incorporated into all assessment work following the knowledge of these issues in 2008.

Each COPC for a given meter station facility became a contaminant of concern (COC) if it was detected at a concentration that exceeded the potentially applicable MTCA cleanup level.

1.3. Conceptual Model

The conceptual model for the site is a localized release from point sources (meter or thermowell) to surface soils. Other potential sources could include sand blast grit released to surface soil or asbestos impacts associated with transite siding on the meter station building. Data collected during the initial CRP assessment and remedial work suggested that construction activities undertaken between the early '90's remedial action and the current program could have resulted in disturbance and potential spreading of impacted soils. In some isolated instances, clean fill may have been placed over impacted soils. Thus, if spreading and/or covering of impacted soils may have occurred, based upon interviews with NWPL GP operations personnel, the assessment activities were augmented with additional subsurface soil sampling. To limit the potential for "false negative" assessment results, assessment data sets were carefully reviewed for the purpose of evaluating whether adequate subsurface sampling was conducted to address potential spreading and/or covering of impacts.

1.4. Standard Operating Procedures

The assessment and remedial work documented in this Report used two Standard Operating Procedures (SOPs) developed in conjunction with, and approved by, Ecology's NWRO and SWRO. The *Standard Operating Procedure, Grid-Based Soil Sampling Protocol* (Assessment SOP) dated March 2005 documents the general method and practices used during assessment activities and allows for necessary modifications based upon unique site-specific considerations. The *Assessment SOP* specifies the use of an equilateral-triangle grid-based soil sampling program augmented by targeted surface and sub-surface samples at the limits of prior remedial excavations and/or such features as doors.





The Standard Operating Procedure, Soil Remediation and Performance Sampling Protocol (Remediation SOP) dated July 2005 similarly documents the methods and practices for remedial actions and performance sampling and also allows for necessary site-specific considerations/modifications. The Assessment SOP and Remediation SOP have been successfully used to attain numerous no-further-action (NFA) Determinations at other NWPL GP meter stations.

1.5. Objectives

The objectives of the site assessment and remedial actions were to:

- Assess whether COPCs were present in the soil at concentrations exceeding potentially applicable cleanup levels;
- Characterize the concentrations of inorganic mercury at the terminal limits of the former remedial excavation;
- Characterize the horizontal and vertical extent of COCs;
- · Complete a Terrestrial Ecological Evaluation; and
- Bring the site into compliance with the requirements of the Model Toxics Control Act (MTCA; RCW 70.105D) and its implementing regulation WAC 173-340 by completing remedial actions through excavation and off-site disposal to MTCA A cleanup levels.





2.0 CLEANUP LEVELS

The COCs for the Bellingham meter station are arsenic and inorganic mercury.

When evaluating applicable cleanup levels for the COCs at the site, three potential exposure pathways were considered based on the shallow depth of impacts:

- Direct human contact with impacted soils (human health);
- · Protection of groundwater from impacted soil (human health); and
- Plants and wildlife exposures (ecological).

2.1. Human Health Exposure

Since the conceptual model for the site is for a relatively simple release, the MTCA Method A Soil Cleanup Levels (CUL) for Unrestricted Land Uses are considered fully protective of the potential human health exposure pathways of concern. The following CULs were obtained from Table 740-1:

- Arsenic 20 mg/kg
- Mercury 2.0 mg/kg

2.2. Ecological Exposure

To evaluate ecological exposures, NWPL GP developed a program to perform terrestrial ecological evaluations (TEEs) for meter station facilities throughout Washington State. The Ecology-approved approach for the TEEs is documented in NWPL GP's Terrestrial Ecological Evaluation Program Document for Northwest Pipeline GP's Meter Station Facilities throughout Washington State dated May 2011. The results of the TEEs were documented in NWPL GP's Terrestrial Ecological Evaluation Summary Report (TEE Summary Report) dated November 2011. The TEE Summary Report is included on a CD as **Attachment A**. The approved methodologies for completing the TEEs were to:

- 1. Divide the state into representative areas (Northwest Washington, Southwest Washington/Colombia River, Central Washington, and Eastern Washington);
- 2. Establish site groupings and a representative facility within each representative area;
- 3. Collect TEE samples from each representative facility and analyze them for the appropriate terrestrial and ecological protectiveness through bioassay testing and bioaccumulation study; and
- 4. Establish appropriate TEE cleanup levels that are protective of all terrestrial and ecological receptors for each representative area.





The state divisions, site groupings, and representative facilities are summarized in the TEE Summary Report.

The site is located within the Northwest Washington Representative Area. As documented in the TEE Summary Report, the applicable cleanup levels that are protective of all potential terrestrial ecological receptors in the Northwest Washington Representative Area are as follows:

- Arsenic 47 mg/kg
- Mercury 2.5 mg/kg

2.3. Final Cleanup Levels

Based on the discussions above, the CULs that are fully protective of the potential human health or ecological exposure pathways at the site are as follows:

•	Arsenic	20 ma/ka	MTCA Method A Cleanup Level for Unrestricted Land Uses

• Mercury 2.0 mg/kg MTCA Method A Cleanup Level for Unrestricted Land Uses





3.0 SITE ASSESSMENT

The following sections present the site description and history, site assessment methodologies, and site assessment results.

3.1. Site Description and History

The site is a natural gas meter station where gas is being regulated and metered to a local distribution company (LDC) or customer within a fenced enclosure. The site formerly contained two mercury-containing Orifice (A-88) manometers and one thermowell. The meters and thermowell were located above grade over a soil and gravel surface inside a metal building. The meter station is currently secured with a lock and is accessed off Britton Road outside of Bellingham, Washington.

The site underwent site assessment activities in 1990 and site assessment and remedial activities in 1991 and 1992. The 1991 remedial action consisted of removal of seven drums of gravel and soil from under and around the meter stand to a maximum depth of 24-inches. Verification sampling results of two separate composite samples, each collected from five points within the excavation indicated a residual concentration of 2.7 and 53.0 mg/kg mercury in the remediated area. The 1992 remedial action consisted of removal of five drums of gravel and soil from areas under and around the meter stand to a maximum depth of 22-inches. Verification sampling results indicate 4.0 mg/kg mercury in a discrete sample location. The approximate areas of the 1991 and 1992 remedial excavations are depicted on *Figure BLMS-2*.

This site was previously on the Ecology Confirmed or Suspected Contaminated Sites (CSCS) list (Ecology Identifier 2906). This site has undergone a Site Hazard Assessment (SHA) and has been ranked using the Washington Ranking Method (WARM) as a "5".

3.2. Site Assessment Methodologies

In October 2006 and January, March and April 2007, the site underwent site assessment activities according to the Assessment SOP to assess the potential presence of mercury and arsenic in soils. Due to the uncertainty regarding the previous remedial actions, soil samples were also collected at the extents of the former remedial boundaries. The surface soil samples were collected by hand methods by placing the soil directly into the laboratory-supplied jar. Subsurface samples were then collected by using a post-hole digger to excavate the soil to the desired sample depth and then collecting the soil sample with the sample jar.

Figure BLMS-2 illustrates the grid-based and targeted sampling points at the site (along with the arsenic assessment results). Note: All mercury results were below the clean up level. The sampling approach at this facility encompassed the following:

1. Collection of 73 surface soil samples (62 surface samples and eleven field duplicates);





- 2. Collection of 36 subsurface soil samples (32 subsurface samples and four field duplicates) from a depth of 12-22 inches throughout the facility;
- 3. Submittal of 28 soil samples for mercury analysis;
- 4. Submittal of 94 soil samples for arsenic analysis.

3.3. Site Assessment Results

There were no significant deviations from the *Assessment SOP* during site assessment activities. The analytical results for mercury are provided on *Table BLMS-1*. The assessment results for arsenic are presented on *Figure BLMS-2* and *Table BLMS-2*. Laboratory analytical reports are included in *Attachment B*.

The site assessment resulted in complete vertical and horizontal delineation of the shallow soil impacts. The assessment satisfied the requirements of MTCA for evaluating and implementing appropriate remedial actions. No data gaps existed that would have prevented the implementation of an effective remedial action. Based upon the data collected, the only COC at the site that required remediation was arsenic with the impacts to soil being limited to within 1 foot of the surface.





4.0 REMEDIAL ACTION

The following sections discuss the waste characterization and the remedial activities and results.

4.1. Waste Characterization and Handling

The soils characterized by the assessment activities as being impacted by arsenic require appropriate handling and generally require disposal at a Resource Conservation and Recovery Act (RCRA) permitted Subtitle D Landfill.

The Toxicity Characteristic Leaching Procedure (TCLP; EPA Method 1311) was run on the highest detected arsenic concentration (220 mg/kg for BLSS-1113:0) with a TCLP result of <0.050 mg/L. Since this concentration is less than the 5.0 mg/L concentration necessary for these soils to be designated as a hazardous waste under RCRA, all excavated soils from the remedial activities were managed as non-hazardous waste and transported to and disposed of at Waste Management's Wenatchee Subtitle D landfill.

It should also be noted that NWPL GP classifies wastes using "in-situ" samples and not potentially diluted samples collected from excavated materials. Due to this practice, NWPL GP does not classify all wastes at a given facility under the most conservative waste handling codes, but instead segregates and manages wastes at each facility based on the extensive in-situ data.

4.2. Remedial Activities

The remedial activities for arsenic-impacted soil were completed in August 2012. The remedial excavations were completed based upon the results of the site assessment sampling as shown in the corrective action plan presented on *Figure BLMS-3*.

During site setup, the initial limits of the excavation were marked along with proposed depths and waste characterization. Plastic sheeting was placed along the outer edges of the excavation to prevent impacted soil from coming into contact with un-impacted soil. Exclusion zones were established around high-pressure piping and valves to prevent potential contact with those items. The impacted soil was then excavated by hand using shovels and buckets to place the soil into a bobcat, which was then used to place the soil into a roll-off box for transportation to the landfill for disposal.

Once the initial limits of the remedial excavations were completed, performance samples were collected to determine compliance with the arsenic CUL of 20 mg/kg and if any area(s) of the excavation did not comply with the CUL, the remedial excavation was expanded and re-sampled. *Figure BLMS-4* illustrates the initial limits of the remedial excavation at the site.

The locations of performance samples and the corresponding analytical results for the final limits of the remedial excavation are presented on *Figure BLMS-5*. The performance analytical results are summarized in *Table BLMS-3*. Laboratory analytical reports for the performance samples are included in *Attachment C*.





Once the performance samples indicated that the remedial activities were complete, the excavation was backfilled with clean backfill and the site was restored by placing a 5/8-minus gravel cover over the excavated areas. Representative photographs are included in *Attachment D*.

A total of 66.6 tons of non-hazardous soil was transported to Waste Management's Hillsboro landfill in Hillsboro, Oregon under Permit Number 105791WA for disposal. The applicable waste disposition information is included in *Attachment E*.

Since there were no inorganic mercury concentrations present above the CUL of 2.0 mg/kg before the remedial activities for arsenic were completed, no further action is necessary for inorganic mercury.



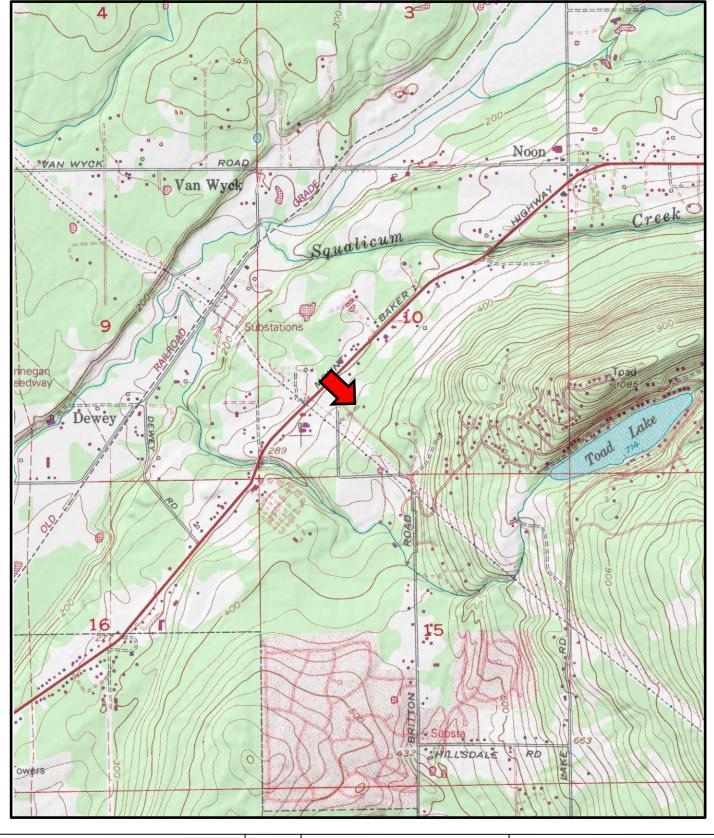


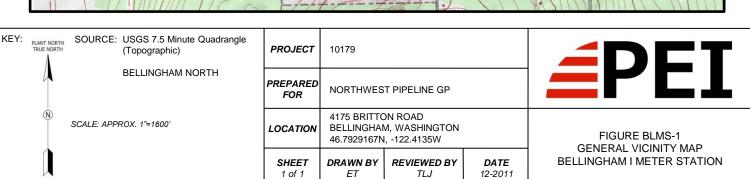
5.0 SITE STATUS AND CONCLUSION

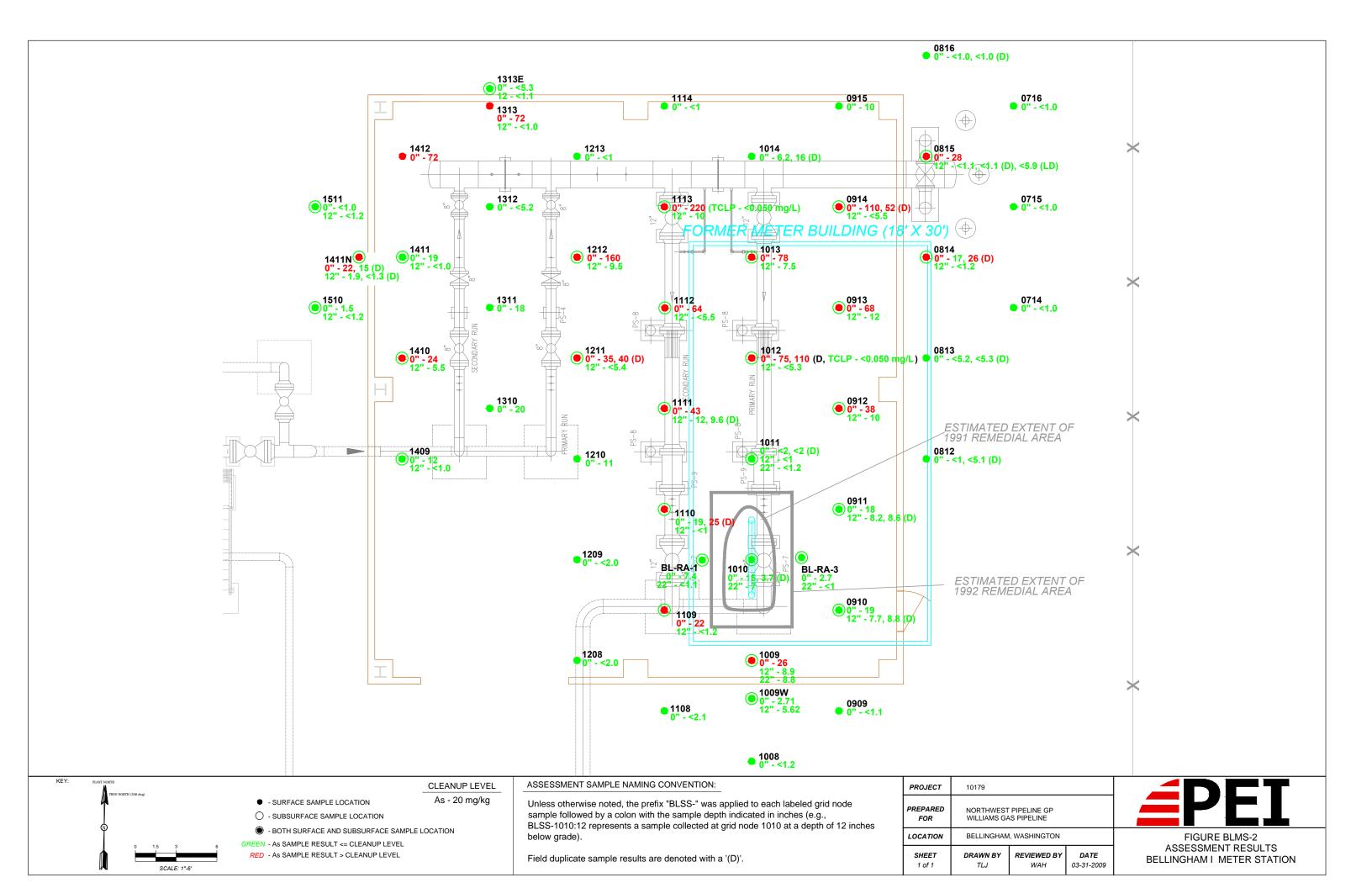
Remedial activities at the Bellingham I meter station have been completed. The site has been assessed and remediated in compliance with MTCA and the remedial action has resulted in compliance with MTCA for unrestricted land uses for the site. Accordingly, NWPL GP has determined that no further action is necessary at the site and requests that Ecology provides an opinion of no further action and removes the site from the CSCS list.

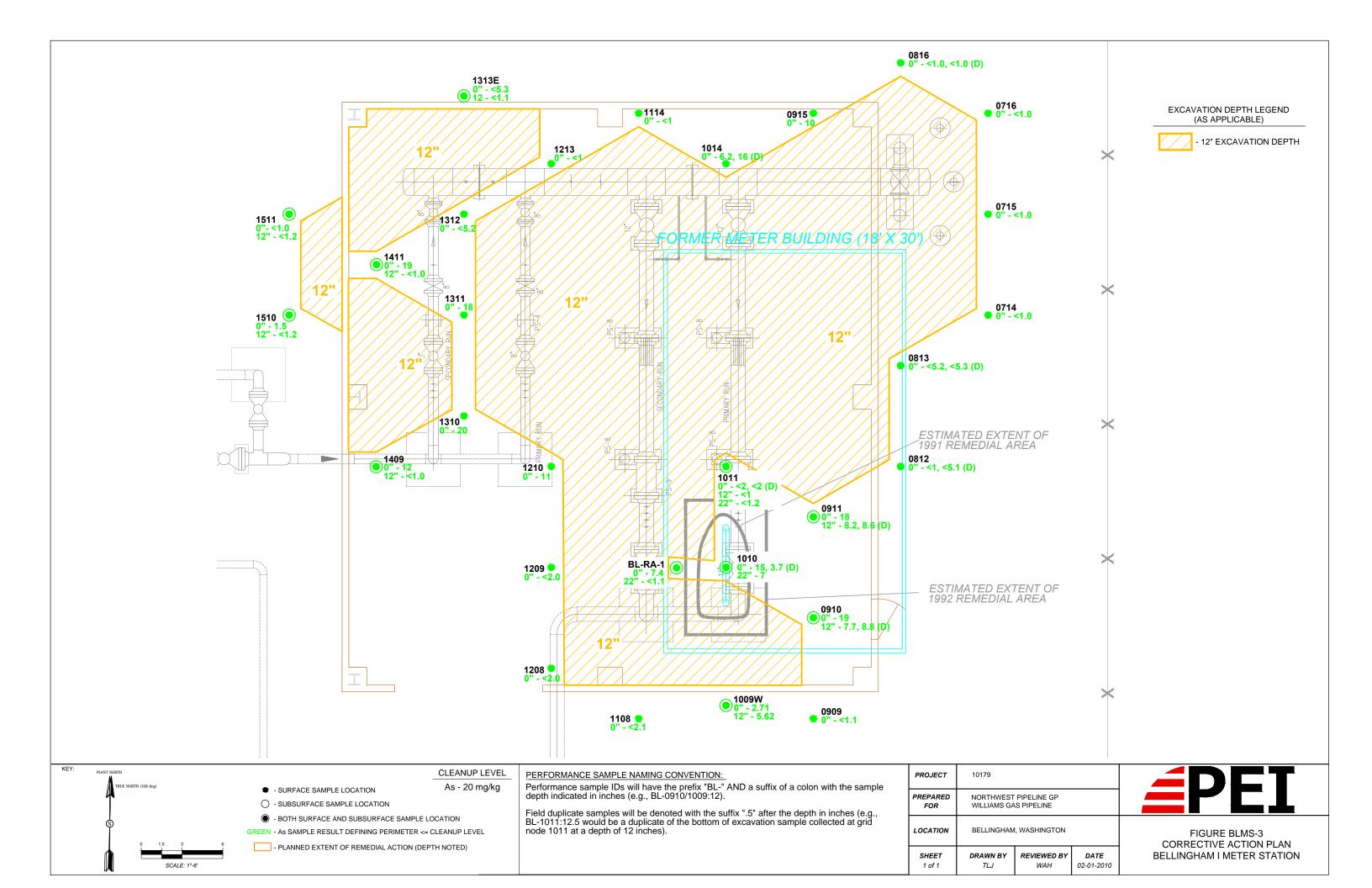


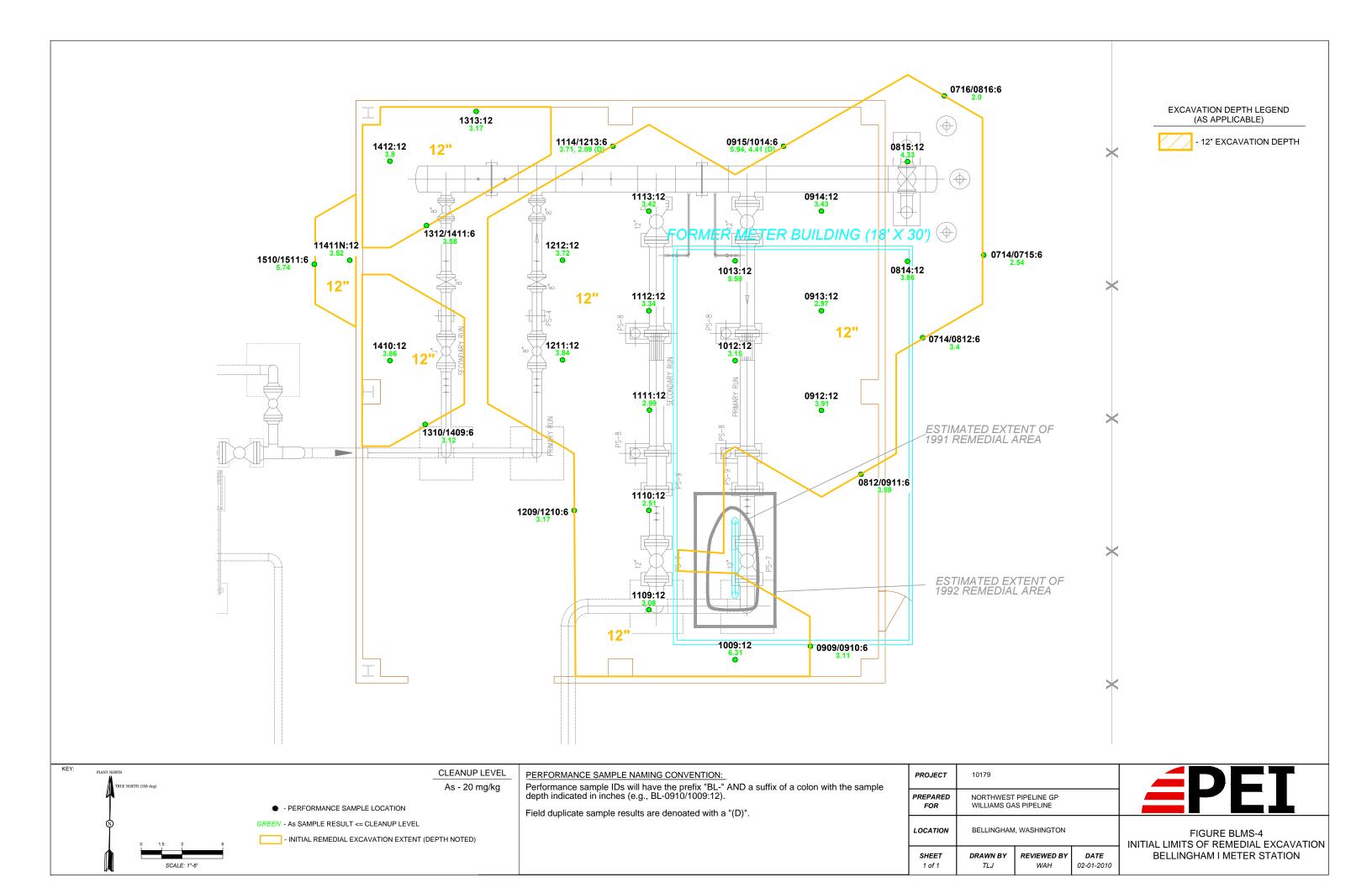












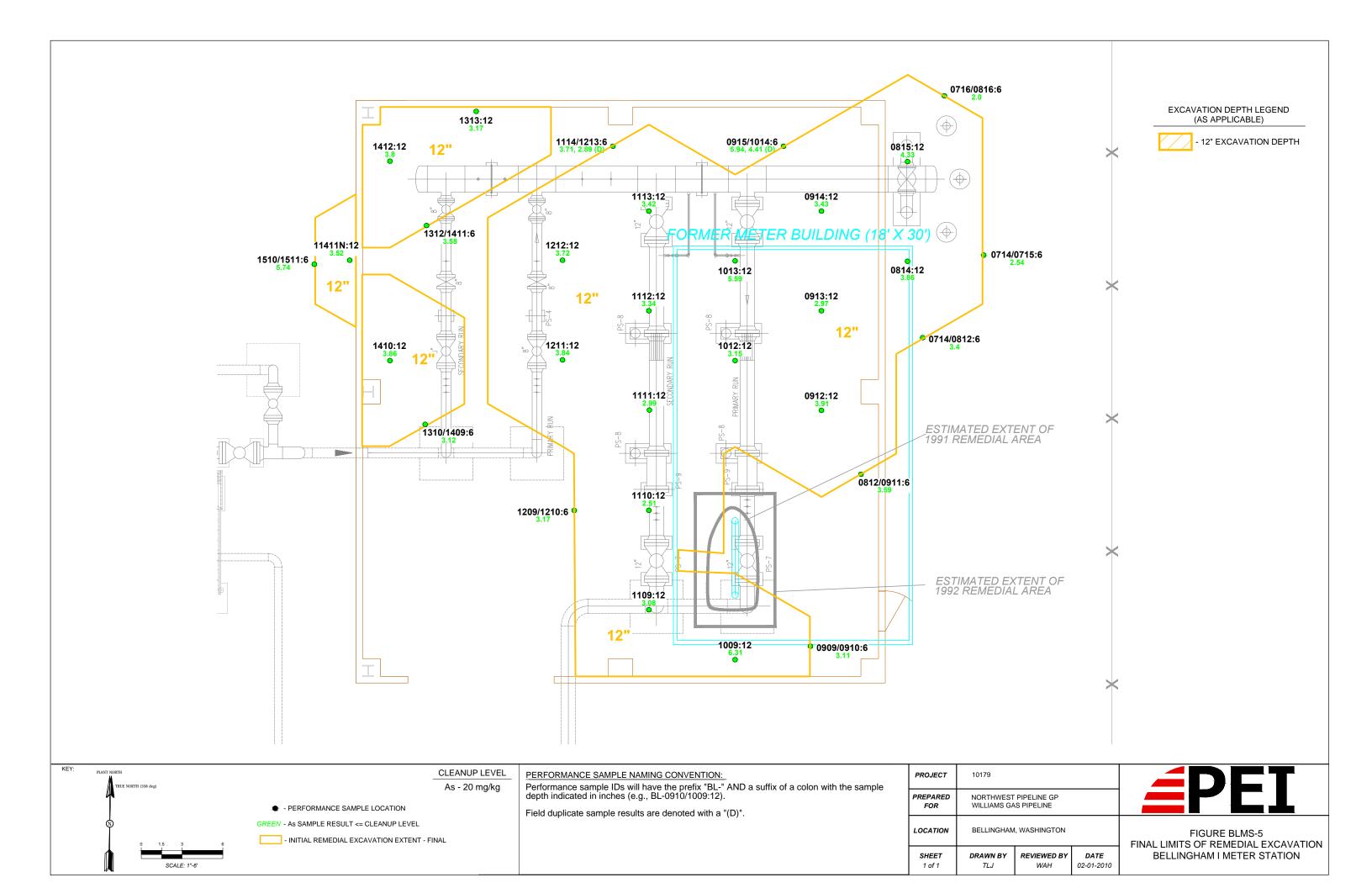


Table BLMS-1 Site Assessment Analytical Results - Mercury Bellingham I Meter Station

VCP Project No.: NW1749

	Depth	Date Collected		Sample Type		Total Mercury
Sample Designation	(inches		Surface	Subsurface	Duplicate	Concentration (mg/kg)
BLSS-0910:0	0	10/17/06	Х			0.06
BLSS-0910:12	12	10/17/06		X		0.031
BLSS-0910:12.5	12	10/17/06		X	Х	<0.023
BLSS-0911:0	0	10/17/06	Х			<0.023
BLSS-0911:12	12	10/17/06		X		<0.021
BLSS-0911:12.5	12	10/17/06		X	Х	<0.022
BLSS-1009:0	0	10/17/06	Х			<0.022
BLSS-1009:12	12	10/17/06		X		<0.022
BLSS-1009:22	22	10/17/06		X		<0.022
BLSS-1010:0	0	10/17/06	Х			<0.021
BLSS-1010:0.5	0	10/17/06	Х		Х	<0.022
BLSS-1010:22	22	10/17/06		X		0.053
BLSS-1011:0	0	10/17/06	Х			<0.02
BLSS-1011:0.5	0	10/17/06	Х		Х	<0.02
BLSS-1011:12	12	10/17/06		X		<0.02
BLSS-1011:22	22	10/17/06		X		0.032
BLSS-1109:0	0	10/17/06	Х			<0.02
BLSS-1109:12	12	10/17/06		X		0.060
BLSS-1110:0	0	10/17/06	Х			<0.021
BLSS-1110:0.5	0	10/17/06	Х		Х	<0.023
BLSS-1110:12	12	10/17/06		X		0.025
BLSS-1313:0	0	3/15/07	Х			<0.020
BLSS-1411:0	0	3/15/07	Х			<0.020
BLSS-1412:0	0	3/15/07	Х			<0.020
BLSS-BL-RA-1:0	0	10/17/06	Х			<0.02
BLSS-BL-RA-1:22	22	10/17/06		X		<0.021
BLSS-BL-RA-3:0	0	10/17/06	Х			<0.022
BLSS-BL-RA-3:22	22	10/17/06		Χ		<0.021
MTCA Method	d A Soil C	leanup Leve	I for Unrest	ricted Land Us	es	2.0

BOLD and shaded gray indicates sample result is above the selected cleanup level

[&]quot;.5" denotes field duplicate sample.

Table BLMS-2 Site Assessment Analytical Results - Arsenic Bellingham I Meter Station

VCP Project No.: NW1749

	Depth	Date Collected		Sample Type	Total Arsenic	
Sample Designation	(inches)		Surface	Subsurface	Duplicate	Concentration (mg/kg)
BLSS-0714:0	0	3/15/07	Х			<1
BLSS-0715:0	0	3/15/07	Х			<1
BLSS-0716:0	0	4/30/07	Х			<1
BLSS-0812:0	0	3/15/07	Х			<1
BLSS-0812:0.5	0	3/15/07	Х		Х	<5.1
BLSS-0813:0	0	3/15/07	Х			<5.2
BLSS-0813:0.5	0	3/15/07	Х		Х	<5.3
BLSS-0814:0	0	3/15/07	Х			17
BLSS-0814:0.5	0	3/15/07	Х		Х	26
BLSS-0814:12	12	3/15/07		Х		<1.2
BLSS-0815:0	0	3/15/07	Х			28
BLSS-0815:12	12	4/30/07		Х		<1.1
BLSS-0815:12.5	12	4/30/07		Х		<1.1
BLSS-0816:0	0	4/30/07	Х			<1.0
BLSS-0816:0.5	0	4/30/07	Х			<1.0
BLSS-0909:0	0	10/17/06	Х			<1.1
BLSS-0910:0	0	10/17/06	Х			19
BLSS-0910:12	12	10/17/06		Х		7.7
BLSS-0910:12.5	12	10/17/06		Х	Х	8.8
BLSS-0911:0	0	10/17/06	Х			18
BLSS-0911:12	12	10/17/06		Х		8.2
BLSS-0911:12.5	12	10/17/06		Х	Х	8.6
BLS-0912:0	0	1/30/07	Х			38
BLSS-0913:0	0	1/30/07	Х			68
BLSS-0914:0	0	3/15/07	Х			110
BLSS-0914:0.5	0	3/15/07	Х		Х	52
BLSS-0914:12	12	3/15/07		Х		<5.5
BLSS-0915:0	0	3/15/07	Х			10.0
BLSS-1008:0	0	10/17/06	Х			<1.2
MTCA Metho	d A Soil C	leanup Level	for Unrestr	icted Land Use	es	20.0

Table BLMS-2 (cont.)

Site Assessment Analytical Results - Arsenic

Bellingham I Meter Station

VCP Project No.: NW1749

	Depth	Date Collected		Sample Type	Total Arsenic	
Sample Designation	(inches)		Surface	Subsurface	Duplicate	Concentration (mg/kg)
BLSS-1009:0	0	10/17/06	Х			26
BLSS-1009:12	12	10/17/06		Х		8.9
BLSS-1009:22	22	10/17/06		Х		8.8
BL-1009W:0	0	8/3/12	Х			2.71
BL-1009W:12	12	8/3/12		Х		5.62
BLSS-1010:0	0	10/17/06	Х			15
BLSS-1010:0.5	0	10/17/06	Х		Х	3.7
BLSS-1010:22	22	10/17/06		Х		7
BLSS-1011:0	0	10/17/06	Х			<2
BLSS-1011:0.5	0	10/17/06	Х		Х	<2
BLSS-1011:12	12	10/17/06		Х		<1
BLSS-1011:22	22	10/17/06		Х		<1.2
BLSS-1012:0	0	1/30/07	Х			75
BLSS-1012:0.5	0	1/30/07	Х		Х	110
BLSS-1012:12	12	1/30/07		Х		<5.3
BLSS-1013:0	0	1/30/07	Х			78
BLSS-1014:0	0	3/15/07	Х			6.2
BLSS-1014:0.5	0	3/15/07	Х		Х	16
BLSS-1108:0	0	10/17/06	Х			<2.1
BLSS-1109:0	0	10/17/06	Х			22
BLSS-1109:12	12	10/17/06		Х		<1.2
BLSS-1110:0	0	10/17/06	Х			19
BLSS-1110:0.5	0	10/17/06	Х		Х	25
BLSS-1110:12	12	10/17/06		Х		<1
BLSS-1111:0	0	10/17/06	Х			43
BLSS-1111:12	12	1/30/07		Х		12
BLSS-1111:12.5	12	1/30/07		Х	Х	9.6
BLSS-1112:0	0	1/30/07	Х			64
BLSS-1112:12	12	1/30/07		Х		<5.5
MTCA Metho	d A Soil C	leanup Level	for Unrestr	icted Land Use	es	20.0

Table BLMS-2 (cont.)

Site Assessment Analytical Results - Arsenic

Bellingham I Meter Station

VCP Project No.: NW1749

	Depth	Date Collected		Sample Type	Total Arsenic	
Sample Designation	(inches)		Surface	Subsurface	Duplicate	Concentration (mg/kg)
BLSS-1113:0	0	1/30/07	Х			220
BLSS-1114:0	0	3/15/07	Х			<1
BLSS-1208:0	0	10/17/06	Х			<2
BLSS-1209:0	0	10/17/06	Х			<2
BLSS-1210:0	0	10/17/06	Х			11
BLSS-1211:0	0	1/30/07	Х			35
BLSS-1211:0.5	0	1/30/07	Х		Х	40
BLSS-1211:12	12	1/30/07		X		<5.4
BLSS-1212:0	0	1/30/07	Х			160
BLSS-1213:0	0	3/15/07	Х			<1
BLSS-1310:0	0	1/30/07	Х			20
BLSS-1311:0	0	1/30/07	Х			18
BLSS-1312:0	0	3/15/07	Х			<5.2
BLSS-1313:0	0	3/15/07	Х			72
BLSS-1313:12	12	4/30/07		X		<1
BLSS-1313E:0	0	4/30/07	Х			<5.3
BLSS-1313E:12	12	4/30/07		X		<1.1
BLSS-1409:0	0	4/30/07	Х			12
BLSS-1409:12	12	4/30/07		X		<1.0
BLSS-1410:0	0	4/30/07	Х			24
BLSS-1410:12	12	4/30/07		X		5.5
BLSS-1411:0	0	3/15/07	Х			19
BLSS-1411:12	12	4/30/07		Х		<1.0
BLSS-1411N:0	0	4/30/07	Х			22
BLSS-1411N:0.5	0	4/30/07	Х		Х	15
BLSS-1411N:12	12	4/30/07		Х		1.9
BLSS-1411N:12.5	12	4/30/07		Х	Х	<1.3
BLSS-1412:0	0	3/15/07	Х			72
BLSS-1510:0	0	4/30/07	Х			1.5
BLSS-1510:12	12	4/30/07		Х		<1.2
MTCA Metho	d A Soil C	leanup Level	for Unrestr	icted Land Use	es	20.0

Table BLMS-2 (cont.)

Site Assessment Analytical Results - Arsenic

Bellingham I Meter Station

VCP Project No.: NW1749

	Depth	Date		Sample Type	Total Arsenic	
Sample Designation	(inches)	Collected	Surface	Subsurface	Duplicate	Concentration (mg/kg)
BLSS-1511:0	0	4/30/07	Х			<1.0
BLSS-1511:12	12	4/30/07		Х		<1.2
BLSS-BL-RA-1:0	0	10/17/06	Х			7.4
BLSS-BL-RA-1:22	22	10/17/06		Х		<1.1
BLSS-BL-RA-3:0	0	10/17/06	Х			2.7
BLSS-BL-RA-3:22	22	10/17/06		Х		<1
MTCA Metho	20.0					

Table BLMS-3 Performance Sample Analytical Results - Arsenic Bellingham I Meter Station

VCP Project No.: NW1749

	Depth Date		Sa	ample Typ	е	Final	Total Arsenic
Sample Designation	(inches)	Collected	Sidewall	Bottom	Duplicate	Performance Sample	Concentration (mg/kg)
BL-0714/0715:6	6	8/7/12	Х			Х	2.54
BL-0714/0812:6	6	8/7/12	X			Х	3.4
BL-0716/0816:6	6	8/7/12	X			Х	2
BL-0812/0911:6	6	8/3/12	Х			X	3.59
BL-0814:12	12	8/3/12		X		X	3.86
BL-0815:12	12	8/3/12		X		Х	4.33
BL-0909/0910:6	6	8/3/12	Х			Х	3.11
BL-0912:12	12	8/3/12		Х		Х	3.91
BL-0913:12	12	8/3/12		X		Х	2.97
BL-0914:12	12	8/3/12		X		Х	3.43
BL-0915/1014:6	6	8/3/12	Х			Х	5.94
BL-0915/1014:6.5	6	8/3/12	Х		Х	Х	4.41
BL-1009:12	12	8/3/12		Х		Х	6.31
BL-1012:12	12	8/3/12		Х		Х	3.15
BL-1013:12	12	8/3/12		Х		Х	5.59
BL-1109:12	12	8/3/12		Х		Х	3.08
BL-1110:12	12	8/3/12		Х		Х	2.51
BL-1111:12	12	8/3/12		Х		Х	2.99
BL-1112:12	12	8/3/12		Х		Х	3.34
BL-1113:12	12	8/3/12		Х		Х	3.42
BL-1114/1213:6	6	8/3/12	Х			Х	3.71
BL-1114/1213:6.5	6	8/3/12	Х		Х	Х	2.89
BL-1209/1210:6	6	8/3/12	Х			Х	3.17
BL-1211:12	12	8/3/12		Х		Х	3.84
BL-1212:12	12	8/3/12		Х		Х	3.72
MTCA	Method A	Soil Cleanup	Level for U	nrestricted	d Land Uses		20.0

Table BLMS-3 (cont.) Performance Sample Analytical Results - Arsenic Bellingham I Meter Station

VCP Project No.: NW1749

Sample Designation	Depth	Date Collected	S	ample Typ	е	Final Performance	Total Arsenic Concentration	
Sample Designation	(inches)		Sidewall	Bottom	Duplicate	Sample	(mg/kg)	
BL-1310/1409:6	6	8/3/12	Х			Х	3.12	
BL-1312/1411:6	6	8/3/12	Х			Х	3.58	
BL-1313:12	12	8/3/12		Х		Х	3.17	
BL-1410:12	12	8/3/12		Х		Х	3.86	
BL-1411N:12	12	8/3/12		Х		Х	3.52	
BL-1412:12	12	8/3/12		Х		Х	3.8	
BL-1510/1511:6	6	8/3/12	Х			Х	5.74	
MTCA	MTCA Method A Soil Cleanup Level for Unrestricted Land Uses							

BOLD and shaded gray indicates sample result is above the selected cleanup level

[&]quot;.5" denotes field duplicate sample.

ATTACHMENT A

TERRESTRIAL ECOLOGICAL EVALUATION SUMMARY REPORT





Terrestrial Ecological Evaluation Summary Report

Northwest Pipeline GP Meter Station Facilities Throughout Washington State

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November 2011

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ATTACHMENTS:

Attachment A - Terrestrial Ecological Evaluation Program, May 2011

Attachment B - Washington State Department of Ecology, Conditional Approval Letter, May 13, 2011

Attachment C - Laboratory Analytical Reports

Attachment D - Nautilus Environmental, Soil Toxicity Evaluation Report

Attachment E – TEE Cleanup Level Calculations

1.0 INTRODUCTION

Environmental Partners, Inc. (EPI) has prepared this Terrestrial Ecological Evaluation Summary Report to document the activities performed and results of the Terrestrial Ecological Evaluations (TEEs) conducted for Northwest Pipeline GP (NWPL GP) meter station facilities located throughout Washington State.

NWPL GP prepared a *Terrestrial Ecological Evaluation Program* document dated April 2011, which was submitted to Ecology on April 15, 2011.

On May 13, 2011, The Washington State Department of Ecology (Ecology) submitted a *Transmittal of Ecology Approval and Comment of the revised Terrestrial Ecological Evaluation Program, Northwest Pipeline GP Meter Station Facilities throughout Washington State, April 2011, prepared by Williams Gas Pipeline; Environmental Partners, Inc; and Portnoy Environmental to NWPL GP, conditionally approving the document. Subsequent to receipt of the conditional approval letter, EPI incorporated the single comment provided by Ecology into the May 2011 <i>Terrestrial Ecological Evaluation Program* document (TEE Program Document). The revised TEE Program Document is included in Attachment A; the conditional approval letter is presented as Attachment B.

1.1 Background

NWPL GP is evaluating the environmental conditions at over 70 meter station facilities throughout Washington State, which have soil impacted with inorganic mercury and/or arsenic, and which have similar site conditions (*i.e.*, uncapped commercial/industrial type facilities, in rural locations, identical site usage, and the same contaminants). The meter station facilities are where gas is being regulated and metered from the main supply pipelines to local distribution companies (LDCs) or wholesale customers.

Based on the similarities of site conditions and COCs, NWPL GP has created a Model TEE approach based on the Site-Specific TEE

2.0 OBJECTIVES

The general objectives of the Model TEE study for NWPL GP meter station facilities were to evaluate the initial soil cleanup levels for inorganic mercury and arsenic of 2 and 20 mg/kg, respectively, for protectiveness of potential ecological receptors.

The specific objectives of the Model TEE were as follows:

- Divide the state into representative areas;
- Establish site groupings and a representative facility within each representative area;
- Collect TEE samples from each representative facility and analyze for appropriate terrestrial and ecological protectiveness through bioassay testing and bioaccumulation study; and

• Establish appropriate TEE cleanup levels that are protective of all terrestrial and ecological receptors for each representative area.

3.0 METHODOLOGY

The methods utilized for conducting the TEEs are described in the following sections and in the TEE Program Document.

3.1 Modified Model TEE based upon Site-Specific TEE

The meter station facilities did not qualify for primary TEE exclusions or for the Simplified TEE process provided in MTCA due to the uncapped and often rural nature of the facilities, and the generally surficial nature of the COCs. As such, a modified model Site-specific TEE process was implemented. The modified model Site-specific TEE is composed of several components. These components include problem formulation and selection and implementation of appropriate terrestrial ecological evaluation methods.

3.1.1 Problem Formulation

A problem formulation was conducted as a part of the TEE in accordance with WAC 173-340-7493(2). Problem formulation includes identification of the chemicals of ecological concern, potential exposure pathways, potential terrestrial ecological receptors, and a toxicological assessment. The elements of the TEE problem formulation are detailed in the TEE Program Document and are summarized as follows:

- The identified chemicals of ecological concern are the COCs for the meter station facilities, inorganic mercury and arsenic.
- The primary exposure pathway for inorganic mercury and arsenic in soil at the NWPL GP meter stations occurs via direct contact.
- Contact with contaminated soil can directly impact vegetation and soil biota.
- The secondary exposure pathway is ingestion of affected vegetation and soil biota containing bioaccumulated COCs at significant levels by ground-feeding birds and mammals.

3.1.2 Site-Specific TEE Method Selection

3.1.2.1 Mercury

Soil containing inorganic mercury at the meter stations has been characterized to the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses of 2 milligrams/kilogram (mg/kg), which is the initially selected cleanup level for NWPL GP meter station facilities.

The Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3) are specified as 0.3 mg/kg, 0.1 mg/kg, and 5.5 mg/kg for Plants, Soil Biota, and Wildlife, respectively. Since wildlife receptors are protected at a soil concentration greater than the initially selected cleanup level of 2 mg/kg, soil at facilities that are in compliance with the 2 mg/kg mercury cleanup level will be protective of wildlife receptors. However, because the selected cleanup level of 2 mg/kg exceeds the limits established for the protection of plants and soil biota, modified site-specific TEE methods were selected in accordance with WAC 173-340-7493 for these potential exposures.

The selected TEE methods for mercury are site-specific soil bioassay for plants and soil biota.

3.1.2.2 Arsenic

Soil containing arsenic at the meter stations has been characterized to the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses of 20 mg/kg, which is the initially selected cleanup level for NWPL GP meter station facilities.

The Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3) are specified as 10 mg/kg, 60 mg/kg, and 7 mg/kg for Plants, Soil Biota, and Wildlife, respectively. Since soil biota receptors are protected at a soil concentration greater than the initially selected cleanup level of 20 mg/kg, soil at facilities that are in compliance with the 20 mg/kg arsenic cleanup level will be protective of soil biota receptors. However, because the selected cleanup level of 20 mg/kg exceeds the limits established for the protection of plants and wildlife, modified site-specific TEE methods were selected in accordance with WAC 173-340-7493 for these potential exposures.

The selected TEE methods for arsenic are site-specific soil bioassay for plants and site-specific bioaccumulation evaluation for wildlife. Calculated indicator concentrations for the Mammalian herbivore surrogate receptor (vole) using the default values supplied in Tables 749-4 and 749-5 indicate that the established initial soil cleanup level for arsenic of 20 mg/kg is protective of mammalian herbivores. As such, the site-specific bioaccumulation evaluations for wildlife were only for mammalian predator species (shrew) and avian predator species (American Robin).

3.2 Site Groupings and Representative Sites

In the May 13, 2011 conditional approval letter, Ecology approved the division of the meter station facilities into four representative groups based on geographic area and regional climate, and the terrestrial ecological evaluation of appropriate representative facilities within each area. Data collected

at the representative facility(s) will be used for determining compliance with TEE for the other meter stations within each representative area.

The rationale for the site groupings is detailed in the TEE Program Document. The proposed representative areas as they relate to the NWPL GP pipeline are depicted on **Figure 1**. The representative facilities and meter station facilities within each area are presented in the following sections.

3.2.1 Northwest Washington Representative Area

The representative facility for the Northwest Washington Representative Area is the Snohomish Compressor Station for both mercury and arsenic.

Data collected at this facility will be considered representative of the following NWPL GP meter station facilities:

- Chehalis
- Evergreen Shores (Black Lake)
- McCleary Aberdeen
- North Seattle Everett
- North Tacoma
- Oak Harbor Stanwood
- Olympia
- Sedro Woolley
- Shelton
- · South Seattle
- · South Tacoma
- Toledo

3.2.2 Southwest Washington/Columbia River Basin Representative Area

The representative facility for the Southwest Washington/Columbia River Basin Representative Area is the Washougal Compressor Station for both mercury and arsenic:

Data collected at this facility will be considered representative of the following NWPL GP meter station facilities:

- Deer Island
- Kalama
- Stevenson
- Stevenson #2
- Vanalco
- Vancouver
- Washougal

3.2.3 Central Washington Representative Area

The representative facility for the Central Washington Representative Area is Yakima Firing Center Meter Station for arsenic and Ellensburg Meter Station for mercury.

Data collected at these facilities will be considered representative of the following NWPL GP meter station facilities:

- Alcoa Wenatchee
- Burbank Heights
- Connell
- Ellensburg
- Goldendale
- Grandview
- John Day Dam
- · Kawecki Chemical
- Kennewick
- Klickitat
- Lind
- Menan Starch
- Moses Lake
- Pasco
- Prosser
- Quincy
- Ritzville
- Sandvik Special Metals
- Sunnyside
- Unocal Finley
- Walla Walla
- Warden
- Wenatchee
- Yakima
- Zillah Toppenish

3.2.4 Eastern Washington Representative Area

The representative facility for the Eastern Washington Representative Area is Spokane Mead Meter Station for arsenic and Star Road Meter Station for mercury.

Data collected at these facilities will be considered representative of the following NWPL GP meter station facilities:

- Cheney Medical Lake
- Colfax
- Genesee
- Pullman

- Spokane West
- Spokane Mead
- Star Road

Note: In the Ecology approved TEE Program Document; it was originally proposed that the Cheney Medical Lake Meter Station facility would be used for the representative facility in the Eastern Washington sub-region. However, during the approval process for the TEE Program Document, the Cheney Medical Lake facility was remediated and there were no remaining soils at the site with the concentration ranges required for bioassay analysis. Therefore, an alternate location (*i.e.*, Starr Road) was selected as the representative facility for mercury.

3.3 TEE Sampling and Analysis

TEE samples were collected from each representative facility where previously collected data indicated that COCs in soil were close to the initially selected cleanup level for each COC (i.e., 2 mg/kg for mercury and 20 mg/kg for arsenic). Prior to performing the necessary TEE analysis, a sample was collected from each TEE sample and submitted for confirmation analysis to verify the COC concentration.

Samples for confirmation analyses were submitted to Friedman & Bruya, Inc. of Seattle, Washington or ESC Lab Sciences of Mt. Juliet, Tennessee for analysis of mercury by EPA Method 7471 and arsenic by EPA Method 6010B, as applicable.

As indicated in the TEE Program Document, TEE samples qualified for bioassay analysis and bioaccumulation factor (BAF) testing if the concentration for mercury ranged from 2 mg/kg to 6 mg/kg, and/or the concentration for arsenic ranged from 20 mg/kg to 60 mg/kg. The TEE samples selected from each representative facility, original COC concentration, and confirmation concentration are presented in Table 1. Laboratory analytical reports for confirmation soil samples are provided in Attachment C.

With the exception of arsenic in the Southwestern Washington/Colombia River Basin, Central Washington, and Eastern Washington representative areas, each TEE sample presented in Table 1 qualified for bioassay analysis and/or BAF testing in accordance with the concentration ranges presented in the TEE Program Document. For the remaining representative areas, there were no concentrations detected above the initially selected arsenic cleanup level of 20 mg/kg. Therefore, the maximum arsenic concentration detected in each of the representative areas was analyzed for TEE compliance.

3.3.1 Soil Bioassay

Soil bioassay analyses were conducted to evaluate the protectiveness of mercury concentrations in soil to vascular plants and soil biota and arsenic concentrations in soil to vascular plants. Soil for bioassay analyses were submitted to Nautilus Environmental (Nautilus), a Department of Ecology accredited laboratory located in Tacoma, Washington.

As presented in the TEE Program Document, soil bioassay for plants was conducted in accordance with Ecology Publication No. 96-324, *Early Seedling Growth Protocol for Soil Toxicity Screening*. Soil

bioassay for soil biota was conducted in accordance with Ecology Publication No. 96-327, *Earthworm Bioassay Protocol for Soil Toxicity Screening*. No soil dilution was performed prior to analysis.

3.3.2 Bioaccumulation Study

In order to assess the protectiveness of the established initial cleanup level for arsenic in soil of 20 mg/kg for potential wildlife receptors, a 28-day earthworm (Eisenia *fetida*) bioaccumulation study was conducted, as allowed by WAC 173-340-7493(3)(c)(i). For predatory wildlife receptors, the surrogate species are the American Robin and the Shrew; both are ground-feeding carnivorous species. Therefore, in accordance with Ecology's Wildlife Exposure Model for Site-Specific Evaluations (WEM; Table 749-4), the potential exposure pathway for these receptors is through consumption of worms living in contaminated soil.

The selected soil samples were submitted to Nautilus. The methodology used for growing worms in contaminated media was in accordance with the *Standard Guide for Conducting Laboratory Soil Toxicity or Bioaccumulation Tests with the Lumbricid Earthworm Eisenia Fetida* (ASTM E1676-04, 2007).

Following the 28-day bioaccumulation incubation period, the earthworms were removed from the soil, placed in chemistry containers, and submitted to Test America of Seattle, Washington for determination of arsenic concentration by EPA method 6010B.

Results of the earthworm bioaccumulation study and confirmation soil sampling were subsequently used to calculate site-specific BAFs for the selected representative sites. BAFs were calculated by dividing the worm arsenic concentration by the confirmation soil arsenic concentration for each representative facility. The calculated site-specific BAFs were then used to calculate region-specific indicator concentrations that are considered protective of potential wildlife receptors using the equations provided in the WEM, Table 749-4 in MTCA. As no Toxicity Reference Value for the more toxic form of arsenic (arsenic III) was provided in MTCA Table 749-4 for the American Robin, EPI used a value of 2.24 mg/kg-day as provided in the U.S. EPA document, *Ecological Soil Screening Levels for Arsenic*, March 2005, to calculate the region-specific indicator concentrations for the avian predator. This is a more conservative value than that provided in MTCA for the less toxic arsenic V.

4.0 FINDINGS

The results of the bioassay analysis and BAF study are presented in the following sections. The Soil Toxicity Evaluation report prepared by Nautilus is included as Attachment D.

4.1 Lettuce Bioassay Tests

Results of the lettuce bioassay tests conducted on soils from representative meter station facilities impacted with mercury are as follows:

- Snohomish Compressor Station (Northwest Washington Representative Area) mercury concentration 2.5 mg/kg – soil not toxic.
- Washougal Compressor Station (Southwest Washington/Columbia River Representative Area)
 mercury concentration 2.6 mg/kg soil not toxic.
- Ellensburg Meter Station (Central Washington Representative Area) mercury concentration
 2.8 mg/kg soil not toxic.
- Star Road Meter Station (Eastern Washington Representative Area) mercury concentration
 3.3 mg/kg soil not toxic.

Results of the lettuce bioassay tests indicate that the initially established soil cleanup level for mercury of 2 mg/kg is protective of plants in each of the representative areas.

Results of the lettuce bioassay tests conducted on soils from representative meter station facilities impacted with arsenic indicate:

- Snohomish Compressor Station (Northwest Washington Representative Area) arsenic concentration 48.1 mg/kg – soil not toxic.
- Washougal Compressor Station (Southwest Washington/Columbia River Representative Area)
 arsenic concentration 16 mg/kg soil not toxic.
- Yakima Firing Center Meter Station (Central Washington Representative Area) arsenic concentration 14 mg/kg – soil not toxic.
- Spokane Mead Meter Station (Eastern Washington Representative Area) arsenic concentration 18.1 mg/kg – results inconclusive*.

*Note: The control sample for the lettuce bioassay sample from Spokane Mead Meter Station did not meet the minimum criteria for seeding growth and therefore the results were inconclusive. The lettuce bioassay test will be re-performed on the TEE sample from Spokane Mead.

Results of the lettuce bioassay tests indicate that the initially established soil cleanup level for arsenic of 20 mg/kg is protective of plants in the Northwest Washington Representative Area. For the Southwest Washington/Colombia River and Central Washington Representative Areas, the concentration analyzed represents the arsenic concentration that is protective of plants. No arsenic concentration protective of plants has yet been established for the Eastern Washington Representative Area.

4.2 Earthworm Bioassay Tests

Results of the earthworm bioassay tests conducted on soils from representative meter station facilities impacted with mercury indicate:

- Snohomish Compressor Station (Northwest Washington Representative Area) mercury concentration 2.5 mg/kg – soil not toxic.
- Washougal Compressor Station (Southwest Washington/Columbia River Representative Area)
 mercury concentration 2.6 mg/kg soil not toxic.
- Ellensburg Meter Station (Central Washington Representative Area) mercury concentration
 2.8 mg/kg soil not toxic.
- Star Road Meter Station (Eastern Washington Representative Area) mercury concentration
 3.3 mg/kg soil not toxic.

Results of the earthworm bioassay tests indicate that the initially established soil cleanup level for mercury of 2 mg/kg is protective of soil biota in each of the representative areas.

4.3 Earthworm 28-day Bioaccumulation Study

Results of the 28-day earthworm bioaccumulation study conducted using soils from representative meter station facilities impacted with arsenic indicate:

- For the Snohomish Compressor Station (Northwest Washington Representative Area), the calculated BAF was 0.16, and the calculated indicator concentrations for arsenic in soil that are considered protective of avian predators and mammalian predators are 58 mg/kg and 47 mg/kg, respectively.
- For the Washougal Compressor Station (Southwest Washington/Columbia River Representative Area), the calculated BAF was 0.26, and the calculated indicator concentrations for arsenic in soil that are considered protective of avian predators and mammalian predators are 45 mg/kg and 30 mg/kg, respectively.
- For the Yakima Firing Center Meter Station (Central Washington Representative Area), the calculated BAF was 0.53, and the calculated indicator concentrations for arsenic in soil that are considered protective of avian predators and mammalian predators are 29 mg/kg and 15 mg/kg, respectively.
- For the Spokane Mead Meter Station (Eastern Washington Representative Area), the calculated BAF was 0.13, and the calculated indicator concentrations for arsenic in soil that are considered protective of avian predators and mammalian predators are 63 mg/kg and 56 mg/kg, respectively.

Calculation worksheets for region-specific soil indicator concentrations that are considered protective of wildlife calculated using Site-specific BAF values determined from the 28-day earthworm bioaccumulation studies are presented as Attachment E.

4.4 Data Summary

Table 2 summarizes the cumulative TEE data collected during this study.

Based on the work documented herein, the TEE cleanup levels that are protective of all potential terrestrial and ecological receptors for the representative areas are as follows:

- Northwest Washington Representative Area
 - Arsenic 47 mg/kg
 - Mercury 2.5 mg/kg
- Southwest Washington/Colombia River Representative Area
 - Arsenic 16 mg/kg
 - Mercury 2.6 mg/kg
- Central Washington Representative Area
 - Arsenic 14 mg/kg
 - Mercury 2.8 mg/kg
- Eastern Washington Representative Area
 - Arsenic No Value Yet Established
 - Mercury 3.3 mg/kg

5.0 CONCLUSIONS

The conclusions of the modified Site-Specific TEE study conducted for the NWPL GP Meter Station Facilities in Washington State are as follows:

- Results of the lettuce and earthworm bioassay tests indicate that the established initial soil
 cleanup level for mercury of 2 mg/kg is protective of all potential ecological receptors at all of
 the selected representative meter station facilities.
- Results of the lettuce bioassay and earthworm bioaccumulation tests indicate that the
 established initial soil cleanup level for arsenic of 20 mg/kg is protective of potential ecological
 receptors in the Northwest Washington Representative Area.
- The TEE cleanup level for arsenic applicable to the Southwest Washington/Colombia River Representative Area is 16 mg/kg. This cleanup level is based on the protection of plants ecological pathway of concern.
- The TEE cleanup level for arsenic applicable to the Central Washington Representative Area is 14 mg/kg. This cleanup level is based on the protection of plants ecological pathway of concern.

- The TEE cleanup level for arsenic established for the Southwest Washington/Colombia River and Central Washington Representative areas are based upon the maximum concentrations detected in each region. If in the future, arsenic is detected at concentrations that exceed the current maximum concentrations, NWPL GP reserves the right to perform additional lettuce bioassay tests to assess the protectiveness of arsenic in soil for that particular region.
- Based on the work conducted as part of this TEE, no TEE cleanup level for arsenic was
 established for the Eastern Washington Representative Area. The absence of a TEE cleanup
 level for arsenic in the Eastern Washington Representative Area represents a data gap for this
 study. NWPL GP is currently working to fill this data gap and will submit an addendum to this
 report when complete.

6.0 CLOSING

The representative area data described herein, and the cleanup levels that are protective of the potential ecological receptors developed during the site-specific TEEs will be used as a reference for compliance during the assessment and remediation of the individual meter station facilities. The procedures and methods for assessing and remediating each individual meter station facility will be presented in an Assessment Results and Remedial Action Report submitted for each meter station facility. These reports will include a section referencing the TEE work documented herein.

7.0 REFERENCES

Environmental Partners, Inc. (EPI)¹, Portnoy Environmental², Williams Gas Pipeline², 2011, Terrestrial Ecological Evaluation Program, Northwest Pipeline GP Meter Station Facilities Throughout Washington State; ¹Seattle, Washington; ²Houston, Texas; May.

U.S. Environmental Protection Agency (EPA), 2005, Ecological Soil Screening Levels for Arsenic; Office of Solid Waste and Emergency Response, Washington, DC; March.

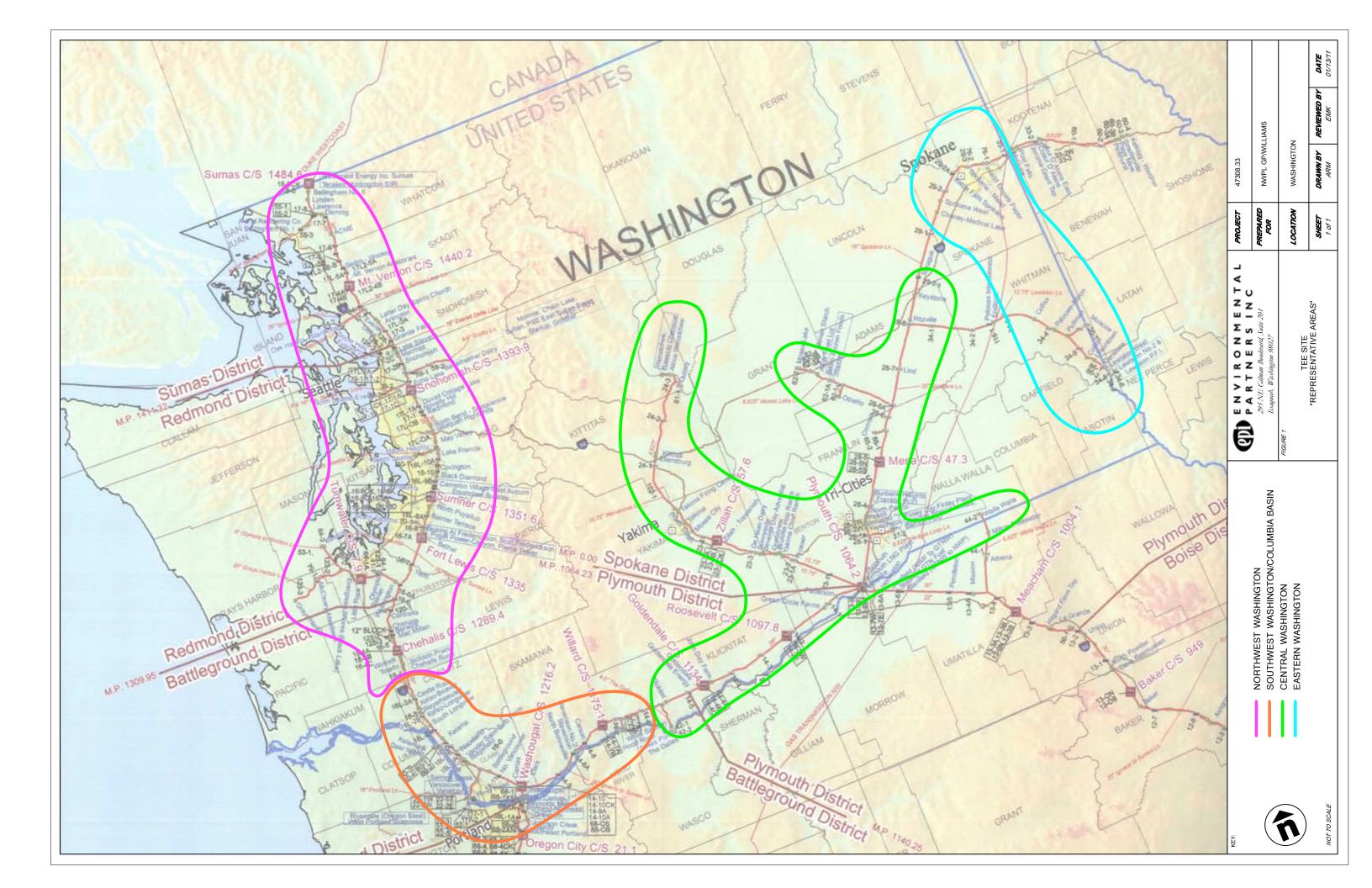


Table 1 TEE Bioassay Soil and Bioaccumulation Confirmation Sample Results (in mg/kg) and Bioaccumulation Factor for Arsenic Northwest Pipeline GP Wasington State Meter Station Facilities

		TEE Sample	LAB Report	Mercury			Arsenic				
Region	Representative Facility			Original Concentration ^A	Bioassay Sample Collection Date	Confirmation Sample Analytical Result ^A	Original Concentration ⁸	Bioassay Sample Collection Date	Confirmation Sample Analytical Result ^B	E. fetida 28-Day Analytical Result ^c	Bioaccumulation Factor ^D
Northwest Washington Representation Area	Snohomish Compressor Station	SH4-W64	105017	NA	NA	NA	44	5/3/11	48.1	7.8	0.16
		SHSB2-3:18	105180	12	5/13/11	2.5	NA	NA	NA	NA	NA
Southwest Washington / Columbia River Basin Representation Area	Washougal Compressor Station	WS11-AM24	L517283	NA	NA	NA	26	5/17/11	16	4.1	0.26
		WSSB6-0910	L517283	2.7	5/17/01	2.6	NA	NA	NA	NA	NA
Central Washington Representation Area	Yakima Firing Center Meter Station	YFSS-D1	L517283	NA	NA	NA	<0.21	5/17/11	14	7.4	0.53
Central Wa Represent	Ellensburg Meter Station	ELSS-0810	L517283	2.3	5/17/11	2.8	NA	NA	NA	NA	NA
Eastern Washington Representation Area	Spokane Mead Meter Station	BKG	106382	NA	NA	NA	N/A	5/16/11	18.1	<2.3	0.13 ^E
	Star Road Meter Station	1807	105338	3.3	5/16/11	3.3	NA	NA	NA	NA	NA

Notes: All concentrations in milligrams per kilogram (mg/kg) unless otherwise indicated.

^AMercury analysis by EPA Method 1631E and Method 7471

^BArsenic analysis by Method 200.8

^cArsenic analysis by EPA Method 6010B

^DUnitless

^EBioaccumulation Factor calclated using the E. *foetida* 28-day detection limit.

Table 2 TEE Cleanup Level Summary Northwest Pipeline GP Wasington State Meter Station Facilities

Region	Representative Facility	coc	Concentration Protective of Soil Biota	Concentration Protective of Plants	Concentration Protective of Mamallian and Avian Predators	Final TEE Cleanup Level
Northwest Washington Representation Area	Snohomish	Arsenic	60ª	48.1	47	47
	Compressor Station	Mercury	2.5	2.5	5.5 ^b	2.5
Southwest Washington / Columbia River Basin Representation Area	Washougal	Arsenic	60ª	16	30	16
	Compressor Station	Mercury	2.6	2.6	5.5 ^b	2.6
Central Washington Representation Area	Yakima Firing Center Meter Station	Arsenic	60ª	14	15	14
Central Wa	Ellensburg Meter Station	Mercury	2.8	2.8	5.5 ^b	2.8
ashington ation Area	Spokane Mead Meter Station	Arsenic	60ª	NVE	56	NVE
Eastern Washington Representation Area	Star Road Meter Station	Mercury	3.3	3.3	5.5 ^b	3.3

Notes: All concentrations in milligrams per kilogram (mg/kg) unless otherwise indicated.

NVE Lettuce bioassay control sample not valid, result inconclusive and therefore no value yet established

a Book value for arsenic concentration protective of soil biota (MTCA Table 749-3)

b Book value for mercury concentration protective of mamalian and avian predators (MTCA Table 749-3)



Terrestrial Ecological Evaluation Program

Northwest Pipeline GP Meter Station Facilities Throughout Washington State

Prepared For:

Northwest Pipeline GP/Williams Gas Pipeline P.O. Box 58900 Salt Lake City, Utah 84158

May 2011

Prepared By:

Williams Gas Pipeline P.O. Box 1396 Houston, Texas 77251-1396 (713) 215-4563

Environmental Partners, Inc. 295 NE Gilman Boulevard Suite 201 Issaquah, Washington 98027 (425) 395-0010

Portnoy Environmental 1414 W. Sam Houston Pkwy N., Suite 170 Houston TX 77043 (713) 805-2994

Eric Koltes, L.G. 205
Environmental Pattners Inc.
Senior Geologist
Eric Michael Koltes

EPI Project Number: 47308.33

QR <u>{</u>





homas C. Main For



Alan Hopkins, P.G. Portnoy Environmental Principal

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1.0 INTRODUCTION

This *Terrestrial Ecological Evaluation Program* document provides the rationale, methodology, and procedures proposed for Terrestrial Ecological Evaluations (TEEs) for Northwest Pipeline General Partnership (NWPL GP) meter station facilities, as required by the Model Toxics Control Act (RCW 70.105D) and its implementing regulations (WAC 173-340), which are collectively referred to herein as "MTCA".

NWPL GP is evaluating the environmental conditions at over 70 meter station facilities throughout Washington State, which have similar site conditions (*i.e.*, uncapped commercial/industrial type facilities, in rural locations, identical site usage, and the same single contaminant). The meter station facilities are where gas is being regulated and metered from the main supply pipelines to local distribution companies (LDCs) or a wholesale customers. The LDC then distributes the gas to local consumers.

NWPL GP originally submitted a draft *Terrestrial Ecological Evaluation Program* document to Mr. Dave Sternberg at Ecology on October 11, 2010. The October 11, 2010 document was disseminated to and reviewed by each of the four Ecology regional Voluntary Cleanup Program (VCP) managers for NWPL GP facilities. Consolidated comments were returned to NWPL GP via email on November 8, 2010.

NWPL GP submitted a *Technical Memorandum Re: Response to Ecology Comments – Terrestrial Ecological Evaluation Program: Northwest Pipeline GP Meter Station Facilities Throughout Washington State* dated January 13, 2011 (Technical Memorandum). The Technical Memorandum was again disseminated to and reviewed by each of the four Ecology regional VCP managers. Ecology comments and concerns were consolidated and communicated via Letter *Re: Transmittal of Ecology Comments on the* [Technical Memorandum] dated March 29, 2011.

This revised document incorporates each of the comments and concerns raised by Ecology in the March 29, 2011 transmittal letter.

This document has been prepared in order to evaluate NWPL GP meter station facilities for TEE compliance for the two confirmed contaminants of concern (COCs); inorganic mercury and arsenic. No other COCs have been identified for NWPL GP meter station facilities. The procedures and methods for assessing each individual meter station facility will be presented in an Assessment Results and Remedial Action Report submitted for each meter station facility.

1.1 Facility Description

Meter station facilities are small (typically less than $\frac{1}{2}$ acre) and are relatively simple to assess and remediate. A meter station typically consists of several pipe runs and a small meter building or canopy cover, within a fenced, gravel-covered lot. Meter stations are typically located proximal to the main pipeline. The meter stations have controlled access and the general maintenance of these facilities includes active housekeeping, maintenance such as weed suppression, and maintenance of the integrity of the fencing, gates, and interior buildings/structures.

Based on work conducted since 2005 and prior knowledge of site conditions, a thorough understanding of typical site conditions such as mode of release, vertical and horizontal migration of impacts, hot spots, and contaminant distribution has been formed.

1.2 Conceptual Site Model

The principal COC at NWPL GP meter station facilities is inorganic mercury. The primary source of mercury releases has been accidental spillage of inorganic mercury during historic maintenance and calibration of a certain type of differential pressure manometer (meters) that contained mercury (*i.e.*, American A-88 meters). NWPL GP used such manometers to measure the differential pressures across orifice plates in order to calculate flow volumes through the pipelines, laterals, and taps that supply its customers. It is important to note that not all of the manometers historically used by NWPL GP contained mercury and that the installation of manometers that utilized mercury was phased out in the mid-to-late 1980's.

A secondary, and less common source of potential mercury releases at NWPL GP meter station facilities has been from "thermowells". Thermowells are test tube-shaped "wells" installed in the meter station piping into which thermometers were placed to measure gas temperatures. In some instances, mercury was also placed in the well to improve the thermal conductance between the well and thermometer. The practice of placing mercury in thermowells varied regionally along the NWPL GP pipeline system. The thermowells did not contain large amounts of mercury, but there was the potential for some spillage or drippage when a thermowell was filled and/or when a thermometer was inserted and/or removed. The use of mercury in thermowells was phased out by 1993.

Both the former A-88 meters and the thermowells are point sources of release. These releases have generally been to either bare soil or gravel covered surfaces beneath and adjacent to the meters and above grade portions of the piping runs. These areas are typically either under cover of a supported metal roof or inside a metal building to protect the equipment from the weather.

A less common COC at NWPL GP meter station facilities is arsenic. Although the exact source of arsenic is not known, releases of arsenic appear to be operationally related, surficial releases. Arsenic impacts have typically been identified near buildings and operational equipment. Concentrations are highest at or near the ground surface and attenuate quickly with depth.

2.0 PROBLEM FORMULATION

MTCA requires the completion of a TEE in accordance with WAC 173-340-7490.

2.1 Primary TEE Exclusions

The NWPL GP meter station facilities typically do not qualify for the primary exclusions from the TEE documented in WAC 173-340-7491(1) because of their often rural locations, uncapped site conditions (*i.e.*, typically the facilities are gravel-covered), and the contamination is surficial in nature (*i.e.*, typically less than 3 feet). Therefore, further evaluation is required.

2.2 Simplified TEE Standards

On June 23, 2010, NWPL GP participated in a video conference meeting with the Ecology Voluntary Cleanup Program (VCP) managers to present a proposed "model approach" program by which NWPL GP meter stations could qualify for a Simplified TEE based on the qualifying regulations documented in WAC 173-340-7491(2)(a). While Ecology agreed that on an individual basis certain meter station facilities *may* qualify for a Simplified TEE, Ecology had too many concerns to approve the program as a whole using the model approach presented.

2.3 Modified Model TEE based upon Site-Specific TEE

Since Ecology had concerns with approving a model approach for justifying a Simplified TEE for meter station facilities, NWPL GP is proposing a modified model approach TEE program herein based upon the Site-Specific TEE procedures documented in WAC 173-340-7493.

As previously indicated, the primary COC at the meter stations is inorganic mercury and a less common COC is arsenic.

Inorganic mercury soil impacts at the meter stations have been characterized to the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses of 2 milligrams/kilogram (mg/kg), which is the initially selected cleanup level for NWPL GP meter station facilities. The Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3) are specified as 0.3 mg/kg, 0.1 mg/kg, and 5.5 mg/kg for Plants, Soil Biota, and Wildlife, respectively. Since wildlife receptors are protected at a soil concentration greater than the initially selected cleanup level of 2 mg/kg, facilities that are in compliance with the 2 mg/kg mercury cleanup level will be protective of wildlife receptors. However, because the selected cleanup level of 2 mg/kg exceeds the limits established for the protection of plants and soil biota, it is proposed to perform a modified Site-Specific TEE according to WAC 173-340-7493 for these potential exposures.

Arsenic soil impacts at the meter stations have been characterized to the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses of 20 mg/kg, which is the initially selected cleanup level for NWPL GP meter station facilities. The Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals (Table 749-3) are specified as 10 mg/kg, 60 mg/kg, and 7 mg/kg for Plants, Soil Biota, and

Wildlife, respectively. Since soil biota receptors are protected at a soil concentration greater than the initially selected cleanup level of 20 mg/kg, facilities that are in compliance with the 20 mg/kg arsenic cleanup level will be protective of soil biota receptors. However, because the selected cleanup level of 20 mg/kg exceeds the limits established for the protection of plants and wildlife, it is proposed to perform a modified Site-Specific TEE according to WAC 173-340-7493 for these potential exposures.

2.3.1 Exposure Pathways

The primary exposure pathway for inorganic mercury and arsenic at the NWPL GP meter stations occurs via direct contact. The contact with contaminated soil can directly impact vegetation and soil biota. Indirect impacts can occur when animals feed on affected media, resulting in bioaccumulation of contaminants through the food chain. These secondary receptors could include ground-feeding birds and mammals, and small-mammal predators. Plants exposed to contaminants may directly uptake the contamination from the soil in their roots. Animals may be exposed from direct contact with contaminated soil or by consuming affected plants and/or soil biota.

2.3.2 Receptors of Concern

The receptors of concern differ for mercury and arsenic. The receptors of concern for both of these compounds are summarized below.

2.3.2.1 Receptors of Concern - Mercury

As indicated above, the inorganic mercury cleanup level for NWPL GP meter station facilities is 2 mg/kg. The inorganic mercury ecological indicator soil concentration for protection of wildlife receptors is 5.5 mg/kg, which is based on Ecology's Wildlife Exposure Model for Site-specific Evaluations (Table 749-4). Therefore, wildlife receptors such as potentially exposed avian or mammalian receptors are not considered receptors of concern at NWPL GP meter station facilities that meet the 2 mg/kg cleanup level.

Assuming that the 2 mg/kg selected cleanup level for inorganic mercury has been achieved, the primary receptors of concern for mercury include vascular vegetation and soil biota.

2.3.2.2 Receptors of Concern - Arsenic

The arsenic cleanup level for NWPL GP meter stations is 20 mg/kg. The arsenic ecological indicator soil concentration for protection of soil biota receptors is 60 mg/kg. Therefore, soil biota receptors such are not considered receptors of concern at NWPL GP meter station facilities that meet the 20 mg/kg arsenic cleanup level.

Assuming that the 20 mg/kg selected cleanup level for arsenic has been achieved, the primary receptors of concern for arsenic include vascular vegetation and wildlife.

2.3.3 Toxicological Assessment

The mercury cleanup levels established in MTCA on Table 749-3 for the TEE are based on toxicological effects described in the EPA document *Mercury Study: Report to Congress, Volume VI: An Ecological Assessment for Anthropogenic Mercury Emissions in the United States* (EPA-452/R-97-008, December 1997), which stated that "earthworms accumulated an average of 21.3 times the mercury concentration of the soil to which they were exposed" (Beyer *et al.*, 1985).

Much of the research done on the effects of mercury toxicity is based on methylmercury. Methylmercury is a neurotoxin capable of impacting reproductive health, causing nervous tissue and liver damage, and impairing motor functions in birds and mammals (EPA-425/R-97-008).

Since the impacts at NWPL GP meter stations are from inorganic mercury, which can be converted to the more toxic form of methylmercury through biological methylation, collecting site-specific toxicological data is essential for determining if the initially selected cleanup level of 2 mg/kg is protective of vascular vegetation and soil biota.

An initial toxicological literature study was performed to determine if arsenic could be ruled out for any of the potential receptors of concern. Based on the toxicological information obtained, it is unlikely that arsenic can be ruled out of TEE consideration. The sampling proposed herein will provide empirical site- and compound-specific toxicological data to determine protective concentrations of arsenic. This data will be more beneficial than performing an overly exhaustive literature study for arsenic.

3.0 METHODOLOGY

The proposed modified Site-Specific TEE will identify and address the issue of soil toxicity at the NWPL GP meter stations and its effects on vascular plants and soil biota.

The approach proposed herein is to divide Washington State into representative areas based on regional climate and geography and to collect empirical data at a representative facility within each area. The other meter stations assessed and remediated within a given representative area will utilize the data collected at the area's representative facility for determining compliance with TEE.

The proposed division of Washington State includes four ecological regions, focusing mainly on geographic location and its associated climate systems. These proposed representative areas include:

- a. Northwest Washington: located in the Puget Sound trough with a maritime climate, forested foothills, and abundant riparian habitat. Experiences high volumes of rainfall, averaging 40-80-inches annually. Significant development has occurred along the Interstate-5 corridor, which the NWPL GP pipeline parallels.
- b. Southwest Washington/Columbia River Basin: located to the west of the Cascade Mountain Range. Climate is similar to Northwest Washington; however, rainfall is slightly greater, receiving an annual precipitation of 55-140-inches.
- c. Central Washington: located to the east and in the rain shadow of the Cascade Mountain Range and stretches east toward the Columbia Plateau of central Washington. Precipitation averages 20-inches annually, encouraging growth of shrub-steppe vegetation.
- d. Eastern Washington: located near the Washington/Idaho border, near the foothills of the Canadian Rocky Mountain Range. Precipitation averages 30-inches annually and vegetation ranges from a sage-steppe ecosystem to evergreen forests.

The proposed representative areas as they relate to the NWPL GP pipeline are depicted on Figure 1.

3.1 Soil Bioassay

Soil bioassay analysis will be necessary to evaluate the protectiveness of mercury concentrations for vascular plants and soil biota. Bioassay analysis will be necessary to evaluate the protectiveness of arsenic concentrations for vascular plants.

In order to address whether chemical impacts to representative soils are protective of vascular plants and soil biota, soil samples will be subjected to bioassay screening as specified in WAC 173-340-7493(3)(b)(i). The samples for bioassay screening analyses will be collected from areas where the concentrations of impacts are representative of the initial cleanup levels selected for each compound

(i.e., 2 mg/kg for mercury and 20 mg/kg for arsenic). The previously collected assessment data will be used to determine the sampling location. No soil dilution will be performed prior to analysis.

In order to confirm the contaminant concentration prior to bioassay analysis, a sample will be submitted from the bioassay sample collected and will be analyzed for mercury using EPA Method 7471 and arsenic using EPA Method 6010B.

Bioassay tests proposed herein are to be performed on concentrations of soil that are at, or slightly higher than the initially selected cleanup level of 2 mg/kg for mercury and 20 mg/kg for arsenic, meaning that soils that are representative of the cleanup level for each COC, or slightly more contaminated than post-remedial concentrations, will be used for the bioassays. Therefore, if the bioassays on the more-highly contaminated soil are shown to be protective of ecological risks, soils from sites remediated to 2 mg/kg for mercury and 20 mg/kg for arsenic are also considered protective.

For purposes of this TEE, the acceptable range of concentrations for performing the bioassay analysis shall be considered between 2 and 6 mg/kg for mercury, and between 20 mg/kg and 60 mg/kg for arsenic.

If the bioassay screening analysis determines that the soils are not protective of plants and/or soil biota for a particular region, then serial dilutions of samples will be performed to determine concentrations that are protective. If serial dilutions are necessary, contaminant analysis will be performed on the diluted soils to confirm the concentration of COCs prior to performing additional bioassay analysis.

The methodology for the soil bioassay for plants will be in accordance with the Ecology Publication No. 96-324, *Early Seedling Growth Protocol for Soil Toxicity Screening*. The methodology for soil bioassay for soil biota will be in accordance with the Ecology Publication No. 96-327, *Earthworm Bioassay Protocol for Soil Toxicity Screening*. The soil bioassay analysis will be performed by Nautilus Environmental, a Department of Ecology accredited laboratory located in Tacoma, Washington.

3.2 Bioaccumulation Factor Calculation

As presented above, arsenic is the only COC applicable to potential wildlife receptors and requires further evaluation for protectiveness.

For wildlife receptors, the surrogate species are the American Robin and the Shrew; both are ground-feeding carnivorous species. Therefore, in accordance with Ecology's Wildlife Exposure Model for Site-Specific Evaluations (WEM; Table 749-4), the potential exposure pathway for these receptors is through consumption of worms living in contaminated soil. The driving factor in calculating a site-specific indicator concentration using the WEM is the bioaccumulation factor (BAF) for worms living in the contaminated media. In order to calculate site-specific indicator concentrations for wildlife receptors, site-specific BAFs for arsenic will be assessed as allowed by WAC 173-340-7493(3)(c)(i).

The BAFs for biota will be measured by collecting and analyzing worm samples living in representative arsenic-contaminated soils. If worms are not available in the representative soils, other biota (e.g., spiders, potato bug, etc.) will be collected and analyzed in lieu of worms.

Terrestrial Ecological Evaluation Program Northwest Pipeline GP Meter Station Facilities Throughout Washington State May 26, 2011

If no biotas are present in the representative soils, worms will be grown in contaminated media and then analyzed for arsenic concentration. Using previously collected assessment data to determine the sampling location, contaminated media will be collected for purposes of growing worms. In order to confirm the contaminant concentration prior to growing worms, a sample will be submitted from the contaminated media collected and analyzed for arsenic.

Methodology for growing worms in contaminated media will be in accordance with the *Standard Guide* for Conducting Laboratory Soil Toxicity or Bioaccumulation Tests with the Lumbricid Earthworm Eisenia Fetida (ASTM E1676-04, 2007).

After growing the worms in the contaminated media using the above method, the worms will be analyzed for arsenic.

The BAFs are determined by dividing the concentrations of arsenic within the biota samples by the concentration within the soil in which the biota were collected or grown. The resulting BAFs will then be used in the WEM equations to calculate site-specific concentrations that are protective of wildlife receptors.

4.0 SITE GROUPINGS AND REPRESENTATIVE SITES

The following summarizes the NWPL GP proposed representative areas, the associated NWPL GP meter station facilities, and the proposed representative facility for each area; see **Figure 1.**

4.1 Northwest Washington Representative Area

The representative facility for the Northwest Washington Representative Area is the Snohomish Compressor Station for both arsenic and mercury.

Data collected at this facility will be representative of the following NWPL GP meter station facilities:

- Chehalis
- Evergreen Shores (Black Lake)
- · McCleary Aberdeen
- North Seattle Everett
- North Tacoma
- Oak Harbor Stanwood
- Olympia
- Sedro Woolley
- Shelton
- South Seattle
- South Tacoma
- Toledo

4.2 Southwest Washington/Columbia River Basin Representative Area

The representative facility for the Southwest Washington/Columbia River Basin Representative Area is the Washougal Compressor Station for both arsenic and mercury:

Data collected at this facility will be representative of the following NWPL GP meter station facilities:

- Deer Island
- Kalama
- Stevenson
- Stevenson #2
- Vanalco
- Vancouver
- Washougal

4.3 Central Washington Representative Area

The representative facility for the Central Washington Representative Area is Yakima Firing Center Meter Station for arsenic and Ellensburg Meter Station for mercury.

Data collected at these facilities will be representative of the following NWPL GP meter station facilities:

- Alcoa Wenatchee
- · Burbank Heights
- Connell
- Ellensburg
- Goldendale*
- Grandview*
- John Day Dam*
- Kawecki Chemical
- Kennewick
- Klickitat*
- Lind
- · Menan Starch
- Moses Lake
- Pasco
- Prosser*
- Quincy
- Ritzville*
- Sandvik Special Metals
- Sunnyside
- Unocal Finley
- Walla Walla
- Warden
- Wenatchee
- Yakima*
- Zillah Toppenish*

4.4 Eastern Washington Representative Area

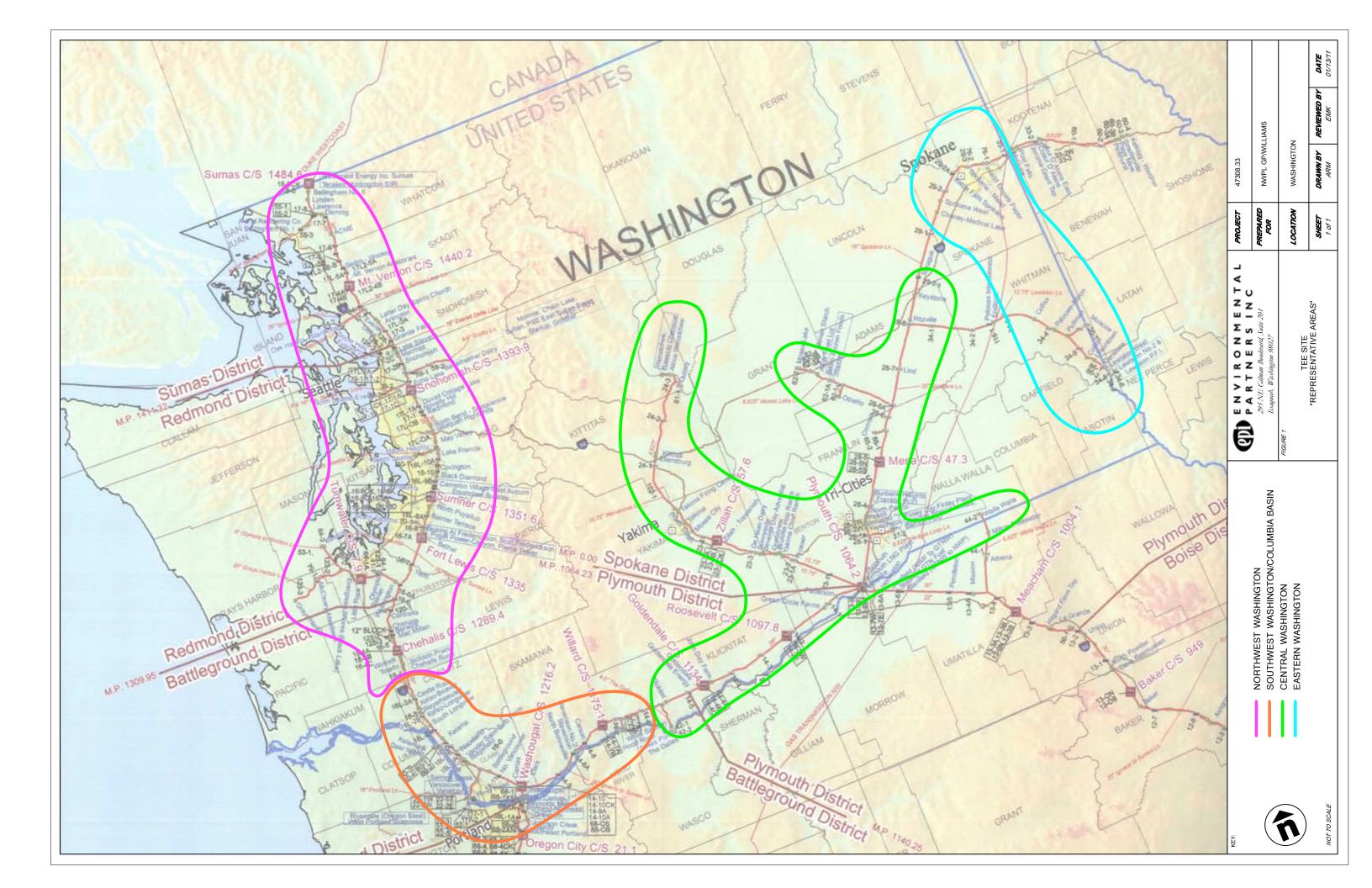
The representative facility for the Eastern Washington Representative Area is Spokane Mead Meter Station for arsenic and Cheney Medical Lake Meter Station for mercury:

Data collected at these facilities will be representative of the following NWPL GP meter station facilities:

- Cheney Medical Lake
- Colfax
- Genesee
- Pullman
- Spokane West
- Spokane Mead

5.0 CLOSING

Upon written acceptance of this proposed modified Site-Specific TEE program by Ecology, an individual TEE will be submitted for each meter station facility/site using this document and the representative facility data as a reference for compliance.







STATE OF WASHINGTON DEPARTMENT OF ECOLOG

PO Box 47775 • Olympia, Washington 98504-7775 • (360)

May 13, 2011

Mr. Aaron Galer, Environmental Scientist III Williams - Northwest Pipeline 295 Chipeta Way # 1 Salt Lake City, UT 84108-1285

Mr. Mark S. Nelson, P.E., Group Leader, Environmental Remediation Williams Gas Pipeline P.O. Box 1396 Houston, TX 77251

Re: Transmittal of Ecology Approval and Comment on the revised Terrestrial Ecological Evaluation Program, Northwest Pipeline GP Meter Station Facilities throughout Washington State, April 2011, prepared by Williams Gas Pipeline; Environmental Partners, Inc; and Portnoy Environmental.

Dear Mr. Galer and Mr. Nelson:

Thank you for submitting the above-referenced revised Terrestrial Ecological Evaluation (TEE) Program document in response to our comments. Ecology approves the above-referenced document provided that the following comment is incorporated:

• The 3rd paragraph of Section 3.1 states that in order to confirm the contaminant concentration prior to bioassay analysis, samples will be analyzed for mercury and arsenic. However, a similar statement is not provided in Section 3.2. Please also add this to Section 3.2.

If you have any questions, please contact me at (360) 407-6247 or via e-mail at stee461@ecy.wa.gov.

Sincerely,

SSteel

Steve Teel, LHG Site Manager/Hydrogeologist Toxics Cleanup Program Southwest Regional Office

ST/ksc:TEE M-S approval May 2011

By certified mail: (7010 0780 0002 3400 6118 // 7010 0780 0002 3400 6088)

cc: Eric Koltes, Environmental Partners, Inc.

Mr. Alan Hopkins, P.G., Portnoy Environmental

Scott Rose - Ecology-SWRO

Dale Myers - Ecology-NWRO

Norm Peck - Ecology-CRO

Jason Shira - Ecology-CRO

Patti Carter - Ecology-ERO

Mike Hibbler – Ecology-ERO

Brendan Dowling - Ecology-ERO





Attachment C

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

May 3, 2011

Clint Moseley, Project Manager Portnoy Environmental 1414 W Sam Houston Pkwy N, Suite 170 Houston, TX 77043

RE: Snohomish TEE 534512-RXG99, F&BI 105017

Dear Mr. Moseley:

Included are the results from the testing of material submitted on May 3, 2011 from the Snohomish TEE 534512-RXG99, F&BI 105017 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Eric Koltes, Tim Jenkins, Alan Hopkins, Mike Portnoy PRT0503R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 3, 2011 by Friedman & Bruya, Inc. from the Portnoy Environmental Snohomish TEE 534512-RXG99 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Portnoy Environmental
105017-01	SH3-AX36
105017-02	SH4-W64
105017-03	SH9-Q39

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SH3-AX36

Date Received: Date Extracted: 05/03/11 05/03/11

Date Analyzed: Matrix:

Soil

Units:

05/03/11

mg/kg (ppm)

Client:

Portnoy Environmental

Project:

Snohomish TEE 534512-RXG99

Lab ID:

104017-01 104017-01.016

Data File: Instrument:

ICPMS1

Operator:

AP

Lower

Upper

Internal Standard:

Indium

% Recovery:

93

Limit: 60

Limit: 125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

40.6

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SH4-W64

Date Received: Date Extracted:

Internal Standard:

05/03/11 05/03/11

Date Analyzed: Matrix:

Indium

Units:

05/03/11

Soil

mg/kg (ppm)

% Recovery:

95

Client:

Project:

Lab ID:

Data File:

Lower

Limit: 60

Portnoy Environmental

Snohomish TEE 534512-RXG99

104017-02

104017-02.017

Instrument: ICPMS1

AP Operator:

Upper Limit: 125

Concentration

mg/kg (ppm)

Arsenic

Analyte:

48.1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SH9-Q39

Date Received: Date Extracted: 05/03/11 05/03/11

Date Analyzed: Matrix:

05/03/11 Soil

Units:

mg/kg (ppm)

Client:

Portnoy Environmental

Project:

Snohomish TEE 534512-RXG99

Lab ID:

104017-03 104017-03.018

Data File: Instrument: ICPMS1

Operator:

AP

Lower

Internal Standard:

Indium

% Recovery:

88

Limit: 60

Upper Limit: 125

Concentration

mg/kg (ppm)

Arsenic

Analyte:

2.17

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

Method Blank

Date Received: Date Extracted: Not Applicable 05/02/11

Date Analyzed: Matrix:

05/03/11

Units:

Soil

mg/kg (ppm)

Client: Project: Portnoy Environmental

Snohomish TEE 534512-RXG99 I1-307 mb

Lab ID: Data File:

I1-307 mb.015

Instrument: ICPMS1 Operator:

AP

Lower

Upper

Internal Standard:

Indium

% Recovery:

91

Limit: 60

Limit: 125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

<1

ENVIRONMENTAL CHEMISTS

Date of Report: 05/03/11 Date Received: 05/03/11

Arsenic

Project: Snohomish TEE 534512-RXG99, F&BI 105017

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Analyte	Units	10	6.07	89 b	89 b	44-151	0 b
	Reporting	Level	Result	MS	MSD	Criteria	(Limit 20)
	D 41	Spike	Comple	Percent Recovery	Percent Recovery	Acceptance	RPD
Laboratory Code	e: 104291-22 (N	Matrix Spi	ıke)	5	D4		

6.07

89 b

89 b

Laboratory Code: Laboratory Control Sample

mg/kg (ppm)

Haboratory	,	_	Percent	
Analyte	Reporting Units	Spike Level	Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	99	80-120

10

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

AH

Prepared by: Friedman + Bryllyc (lab use only) Sample # (lab only) Chain of Custody THE PARTY OF THE P Semment Contra Phone (800) 767-5859 FAX (615) 758-5859 Phone (615) 758-5858 12065 Lebanon Road Mt. Juliet, TN 37122 Temp Other CaCode portenvtx Template/Prelogin Remarks/Contaminant 1-DEC CM Shipped Via: 92 1.40 03 Lab 0 JI Ē 3 7 **CC2MOD, EDD** Cntrs ŝ ŏ PORTENVTX- WAHG Date Results Needed: GW-Groundwater WW-WasteWater DW-Drinking Water OT-Other 534512-RXG99 Email? __No__Yes No_Yes Time Alan Hopkins NWPL TEAM Altemate billing information: Date FAX? Direct Bill to Mark Nelson ESC Key: Depth P.O.# Same Day......200%

Next Day......100%

Two Day......50% City/Sate Collected Rush? (Lab MUST Be Notified) teport to: Email to: 501 Matrix* Site/Facility ID#: Client Project #: <u> 1</u> 子 Comp(Grab Portnoy Environmental Description: Snokgowish · Mac Matrix SS - Soil/Solid 丁93 -丁土 5H3- AX3 Collected by (signature) Sample ID Collected by: Packed on Ice N Remarks: SHO Phone: FAX:

03/e: / Relinquished by: (Signature) Relinquished by: (Sign Relinquished by: (Sig

0430

(eceived by (Signature)

Time.

E

(lab use only)

Samples returned via (100%)

Temp:

Dete

S Samples received at / P

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

May 17, 2011

Eric Koltes, Project Manager Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaquah, WA 98027

RE: Snohomish C/S Job 47308.36, F&BI 105180

Dear Mr. Koltes:

Included are the results from the testing of material submitted on May 13, 2011 from the Snohomish C/S Job 47308.36, F&BI 105180 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EPI0517R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 13, 2011 by Friedman & Bruya, Inc. from the Environmental Partners Snohomish C/S Job 47308.36, F&BI 105180 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID

Environmental Partners

105180-01

SHSB2-3:18

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 05/17/11 Date Received: 05/13/11

Project: Snohomish C/S Job 47308.36, F&BI 105180

Date Extracted: 05/17/11 Date Analyzed: 05/17/11

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	<u>Total Mercury</u>
SHSB2-3:18 105180-01 1/2	2.5
Method Blank	<0.1

ENVIRONMENTAL CHEMISTS

Date of Report: 05/17/11 Date Received: 05/13/11

Project: Snohomish C/S Job 47308.36, F&BI 105180

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 105187-03 (Matrix Spike)

		~	G 1	Percent	Percent Recovery	Acceptance	RPD
Analyte	Reporting Units	Spike Level	Sample Result	Recovery MS	MSD	Criteria	(Limit 20)
Mercury	mg/kg (ppm)	0.125	<0.1	101	100	45-162	1

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Mercury	mg/kg (ppm)	0.125	107	63-144

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- $\mathrm{A1}-\mathrm{More}$ than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- \underline{nm} The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282	9			\$4582-3:18	Sample ID	hone #(425) 395-0010 Fax #	State, ZIP Issaquah, WA 98027	ddress 295 NE Gilman Blvd.	ompany Environmental Partners,	iend Report To Ease Loure
Relinquish Recaived				0	Ð AB	11	027	Slvd.	artne	
ned by:	,			5/13/11	. Date Sampled	(425) 395-0011	203		rs, Inc.	8
SIGNATURE				1300	Time Sampled)11	7		PRO	SA

Received by:	WA 98119-2029 Relinquished by:	T	an & Bruya, Inc.			•								2-3:18 01 5/2	Sample ID LAB D		(425) 395-0010 Fax # (425)	ZIP Issaquah, WA 98027	295 NE Gillian biva.	OOF NIE Cymon Divi	Environmental Partners, Inc.	ATTO EARC KOLTES	100
y:	ad by:	17.3	SIGNATURE				•							3/11 1300	Date Time Sampled Sampled		(425) 395-0011	7	SIT			O'A	
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Samples received at H		+	H												VOC by 524	REQUESTED			S	2	#		5
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	11/2/11	5/13/11	DATE												Notes			iys	SAMPLEDISPOSAL	d by:		TURNAROUND TIME	OF '
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Fax (206) 2

		***************************************			たらしているよう
		Samples received at 4 "C	Samp	Received by:	7V03-686
	`			Relinquished by:	285-8282
15:4	5/13/11	Flbin	Michael Edel	Received the Control	1 98119-2029
4:38	5/18/11 4:38	TB)	Ashley Hofen	Relinguishedby:	Avenue West
TIME	DATE	COMPANY	PRINT NAME	SIGNATURE	& Bruya, Inc.



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Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite 170 Houston, TX 77043

Report Summary

Friday May 27, 2011

Report Number: L517283
Samples Received: 05/20/11
Client Project:

Description:

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Tom Mellette , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140 NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A, TX - T104704245, OK-9915

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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-01

Date Received : May

:

20, 2011

Description

Sample ID

: YFSS-1110

Site ID : Project # :

Collected By : Collection Date : 05/19/11 00:00

W.Result RDL D.Resu		
Total Solids 96. 96.	% 2540G 05/27/	11
Arsenic 12. 1.0 12.	1.0 mg/kg 6010B 05/25/	11

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Note:
The reported analytical results relate only to the sample submitted.
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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-02

Date Received : May Description :

20, 2011

Site ID :

Sample ID

: YFSS-D1

Project # :

Collected By : Collection Date : 05/19/11 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.		97.		8	2540G	05/27/11
Arsenic	14.	1.0	14.	1.0	mg/kg	6010B	05/25/11

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:
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Page 3 of 13



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-03

Date Received : May Description :

20, 2011

: YFSS-D2 Sample ID

Site ID : Project # :

Collected By : Collection Date : 05/19/11 00:00

Parameter	W.Result	RDL	D.Result_	RDL	Units	Method	Date
Total Solids	96.		96.		8	2540G	05/27/11
Arsenic	8.4	1.0	8.7	1.0	mg/kg	6010B	05/25/11

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-04

Date Received : May Description :

20, 2011

Site ID :

Sample ID

: WS11-AM24

Project # :

Collected By : Collection Date : 05/19/11 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	76.		76.		8	2540G	05/27/11
Arsenic	12.	1.0	16.	1.3	mg/kg	6010B	05/24/11



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-05

Date Received : May

20, 2011

Description

:

Sample ID : WSSB11-2

Site ID: Project # :

Collected By : Collection Date : 05/19/11 00:00

	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter	87.		87.		8	2540G	05/27/11
Total Solids	0,,			1 1	mg/kg	6010B	05/24/11
Arsenic	4.8	1.0	5.5	1.1	mg/kg	00105	

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Mote:
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-06

Date Received : May Description

:

20, 2011

Site ID:

Sample ID

: WSSB11-1

Project # :

Collected By : Collection Date : 05/19/11 00:00

Davamakan	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter Total Solids	89.		89.		8	2540G	05/27/11
		1.0	6.0	1.1	mq/kg	6010B	05/24/11
Arsenic	5.4	1.0	0.0		5. 5		

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Note:
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-07

Date Received :

May

20, 2011

Site ID:

Description

Sample ID

: ELSS-0810

Project # :

Collected By : Collection Date : 05/19/11 00:00

COllection Page 1	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter	W.Resuit	RDD			9.	2540G	05/27/11
Total Solids	92.		92.		70		
M	2.6	1.0	2.8	1.1	mg/kg	7471	05/25/11
Mercury							

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-08

Date Received : May

:

20, 2011

Description

Site ID:

Sample ID

: ELSS-1009

Project # :

Collected By : Collection Date : 05/19/11 00:00

	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter	95.		95.		8	2540G	05/27/11
Total Solids	95.			0 01	/lea	7471	05/25/11
Mercury	1.4	0.20	1.5	0.21	mg/kg	/4/1	03,23, ==

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-09

Date Received : May

20, 2011

Description

:

Site ID :

Sample ID

: ELSS-1109

Project #:

Collected By : Collection Date : 05/19/11 00:00

Devember	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter Total Solids	96.		96.		8	2540G	05/27/11
	13.	2.0	14.	2.1	mg/kg	7471	05/25/11
Mercury	13.						

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39

Page 10 of 13



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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-10

Date Received : Description :

May

20, 2011

Site ID : Project #:

: WS6-AT35 Sample ID

Collected By : Collection Date :	05/19/11 00:00						a	
		W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter Total Solids		90.		90.		8	2540G	05/27/11
TOTAL SOLIAS		1 0	0.40	2.0	0.44	mq/kg	7471	05/25/11
Mercury		1.8	0.40	2.0				

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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ESC Sample # : L517283-11

REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

Date Received : May Description : 20, 2011

Site ID :

: WSSB6-0910 Sample ID

Project #:

Collected By : Collection Date : 05/19/11 00:00

Collection page :	W.Result	RDL	D.Result	RDL	Units	Method	Date
Parameter	W.Resuic	ROLL			9.	2540G	05/27/11
Total Solids	93.		93.				05 (05 /11
Mercury	2.4	1.0	2.6	1.1	mg/kg	7471	05/25/11

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 05/27/11 13:39 Printed: 05/27/11 13:39



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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

May 27,2011

Alan Hopkins and NWPL Team Portnoy Environmental 1414 W. Sam Houston Pkwy. N., Suite Houston, TX 77043

ESC Sample # : L517283-12

Date Received : May Description :

20, 2011

Site ID :

Sample ID

: WSSB6-0911

Project #:

Collected By :
Collection Date : 05/19/11 00:00

COllection 2002		RDL	D.Result	RDL	Units	Method	Date
Parameter	W.Result	KUL	DiRebure				05/07/11
matal Colida	93.		93.		8	2540G	05/27/11
Total Solids			0.5	1 1	mg/kg	7471	05/25/11
Mercury	2.4	1.0	2.5	1.1	mg/ ng	,	

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL)

Note:
The reported analytical results relate only to the sample submitted.
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Reported: 05/27/11 13:39 Printed: 05/27/11 13:39

Summary of Remarks For Samples Printed 05/27/11 at 13:39:32

TSR Signing Reports: 690 R5 - Desired TAT

See Tom M prior to all non Template logins for special notes if any. Tom M cell 406-3470

Sample: L517283-01 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-02 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-03 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-04 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Refer to 05-0068
Sample: L517283-05 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-06 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-07 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-08 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-09 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-10 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Refer to 05-0068 Sample: L517283-11 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Sample: L517283-12 Account: PORTENVTX Received: 05/20/11 08:45 Due Date: 05/27/11 00:00 RPT Date: 05/27/11 13:39 Refer to 05-0068

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

June 28, 2011

Eric Koltes, Project Manager Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaquah, WA 98027

RE: Job 77380.36, F&BI 106382

Dear Mr. Koltes:

Included are the results from the testing of material submitted on June 28, 2011 from the Job 47380.36, F&BI 106382 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EPI0628R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on June 28, 2011 by Friedman & Bruya, Inc. from the Environmental Partners Job 47380.36, F&BI 106382 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>

Environmental Partners

106382-01

SMSS-BG

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SMSS-BG

Date Received: Date Extracted: 06/28/11 06/28/11

Date Analyzed: Matrix:

06/28/11 Soil

Units:

mg/kg (ppm)

Client: Project: **Environmental Partners**

Job 47380.36, F&BI 106382

Lab ID:

106382-01 106382-01.013

Data File: Instrument:

ICPMS1 AP

Operator:

Lower Limit: Upper Limit:

60

125

Internal Standard:

Indium

% Recovery:

86

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

Method Blank

Date Received:
Date Extracted:

Not Applicable 06/27/11

Date Analyzed: Matrix: 06/28/11 Soil

Units:

mg/kg (ppm)

Client: Project: Environmental Partners Job 47380.36, F&BI 106382

Lab ID:

Job 47380.36, F&BI 10636 I1-438 mb

Data File:

I1-438 mb.008

Instrument: Operator:

ICPMS1 AP

Operator

Lower

Upper Limit:

Internal Standard:

Indium

% Recovery:

88

Limit: 60

Limit 125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

<1

ENVIRONMENTAL CHEMISTS

Date of Report: 06/28/11 Date Received: 06/28/11

Project: Job 47380.36, F&BI 106382

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 106364-01 (Matrix Spike)

<u> </u>				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Amalarta	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Analyte	mg/kg (ppm)	10	6.60	100 b	95 b	44-151	5 b

Laboratory Code: Laboratory Control Sample

-			$\mathbf{Percent}$	
Analyte	Reporting Units	Spike Level	Recovery LCS	Acceptance Criteria
Allalyte		10	100	80-120
Arsenic	mg/kg (ppm)	10	100	00-120

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1-More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

06/28/11	10 0	Standard Standard M. PIISH 134 EAD AF (2) 8	Rush charges authorized by:	SAMPLE DISPOSAL	Dispose after 30 days Return samples Will call with instructions		Notes								aive at 24 °C	
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106382	Send Report To ELIC	1 1	Address 295 NE Gilman Blvd.	City, State, ZIP Issaquah, WA 98027			Sample ID	5MSS-13G						•		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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Defrated Hard				
Milledan	Michael Erdahl	T. Kin	1/28/11	Mros: 4 11/86/
Relinquished by:				
Received by:				

Seattle, WA 98119-2029

Ph. (206) 285-8282 Fax (206) 283-5044

Friedman & Bruya, Inc. 3012 16th Avenue West

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Charlene Morrow, M.S. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 FAX: (206) 283-5044 e-mail: fbi@isomedia.com

May 31, 2011

Eric Koltes, Project Manager Environmental Partners, Inc. 295 NE Gilman Blvd., Suite 201 Issaguah, WA 98027

RE: Tee 47308.36, F&BI 105338

Dear Mr. Koltes:

Included are the results from the testing of material submitted on May 26, 2011 from the Tee 47308.36, F&BI 105338 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EPI0531R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on May 26, 2011 by Friedman & Bruya, Inc. from the Environmental Partners Tee Tee 47308.36, F&BI 105338 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Partners
105338-01	SMSS-RA2
105338-02	SMSS-D2
105338-03	SMSS-RA1
105338-04	WSSB11-1
105338-05	WSSB11-2
105338-06	WS11-AM24
105338-07	Starroad-1507
105338-08	Starroad-1705
105338-09	Starroad-1807

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SMSS-RA2

Date Received: Date Extracted: 05/26/11 05/27/11 05/27/11

Date Analyzed: Matrix: Units:

Soil

mg/kg (ppm)

Client: Project: **Environmental Partners** Tee 47308.36, F&BI 105338

Lab ID: Data File:

105338-01 105338-01.018

Instrument: ICPMS1

Operator:

AP

Lower

Upper Limit:

Internal Standard:

Indium

% Recovery:

95

Limit: 60

125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SMSS-D2

Date Received: Date Extracted: 05/26/11 05/27/11 05/27/11

Date Analyzed: Matrix: Units:

Soil

mg/kg (ppm)

Client: Project: **Environmental Partners** Tee 47308.36, F&BI 105338

Lab ID:

105338-02

105338-02.021 Data File:

Instrument: ICPMS1

Operator:

AP

Lower Limit:

60

Upper Limit: 125

Internal Standard:

Indium

Analyte:

% Recovery:

92

Concentration

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

SMSS-RA1

Date Received: Date Extracted:

05/26/11 05/27/11 05/27/11

Date Analyzed: Matrix: Units:

Soil

mg/kg (ppm)

Client: Project: **Environmental Partners** Tee 47308.36, F&BI 105338

Lab ID:

105338-03

Data File:

105338-03.022 ICPMS1

Instrument:

AP

Operator:

Lower Limit:

Upper Limit:

Internal Standard:

Indium

% Recovery:

92

60

125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

WSSB11-1

Date Received: Date Extracted: Date Analyzed:

05/26/11 05/27/11 05/27/11

Matrix: Units:

Soil

mg/kg (ppm)

Data File:

Environmental Partners Tee 47308.36, F&BI 105338

Project: Lab ID:

Client:

105338-04

105338-04.023 Instrument: ICPMS1

Operator: AP

Lower

Internal Standard:

Indium

% Recovery:

91

Limit: 60

Upper Limit: 125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

WSSB11-2

Date Received: Date Extracted:

05/26/11 05/27/11 05/27/11

Date Analyzed: Matrix: Units:

Soil

mg/kg (ppm)

Client: Project:

Environmental Partners Tee 47308.36, F&BI 105338

Lab ID:

105338-05

Data File:

105338-05.024

AP

Instrument: ICPMS1

Operator:

Lower

Upper Limit:

Internal Standard:

Indium

% Recovery:

91

Limit: 60

125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

WS11-AM24

Date Received: Date Extracted: 05/26/11 05/27/11 05/27/11

Date Analyzed: Matrix:

Soil

Units:

mg/kg (ppm)

Client: Project:

Environmental Partners Tee 47308.36, F&BI 105338

Lab ID:

105338-06

Data File: 105338-06.025

Instrument: ICPMS1

AP Operator:

> Lower Limit:

Upper Limit:

Internal Standard:

Indium

% Recovery:

89

60

125

Concentration

Analyte:

mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:

Method Blank

Date Received: Date Extracted: Not Applicable 05/27/11

Date Analyzed: Matrix: Units:

05/27/11 Soil

mg/kg (ppm)

Client: Project: **Environmental Partners** Tee 47308.36, F&BI 105338

Lab ID:

I1-371 mb I1-371 mb.015

Data File: Instrument: ICPMS1

Operator:

AP

Lower Limit: 60

Upper Limit: 125

Internal Standard:

Indium

% Recovery:

89

Concentration

mg/kg (ppm)

Arsenic

Analyte:

<1

ENVIRONMENTAL CHEMISTS

Date of Report: 05/31/11 Date Received: 05/26/11

Project: Tee 47308.36, F&BI 105338

Date Extracted: 05/27/11 Date Analyzed: 05/27/11

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
Starroad-1507 105338-07 1/10	13
Starroad-1705 105338-08 1/10	6.1
Starroad-1807 105338-09 1/10	3.3
Method Blank	< 0.1

ENVIRONMENTAL CHEMISTS

Date of Report: 05/31/11 Date Received: 05/26/11

Project: Tee 47308.36, F&BI 105338

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 105338-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	13.8	110 b	103 b	44-151	7 b

Laboratory Code: Laboratory Control Sample

	-	_	Percent	
Analyte	Reporting Units	Spike Level	Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	108	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 05/31/11 Date Received: 05/26/11

Project: Tee 47308.36, F&BI 105338

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 105338-01 1/50 (Matrix Spike)

		`		Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Mercury	mg/kg (ppm)	0.125	62	0 b	0 b	45-162	0 b

Laboratory Code: Laboratory Control Sample

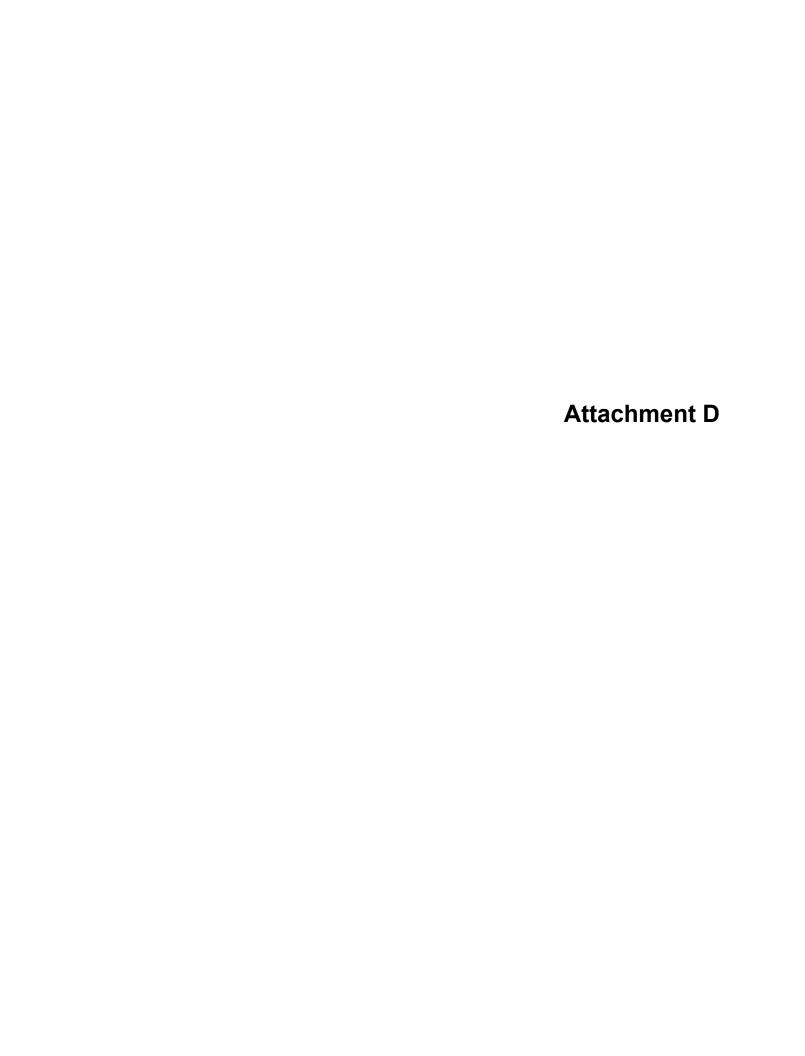
FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- $\ensuremath{\mathrm{ip}}$ Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j-The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- ${
 m jr}$ The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- $\,\mathrm{nm}$ The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- ve Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

ν ₀ -	Samples Cognitive 2	The state of	ampit	ra								oy.	received by.	x (206) 283-5044
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Soil Toxicity Evaluation

Northwest Pipeline GP Meter Station Facilities throughout Washington State

DRAFT Report

Date: September 1, 2011

Submitted to:

Environmental Partners, Inc. 295 NE Gilman Boulevard Suite 201 Issaquah, Washington 98027

Washington Laboratory 5009 Pacific Hwy East Suite 2 Tacoma, WA 98424

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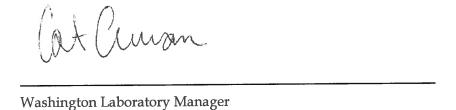
APPENDIX A - Summary of Results and Statistics

APPENDIX B - Laboratory Datasheets

APPENDIX C - Reference Toxicant Test Results

APPENDIX D - Chain-of-Custody Forms

SIGNATURE PAGE



This report has been prepared based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party.

1.0 INTRODUCTION

Laboratory toxicity testing was conducted on soil samples collected from 7 sites near Northwest Pipeline General Partnership (NWPL GP) meter stations facilities, following site-specific terrestrial ecological evaluation (TEE) methodology under the Model Toxics Control Act (MTCA). The specific contaminants of concern for the bioassay component of the TEE were arsenic and inorganic mercury. Toxicity tests were conducted using the earthworm *Eisenia foetida*, of the family lumbricidae and the butter crunch lettuce seed *Lactuca sativa*. Two different tests were conducted with the earthworm, the 14-day survival test and a 28-day bioaccumulation test. Samples tested for bioaccumulation were then sent to TestAmerica, an analytical laboratory, for arsenic determinations. Testing was initiated June, 2011 at the Washington Laboratory of Nautilus Environmental, located in Tacoma, Washington. Test procedures followed methods published by Washington State Department of Ecology for the Toxics Cleanup Program and ASTM.

2.0 METHODS

2.1 Sample Receipt and Manipulation

Seven soil samples were collected by Environmental Partners personnel between May 3^{rd} and 17^{th} , 2011 into HPDE containers. Individual samples were in labeled plastic jars, transported in coolers, and were received by Nautilus on June 3^{rd} , 2011. All samples were transported in coolers. Individual samples were in labeled plastic jars. Upon receipt in the laboratory, the coolers were opened and the contents inspected and compared with documentation provided on the chain-of-custody forms (COC), where discrepancies occurred, samples identities were confirmed with Environmental Partners. Sample temperatures were measured upon receipt and recorded on both the COC and in a bound logbook maintained in the laboratory. Samples were held in the dark at $4 \pm 2^{\circ}$ C until testing.

Large pieces of wood, debris and rocks were removed from soils prior to testing. No sieving was performed on the samples. Analysis of soil pH, conductivity, and moisture content were performed upon sample receipt.

Sample ID's with corresponding dates of collection, and test initiation dates for all three tests are provided in Table 1.

Table 1. Sample collection, receipt, expiration, and test initiation dates.

Client ID	Nautilus Log-In Number	Date Collected	Lettuce Test Initiation	14-day Earthworm Test Initiation	28-day Earthworm Test Initiation
SHSB2-3:18	S11-061	May 13, 2011	June 7, 2011	June 9, 2011	NT
WSSB6-0910	S11-055	- May 17, 2011	June 7, 2011	June 9, 2011	NT
ELSS-0810	S11-057	Wiay 17, 2011	iny 17, 2011 ,		
STARROAD 1807	S11-059	May 16, 2011	June 7, 2011	June 9, 2011	NT
SH4-W64	S11-062	May 3, 2011	June 7, 2011	NT	June 9, 2011
WS11-AM24	S11-051	- May 17, 2011	June 7, 2011	NT	June 9, 2011
YFSS-D1	S11-053	1viay 17, 2011	june / / 2011		

2.2 Lettuce seedling survival and biomass test methods

A lettuce seedling survival and biomass test was conducted on samples received June 3, 2011 using butter crunch lettuce seeds, *Lactuca sativa*. The organisms were obtained from Territorial Seed Company, Oregon. The tests were initiated on June 7, 2011. Tests were performed according to procedures presented by WADOE (1996) and ASTM (1994). Test procedures are summarized in Table 2.

Prior to test initiation, 300 g subsamples were collected from the negative control and each site, for use in the test, as well as for initial pH measurements. Using an Orion 230 meter, pH measurements were taken by making a slurry of de-ionized (DI) water and soil in a 1:1 ratio (i.e., 25 mL DI water: 25 g soil). Soil slurry pH was measured after allowing soil/water mixture to stir for 5 minutes. Once the measurement was taken, the slurry was allowed to settle for 30 minutes, after which the pH of the supernatant liquid was measured. Sample soils were hydrated with DI water to match control friability where necessary, and distributed into three poly flat 36-cell trays with humidity domes. Five replicates per sample, each containing 50 g of soil, were randomly distributed into trays. Sample distribution took place according to a randomization sheet and planting maps created in Excel. Trays were placed in an environmental chamber at 25°C under a 16:8 hour light:dark photoperiod.

Lighting for the test was provided by 2-bulb gro-lights placed over each planting tray. Light measurements were taken upon test initiation, day seven, and at termination using a Milwaukee SM 700 photometer. Test temperatures were measured daily from a surrogate test chamber.

Table 2. Summary of testing conditions for the lettuce survival and biomass test.

Test start date	June 7, 2011
Test end date	June 21, 2011
Test organism	Lactuca sativa
Test organism source	Territorial Seed Company, Cottage Grove, OR
Test duration	14 days
Test chamber	60-mL planting cell with 4 drainage holes in bottom
Test soil/replicate	50 g dry weight
Water source for hydration	De-ionized water
Control soil	70% sand, 20% kaolin clay, 10% peat moss, 0.45% CaCO $_3$
Number of organisms/replicate	12
Number of replicates/sample	5
Test temperature	20-30°C
Illumination	16:8 hr light:dark photoperiod
Test acceptance criterion	≥90% mean germination in control organisms
Positive control reference toxicant	Boric acid

The tests were terminated on day 14, June 21, 2011. At test termination, the number of seedlings in each replicate was counted and observations on seedling condition (e.g., chlorosis, wilting) were recorded. The above-soil portion of each seedling was then cut at the soil using scissors; and placed in a pre-tared weigh boat corresponding to the replicate number. A 25 g subsamble of soil from each site was collected for final pH measurements from a randomly chosen replicate.

Weigh boats containing seedlings were weighed immediately after cutting using a Mettler AE 240 scale, in order to obtain wet weights, and were subsequently placed in a Thelco 28 oven to dry for 24 hours. Seedlings were weighed at the end of the drying period in order to obtain dry weights. The endpoints calculated were the number of seedling surviving and their biomass (evaluated on the basis of dry weight divided by final count). The test acceptance criterion for the negative control was seedling survival of \geq 90 percent. Statistics were run using Biostat software on all sites where survival or growth were less than control, using a level of significance of 0.05.

A reference toxicant test (positive control) was conducted in conjunction with the lettuce seedling survival and biomass tests using boric acid as the toxicant. Test organisms were exposed to control, 40, 80, 160, 320 and 640 mg/kg boron for the same duration as the concurrent soil test, and the results of this test were compared with historical data for the species to determine whether the sensitivity of the organisms was appropriate.

2.3 Earthworm 14- day survival test methods

An earthworm survival test was conducted on samples received June 3, 2011 using the red wiggler worm, *Eisenia foetida*. The organisms were obtained from Aquatic Research Organisms, NH. Nautilus Environmental received the organisms at the laboratory on June 2, 2011 in good condition. Tests were initiated on June 9, 2011 according to procedures presented by WADOE (1996) and ASTM (1994). Test procedures are summarized in Table 3.

Table 3. Summary of testing conditions for the earthworm survival test.

Test start date	June 9, 2011
Test end date	June 23, 2011
Test organism	Eisenia foetida
Test organism source	Aquatic Research Organisms, Hampton, NH
Test organism age	>90 days
Test duration	14 days
Test chamber	1-L glass jar
Test soil/replicate	200 g dry weight
Water source for hydration	De-ionized water
Control soil	70% sand, 20% kaolin clay, 10% peat moss, 0.45% CaCO $_3$
Number of organisms/replicate	10
Number of replicates/sample	3
Test temperature	22± 2°C
Illumination	Continuous lighting
Test acceptance criterion	≥90% mean survival of control organisms
Positive control reference toxicant	2-chloroacetamide

Twenty-four hours prior to testing, 25 g of soil was removed from each sample, the initial weight of soil and vessel was obtained, and samples were then placed in a Thelco 28 oven set to between 103 and 105°C to dry for 24 hours. After 24 hours, samples were removed from the oven, allowed to cool, and final weights were obtained to determine the moisture content of each sample. Samples with a moisture content of less than 35 percent were then hydrated to match control levels or control friability, as required. Moisture content upon receipt of the samples, as well as hydration requirements and amount of water added to samples is contained in Table 4.

On test initiation, pH and conductivity measurements were conducted on a slurry of de-ionized (DI) water and soil in a 1:1 ratio (i.e., 25 mL DI water:25 g soil). Soil slurry pH was measured after allowing soil/water mixture to stir for 5 minutes. Once the measurement was taken, the slurry was allowed to settle for 30 minutes, after which the pH of the supernatant liquid was

Nautilus Environmental Washington Laboratory measured. Conductivity and pH measurements were conducted utilizing an Orion 130A and Orion 320 meter, respectively.

Sample soils were hydrated with DI water where necessary, and distributed into 1-L labeled glass jars prior to test initiation. Three replicates and a surrogate were used for each sample, each containing 200 g of soil. Moisture content was also determined at test initiation. Sample distribution took place according to a randomization sheet created in Excel. Organisms, greater than 90 days old, were added following sample distribution, once samples were confirmed to be within acceptable temperature range. Jars were placed in an environmental chamber at $22 \pm 2^{\circ}$ C under continuous light conditions.

Test temperatures were measured daily from surrogate test chambers. Test chambers were misted daily with DI water in order to maintain proper moisture levels.

Table 4. Pre-test hydration used for visual match of control friability.

Client ID	Nautilus Log-In	Initial Moisture Content (%)	Hydration Needed (%)	Amount of Water Added to Sample (ml)
SHSB2-3:18	S11-061	7.3	27.7	166
WSSB6-0910	S11-055	7.3	27.7	166
ELSS-0810	S11-057	8.7	26.3	158
STARROAD 1807	S11-059	12.1	22.9	137
SH4-W64	S11-062	14.2	20.8	125
WS11-AM24	S11-051	30.1	4.1	24.7
YFSS-D1	S11-053	7.3	27.7	166

The tests were terminated on day 14, June 23, 2011. At test termination, prior to counting, observations were made of each test chamber, including dead organisms on the surface or any behavior abnormalities. To count test organisms, sample replicates were transferred to a flat surface lined with moistened paper towels, animals were counted, and any behavior (e.g., lack of burrowing, coiling, "balling" together), or morphological changes (e.g., contraction, rigidity, ulceration of the integument, segmental constriction, segmental loss) were noted. The surrogate chamber was used to determine final moisture content, and final pH and conductivity measurements.

The endpoint calculated was earthworm survival. The test acceptance criterion for the negative control was earthworm survival of \geq 90 percent. Statistics were run using Biostat software on all sites where survival were less than control, using a level of significance of 0.05.

A reference toxicant test (positive control) was conducted in conjunction with the earthworm survival tests using 2-chloroacetamide. Test organisms were exposed to control, 10, 20, 40, and 80 mg/kg 2-chloroacetamide for the same duration as the concurrent soil tests, and the results of this test were compared with historical data for the species to determine whether the sensitivity of the organisms was appropriate.

2.4 Earthworm 28- day bioaccumulation test methods

Methods for the 28-day tests with earthworms followed the same methods as the 14-day for test initiation and daily monitoring, as outlined in Section 2.3. The test was terminated on July 7, 2011 following the same procedures. Worms were then separated from the soil and were stored in clean glass jars overnight to allow for depuration. The day following termination, worms were placed in chemistry containers by site and sent to an analytical chemical laboratory for analysis. There were no statistical endpoints calculated for this test. The chemistry data is reported here and will be used by Environmental Partners to calculate a bioaccumulation factor.

3.0 RESULTS

Results of toxicity tests conducted using butter crunch lettuce starting June 7, 2011 are summarized in Tables 5 and 6. Results of toxicity tests conducted using *E. foetida* starting June 9, 2011 are summarized in Tables 7 and 8. Detailed results of the soil toxicity tests and statistical analyses are provided in Appendix A. Copies of the laboratory bench sheets, reference toxicant test results, and chain-of-custody forms are in Appendices B, C, and D.

3.1 Lettuce toxicity results

Mean survival was 91.7 percent for the artificial soil control. The mean survival in the test soils ranged from 78.3 to 91.7 percent. None of the sites exhibited significant toxic effects when compared to negative control survival results.

Mean biomass was 1.18 mg per seedling for the artificial soil control. Mean biomass in the test soils ranged from 1.00 to 2.27 mg per seedling. None of the sites were significantly different than the negative control for growth.

Table 5. Results (means ± standard deviations) for L. sativa survival

Site ID/ Nautilus Log-In Number	% Survival	Mean Survival (%)	% of Control	Significant Decrease from Control? (p<0.05)
Negative Control	91.7 75.0 91.7 100 100	91.7 ± 10.2		
SHSB2-3:18 S11-061	91.7 91.7 100 91.7 83.3	91.7 ± 5.9	100	No
WSSB6-0910 S11-055	100 91.7 91.7 83.3 58.3	85.0 ± 16.0	92.7	No
ELSS-0810 SS11-057	58.3 91.7 83.3 100 58.3	78.3 ± 19.2	85.4	No
STARROAD 1807 S11-059	100 83.3 91.7 91.7 91.7	91.7 ± 5.9	100	No
SH4-W64 S11-062	75.0 100 91.7 91.7 100	91.7 ± 10.2	100	No
WS11-AM24 S11-051	91.7 91.7 91.7 83.3 66.7	85.0 ± 10.9	92.7	No
YFSS-D1 S11-053	100 100 58.3 91.7 83.3	86.7 ± 17.3	94.5	No

Table 6. Results (means ± standard deviations) for L. sativa growth

Site ID/Nautilus Log-In Number	Growth per Seedling (mg)	Mean Growth per Organism (mg)	% of Control	Significant Decrease from Control? (p<0.05)
Negative Control	1.56 1.39 0.62 1.34 0.99	1.18 ± 0.38		
SHSB2-3:18 S11-061	1.34 1.67 1.74 0.75 1.56	1.41 ± 0.40	119	No
WSSB6-0910 S11-055	1.11 1.17 1.58 2.12 1.45	1.49 ± 0.40	126	No
ELSS-0810 SS11-057	0.98 0.94 1.27 1.07 0.77	1.01 ± 0.18	85.6	No
STARROAD 1807 S11-059	2.30 1.77 2.31 2.24 2.72	2.27 ± 0.34	192	No
SH4-W64 S11-062	1.23 1.71 1.57 1.93 2.26	1.74 ± 0.38	147	No
WS11-AM24 S11-051	1.22 2.00 0.90 1.00 1.05	1.23 ± 0.44	104	No
YFSS-D1 S11-053	0.56 1.00 0.87 1.38 1.20	1.00 ± 0.31	84.7	No

3.2 Earthworm 14-day toxicity results

Mean survival was 100 percent for the artificial soil control as well as the test sites, SHSB2-3:18 and WSSB6-0910, and STARROAD 1807. Site ELSS-0810 had 96.7 percent survival. None of the test sites were significantly different from the control.

Table 7. Results (means ± standard deviations) for *E. foetida* survival

Site ID/Nautilus Log-In Number	Survival (%)	Mean Survival (%)	% of Control	Significant Decrease from Control? (p<0.05)
	100			
Negative Control	100	100 ± 0.0		
	100			
CLICDO 2.10	100			
SHSB2-3:18	100	100 ± 0.0	100	No
S11-061	100			
TAICCD (0010	100			
WSSB6-0910 S11-055	100	100 ± 0.0	100	No
511-055	100			
EI CC 0010	100			
ELSS-0810	90.0	96.7 ± 5.8	96.7	No
SS11-057	100			
CTARROAD 1907	100			
STARROAD 1807	100	100 ± 0.0	100	No
S11-059	100			

3.3 Earthworm 28-day bioaccumulation results

Control arsenic concentrations were determined to be 3.6 mg/kg at test termination. Site concentrations ranged from 4.1 to 7.8 mg/kg.

Table 8. Analytical chemistry results after 28-days for E. foetida

Site ID/Nautilus Log-In Number	Arsenic Concentration (mg/kg)
Negative Control	3.6
SH4-W64 S11-062	7.8
WS11-AM24 S11-051	4.1
YFSS-D1 S11-053	7.4

3.4 Soil Chemistries

Soil chemistry data are provided in Appendix B. Lettuce test sample pH from test initiation and termination are provided in Tables 9, while pH, conductivity, and percent moisture data for the 14-day earthworm are contained in Table 10. A summary of physical and chemical characteristics measured during testing is provided in Tables 11 through 13.

For the lettuce test temperatures ranged between 21.5 and 28.0°C for the duration of the test. The temperature in the 14-day earthworm test ranged from 21.9-22.0 °C, while the 28-day test ranged from 21.3-22.0 °C for the duration of the tests.

Table 9. Initial and final pH values for 14-day lettuce tests

Sample ID	Nautilus Log-In	Soil Slu	ırry pH	Soil Super	natant pH
	Number -	Initial	Final	Initial	Final
SHSB2-3:18	S11-061	5.14	5.66	5.94	5.69
WSSB6-0910	S11-055	7.41	7.73	7.51	7.80
ELSS-0810	S11-057	6.85	7.34	7.28	7.67
STARROAD 1807	S11-059	7.50	8.10	7.52	8.13
SH4-W64	S11-062	7.05	7.58	7.50	7.55
WS11-AM24	S11-051	7.50	7.94	7.51	8.00
YFSS-D1	S11-053	7.51	7.93	7.52	7.93

Table 10. Initial and final soil chemistry values for the E. foetida tests

Sample ID	Nautilus Log-In	% Mo	isture	Soil Slu	ırry pH	Soil S Conductivi	
	Number	Initial	Final	Initial	Final	Initial	Final
			14-day 🗆	Γests			
Negative Control		51.5	38.1	7.63	7.69	285	473
SHSB2-3:18	S11-061	10.1	19.1	8.09	7.59	71	370
WSSB6-0910	S11-055	5.5	16.8	8.10	6.66	17	219
ELSS-0810	S11-057	5.5	22.0	8.28	7.55	30	335
STARROAD 1807	S11-059	14.2	28.9	7.68	6.76	46	603
			28-day 7	Γests			
Negative Control		46.2	50.6	7.54	7.08	529	607
SH4-W64	S11-062	7.76	13.1	8.23	7.50	84	43
WS11-AM24	S11-051	38.9	51.5	6.54	5.54	16	15
YFSS-D1	S11-053	9.17	14.2	7.00	6.80	34	120

Table 11. Summary of Chemical/Physical Characteristics measured during L. sativa testing

Parameter	Criteria	Count	Minimum	Maximum	Average	Acceptable?
Initial pH (Slurry)	>5.0	7	5.14	7.51	6.99	Yes
Initial pH (Supernatant)	>5.0	7	5.94	7.52	7.25	Yes
Temperature (°C)	20-30	15	21.4	28.0	25.1	Yes
Light Reading (Lux)	>1000	3	2146	2262	2203	Yes

Table 12. Summary of Chemical/Physical Characteristics measured during the 14-day *E. foetida* testing

Parameter	Criteria	Count	Minimum	Maximum	Average	Acceptable? Samples affected
Initial Moisture Fraction (%)	35-45	5	5.49	51.5	17.3	No ¹ All three sites
Initial Slurry pH	>5.0	5	7.63	8.28	7.96	Yes
Initial Slurry Conductivity (µS/cm)		5	17	285	90.0	Yes
Temperature (°C)	22±2	15	21.9	22.0	22.0	Yes

¹Deviation from protocol not expected to influence results of the test, see QA/QC for discussion

Table 13. Summary of Chemical/Physical Characteristics measured during the 28-day *E. foetida* testing

Parameter	Criteria	Count	Minimum	Maximum	Average	Acceptable? Samples affected
Initial Moisture Fraction (%)	35-45	4	7.76	51.5	26.8	No ¹ SH4-W64, YFSS- D1
Initial Slurry pH	>5.0	4	6.54	8.23	7.33	Yes
Initial Slurry Conductivity (µS/cm)		4	16	529	166	Yes
Temperature (°C)	22±2	29	21.3	22	21.9	Yes

¹Deviation from protocol not expected to influence results of the test, see QA/QC for discussion

4.0 QA/QC

In both the 14- and 28-day earthworm tests, due to the nature of some of the soils, (consisting mostly of rocks and little to no organic matter that could hold moisture), all samples except WS11-AM24 were hydrated to 35 percent moisture content based on calculations. However, the measured percent moisture was significantly less than 35 percent. All samples took on the same appearance and friability as the control soil and the low moisture content is not thought to have affected the results.

All three tests met the acceptability criterion for negative control performance. Temperature readings remained within parameters for the duration of the test.

Results of reference toxicant test (positive control) conducted with the test organisms are provided in Table 14. The EC50 values fell within the acceptable range of mean ± two standard deviations for historical data, indicating that the test organisms appeared to have been of an appropriate degree of sensitivity.

Table 14. Reference toxicant test results.

Species	Endpoint	Date Initiated	EC50	Historical range (mean ± 2 SD)	Coefficient of Variation (%)
Lactuca sativa	Survival	6/7/2011	174 mg/kg B	106 – 377	28.1
	Biomass	6/7/2011	123 mg/kg B	96.6 - 194	16.8
Eisenia foetida	Survival	6/9/2011	35.8 mg/kg 2- Chloroacetamide	7.0 – 80.9	42.0

5.0 REFERENCES

- American Society of Testing and Materials (ASTM). 1999. Standard guide for conducting terrestrial plant toxicity tests. ASTM designation E1963-98.
- American Society of Testing and Materials (ASTM). 1997. Standard guide for conducting laboratory soil toxicity or bioaccumulation tests with the lumbricid earthworm *Eisenia* fetida. ASTM designation E1676-97.
- Biostat. DMMP/SMS Bioassay Statistics Program for Microsoft Windows. Developed by Corps of Engineers, Seattle District
- Washington State Department of Ecology (WDOE). 1996. Earthworm bioassay protocol for soil toxicity screening. WDOE Environmental Investigations and Laboratory Services Program Publication No. 96-327.

APPENDIX A - Summary of Results and Statistics

Appendix Table A-1: Lactuca sativa 14-day Survival and Growth Northwest Pipeline GP TEE Program Test Initiated June 7, 2011

			Survival	val				Growth			
Concentration	Rep	# Alive	% Survival	Mean % Survival	St. Dev.	Tare Weight (g)	Total Dry Welght (g)	Total Seedling Weight (mg)	Growth per Seedling (mg)	Mean Growth per Org (mg)	St. Dev.
	-	=	91.7			1.63560	1.65274	17.14	1.56		
	Ø	6	75.0			1.35860	1.37110	12.50	1.39		
Laboratory Control	က	=	91.7	91.7	10.2	1.42428	1.43108	6.80	0.62	1.18	0.38
	4	12	100.0			1.53960	1.55564	16.04	1.34		
	S	12	100.0			1.54137	1.55324	11.87	0.99		
	-	Ξ	91.7			1.73975	1.75454	14.79	1.34		
	Ŋ	=	91.7			1.76037	1.77874	18.37	1.67		
SHSBZ-3:18	က	12	100.0	91.7	5.9	1.66022	1.68107	20.85	1.74	1.41	0.40
S11-061	4	Ŧ	91.7			1.50294	1.51123	8.29	0.75		
	2	9	83.3			1.49273	1.50835	15.62	1.56		
	-	12	100.0			1.50121	1.51454	13.33	1.11		
	N	=	91.7			1.49888	1.51179	12.91	1.17		
WSSB6-0910	ო	=	91.7	85.0	16.0	1.51305	1.53038	17.33	1.58	1.49	0.40
ccn-115	4	10	83.3			1.48985	1.51108	21.23	2.12		
	2	7	58.3			1.48325	1.49343	10.18	1.45		
	-	_	58.3			1.66060	1.66749	6.89	0.98		
	2	-	91.7			1.67227	1.68264	10.37	0.94		
ELSS-0810	l m	9	83.3	78.3	19.2	1.70786	1.72053	12.67	1.27	1.01	0.18
/\$0-118	4	12	100.0			1.59567	1.60853	12.86	1.07		
	Ŋ	7	58.3			1.44806	1.45345	5.39	0.77		
	-	12	100.0			1.54378	1.57139	27.61	2.30		
700 t C 4 C C C C 4 F C	Ø	10	83.3			1.52690	1.54464	17.74	1.77		
STARFOAD 1807	က	=	91.7	91.7	5.9	1.62073	1.64619	25.46	2.31	2.27	0.34
600-110	4	1	91.7			1.69490	1.71952	24.62	2.24		
	2	=	91.7			1.48753	1.51747	29.94	2.72		
	-	6	75.0			1.52711	1.53821	11.10	1.23		
7970	8	12	100.0			1.49895	1.51949	20.54	1.71		
214 069	ო	=	91.7	91.7	10.2	1.34947	1.36679	17.32	1.57	1.74	0.38
	4	F	91.7			1.33579	1.35705	21.26	1.93		
	2	12	100.0			1.44537	1.47247	27.10	2.26		
	-	F	91.7			1.39530	1.40868	13.38	1.22		
WC11 AMOA	Ŋ	=	91.7			1.75900	1.78095	21.95	2.00		
VV G 1 1-7 IVIE+	ო	=	91.7	85.0	10.9	1.75735	1.76722	9.87	0.00	1.23	0.44
100-110	4	10	83.3			1.46752	1.47747	9.95	1.00		
	2	∞	2.99			1.62414	1.63251	8.37	1.05		
	-	12	100.0			1.66880	1.67552	6.72	0.56		
VEC D1	8	12	100.0			1.47496	1.48692	11.96	1.00		
C11.0E2	ო	7	58.3	86.7	17.3	1.51489	1.52101	6.12	0.87	1.00	0.31
20-1-0	4	=	91.7			1.53656	1.55174	15.18	1.38		
	വ	9	83.3			1.57413	1.58613	12.00	1.20		

Appendix Table A-21. *Eisenia. fetida* 14-Day Survival Northwest Pipeline GP TEE Program Test Initiated June 9, 2011

Site	Rep	# Alive	% Survival	Mean % Survival	St. Dev.
Laboratory	1	10	100		
	2	10	100	100.0	0.0
Control	3	10	100		
SHSB2-3:18	1	10	100		
II -	2	10	100	100.0	0.0
S11-061	3	10	100		
WSSB6-0910	1	10	100		
WSSB6-0910 S11-055	2	10	100	100.0	0.0
	3	10	100		
ELSS-0810	1	10	100		
II I	2	9	90	96.7	5.8
S11-057	3	10	100		
STARROAD 1807	1	10	100		
§1	2	10	100	100.0	0.0
S11-059	3	10	100		

Sample: x1

Samp ID: ELSS-0810

Alias: Lettuce Survival

Replicates: 5 Mean: 78.32 SD: 19.206 Tr Mean: 70.656 Trans SD: 26.607

Ref Samp: x2

Ref ID: Control

Alias: Lettuce Survival

Replicates: 5

Mean: 91.68 SD: 10.206 Tr Mean: 87.139

Trans SD: 25.638

Shapiro-Wilk Results:

Residual Mean: 0 Residual SD: 16.953

SS: 5460.982 K: 5 b: 69.424

Alpha Level: 0.05 Calculated Value: 0.8826 Critical Value: <= 0.842

> Normally Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 18.614 Test Residual SD: 16.578 Ref. Residual Mean: 21.962 Ref. Residual SD: 7.376 Deg. of Freedom: 8

> Alpha Level: 0.1 Calculated Value: 0.4126 Critical Value: >= 1.860

Variances Homogeneous: Yes Test Results:

Statistic: Student's t Balanced Design: Yes

Transformation: ArcSin

Experimental Hypothesis Null: x1 >= x2Alternate: x1 < x2

Degrees of Freedom: 8 Experimental Alpha Level: 0.05 Calculated Value: 0.9975

Critical Value: >= 1.860 Accept Null Hypothesis: Yes

Power: Min. Difference for Power:

				Trans.	Levene's	Levene's	Mann-		Shipiro-
Replicate	Test	Trans.	Reference	Reference	Test	Reference	Whitney		Wilk
Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
1	58.3	49.778	91.7	73.256	20.879	13.883			-27.139
2	91.7	73.256	75	60	2.599	27.139			-20.879
3	83.3	65.879	91.7	73.256	4.777	13.883			-20.879
4	100	114.591	100	114.591	43.935	27.453			-13.883
5	58.3	49.778	100	114.591	20.879	27.453			-13.883
6	00.0								-4.777
7									2.599
8									27.453
9									27.453
									43.935
10									

Sample: x1

Samp ID: ELSS-0810

Alias: Lettuce Growth

Replicates: 5 Mean: 1.006 SD: 0.183 Tr Mean: 1.173

Trans SD: 0.078

Ref Samp: x2

Ref ID: Control

Alias: Lettuce Growth

Replicates: 5

Mean: 1.18 SD: 0.375

Tr Mean: 1.239

Trans SD: 0.158

Shapiro-Wilk Results:

Residual Mean: 0

Residual SD: 0.081 SS: 0.124

K: 5

b: 0.343

Alpha Level: 0.05 Calculated Value: 0.9541

Critical Value: <= 0.842

Normally

Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 0.055 Test Residual SD: 0.047

Ref. Residual Mean: 0.125 Ref. Residual SD: 0.073

Deg. of Freedom: 8

Alpha Level: 0.1 Calculated Value: 1.7833 Critical Value: >= 1.860

Variances

Homogeneous: Yes

Test Results:

Statistic: Student's t

Balanced Design: Yes

Transformation: Sqr Root (x + .375)

Experimental Hypothesis

Null: x1 >= x2

Alternate: x1 < x2

Degrees of Freedom: 8 Experimental Alpha Level: 0.05

Calculated Value: 0.8381

Critical Value: >= 1.860 Accept Null Hypothesis: Yes

Power:

Min. Difference for Power:

				Trans.	Levene's	Levene's	Mann-		Shipiro-
Replicate	Test	Trans.	Reference	Reference	Test	Reference	Whitney		Wilk
Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
1	0.98	1.164	1.56	1.391	0.009	0.152			-0.242
2	0.94	1.147	1.39	1.329	0.026	0.09			-0.103
3	1.27	1.283	0.62	0.997	0.109	0.242			-0.071
4	1.07	1.202	1.34	1.31	0.029	0.071			-0.026
5	0.77	1.07	0.99	1.168	0.103	0.071			-0.009
6									0.029
7									0.071
8									0.09
9									0.109
10									0.152

Sample: x1

Samp ID: WS11-AM24

Alias: Lettuce Survival

Replicates: 5 Mean: 85.02 SD: 10.868 Tr Mean: 68.08

Trans SD: 8.105

Ref Samp: x2

Ref ID: Control

Alias: Lettuce Survival

Replicates: 5

Mean: 91.68 SD: 10.206 Tr Mean: 87.139 Trans SD: 25.638

Shapiro-Wilk Results: Residual Mean: 0 Residual SD: 12.337

> SS: 2892.022 K: 5 b: 51.573

Alpha Level: 0.05 Calculated Value: 0.9197 Critical Value: <= 0.842

> Normally Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 6.21 Test Residual SD: 4.18 Ref. Residual Mean: 21.962 Ref. Residual SD: 7.376 Deg. of Freedom: 8

> Alpha Level: 0.1 Calculated Value: 4.1543 Critical Value: >= 1.860

Variances Homogeneous: No Test Results:

Statistic: Approximate t

Balanced Design: Yes Transformation: ArcSin

> Experimental Hypothesis Null: x1 >= x2Alternate: x1 < x2

Degrees of Freedom: 5 Experimental Alpha Level: 0.05 Calculated Value: 1.5849

Critical Value: >= 2.015 Accept Null Hypothesis: Yes

Power: Min. Difference for Power:

				Trans.	Levene's	Levene's	Mann-		Shipiro-
Replicate	Test	Trans.	Reference	Reference	Test	Reference	Whitney		Wilk
Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
1	91.7	73.256	91.7	73.256	5.175	13.883			-27.139
2	91.7	73.256	75	60	5.175	27.139			-13.883
3	91.7	73.256	91.7	73.256	5.175	13.883			-13.883
4	83.3	65.879	100	114.591	2.201	27.453			-13.325
5	66.7	54.756	100	114.591	13.325	27.453			-2.201
6									5.175
7									5.175
8									5.175
9									27.453
10									27.453
.0									

Sample: x1

Samp ID: WSSB6-0910
Alias: Lettuce Survival

Replicates: 5
Mean: 85
SD: 16.051
Tr Mean: 85

Trans SD: 16.051

Ref Samp: x2

Ref ID: Control

Alias: Lettuce Survival

Replicates: 5

Mean: 91.68

SD: 10.206

Tr Mean: 91.68

Trans SD: 10.206

Shapiro-Wilk Results:

Residual Mean: 0 Residual SD: 8.728 SS: 1447.228

K: 5 b: 35.389

Alpha Level: 0.05
Calculated Value: 0.8653
Critical Value: <= 0.842

Normally
Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 11.36 Test Residual SD: 9.815 Ref. Residual Mean: 6.672 Ref. Residual SD: 6.966

Deg. of Freedom: 8

Alpha Level: 0.1
Calculated Value: 0.871
Critical Value: >= 1.860

Variances Homogeneous: Yes Test Results:

Statistic: Student's t

Balanced Design: Yes
Transformation: No Transformation

Experimental Hypothesis
Null: x1 >= x2

Null: x1 >= x2Alternate: x1 < x2

Degrees of Freedom: 8
Experimental Alpha Level: 0.05
Calculated Value: 0.7853

Critical Value: >= 1.860 Accept Null Hypothesis: Yes

Power: Min. Difference for Power:

Banliasta	Test	Trans.	Reference	Trans. Reference	Levene's Test	Levene's Reference	Mann- Whitney		Shipiro- Wilk
Replicate Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
Number	100	100	91.7	91.7	15	0.02			-26.7
2	91.7	91.7	75	75	6.7	16.68			-16.68
3	91.7	91.7	91.7	91.7	6.7	0.02			-1.7
4	83.3	83.3	100	100	1.7	8.32			0.02
5	58.3	58.3	100	100	26.7	8.32			0.02
6	50.0	00.0							6.7
7									6.7
									8.32
8									8.32
9									15
10									

Sample: x1

Samp ID: YFSS-D1

Alias: Lettuce Survival

Replicates: 5

Mean: 86.66 SD: 17.298

Tr Mean: 86.66 Trans SD: 17.298 Ref Samp: x2

Ref ID: Control

Alias: Lettuce Survival

Replicates: 5

Mean: 91.68 SD: 10.206 Tr Mean: 91.68

Trans SD: 10.206

Shapiro-Wilk Results:

Residual Mean: 0 Residual SD: 9.215

SS: 1613.56 K: 5

b: 37.528 Alpha Level: 0.05

Calculated Value: 0.8728
Critical Value: <= 0.842

Normally
Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 12.688 Test Residual SD: 9.899

Ref. Residual Mean: 6.672 Ref. Residual SD: 6.966 Deg. of Freedom: 8

Alpha Level: 0.1
Calculated Value: 1.1114
Critical Value: >= 1.860

Variances

Homogeneous: Yes

Test Results:

Statistic: Student's t

Balanced Design: Yes

Transformation: No Transformation

Experimental Hypothesis

Null: x1 >= x2

Alternate: x1 < x2

Degrees of Freedom: 8
Experimental Alpha Level: 0.05

Calculated Value: 0.5589
Critical Value: >= 1.860

Accept Null Hypothesis: Yes

Power:

Min. Difference for Power:

				Trans.	Levene's	Levene's	Mann-		Shipiro-
Replicate	Test	Trans.	Reference	Reference	Test	Reference	Whitney		Wilk
Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
1	100	100	91.7	91.7	13.34	0.02			-28.36
2	100	100	75	75	13.34	16.68			-16.68
3	58.3	58.3	91.7	91.7	28.36	0.02			-3.36
4	91.7	91.7	100	100	5.04	8.32			0.02
5	83.3	83.3	100	100	3.36	8.32			0.02
6									5.04
7									8.32
8									8.32
9									13.34
10									13.34
"									
1									

Sample: x1

Samp ID: YFSS-D1

Alias: Lettuce Growth

Replicates: 5

Mean: 1.002 SD: 0.314 Tr Mean: 1.002

Trans SD: 0.314

Ref Samp: x2

Ref ID: Control

Alias: Lettuce Growth

Replicates: 5

Mean: 1.18 SD: 0.375

Tr Mean: 1.18

Trans SD: 0.375

Shapiro-Wilk Results:

Residual Mean: 0 Residual SD: 0.225

> SS: 0.959 K: 5

> > b: 0.942

Alpha Level: 0.05

Calculated Value: 0.9253 Critical Value: <= 0.842

> Normally Distributed: Yes

Override Option: N/A

Levene's Results:

Test Residual Mean: 0.23 Test Residual SD: 0.18 Ref. Residual Mean: 0.3

Ref. Residual SD: 0.169 Deg. of Freedom: 8

Alpha Level: 0.1
Calculated Value: 0.6311
Critical Value: >= 1.860

Variances

Homogeneous: Yes

Test Results:

Statistic: Student's t

Balanced Design: Yes

Transformation: No Transformation

Experimental Hypothesis

Null: x1 >= x2

Alternate: x1 < x2

Degrees of Freedom: 8
Experimental Alpha Level: 0.05

Calculated Value: 0.813
Critical Value: >= 1.860

Accept Null Hypothesis: Yes

Power:

Min. Difference for Power:

				Trans.	Levene's	Levene's	Mann-		Shipiro-
Replicate	Test	Trans.	Reference	Reference	Test	Reference	Whitney		Wilk
Number	Data	Test Data	Data	Data	Residuals	Residuals	Ranks	Rankits	Residuals
1	0.56	0.56	1.56	1.56	0.442	0.38			-0.56
2	1	1	1.39	1.39	0.002	0.21			-0.442
3	0.87	0.87	0.62	0.62	0.132	0.56			-0.19
4	1.38	1.38	1.34	1.34	0.378	0.16			-0.132
5	1.2	1.2	0.99	0.99	0.198	0.19			-0.002
6									0.16
7									0.198
8									0.21
9									0.378
10									0.38

APPENDIX B - Laboratory Datasheets

Client: ENLY ON WILL COUNTY BANKEYS, I'M.C. Start Date/Time: (e 71/11 1435)
Species: Lactuca sativa (butter crunch lettuce)
End Date/Time: [6/21/11 | 300

Sample IDS: 44 582-3:18 WESBG-0410, 8155-0810, STREEDARD 1804, SH4-WON, WSII-ANIZY, YESS-DI
TOST #S: 1100- TODY, TODY, TODS, TUDG, TO10, TO12, TO12

Nautilus Log-In #s. 511-001, 511-055, 511-054, 511-059, 511-002, 511-051, 811-053

			****					w	****						
Tech	(§)	(3)	#	MF	4	W.	હ	*	B	8	\$	8	(E)	30	è
Light Intensity (lux)	2262							2116							2200
Plants Watered (AM/PM)		(a) (a)	#/1/	を含め	推/推	IF / IF	さん		(A) (A)	(C)	· (本/人)	(B/C)		(4/10)	
Temperature (*C)	4	25.0	26.0	0.52	23.8	24.0	27.0	28.0	24.0	85.5	348	26.0	26.0	23.5	276.0
Test Day	0	-	2	6	4	иo	9	7	80	6	9	11	12	43	*

Organism Source: Terretional Seed Legue party Test Chamber: RODOMA OC Check: (W) Comments:

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Soil Supernatant pH (units)	initial	5.94	18.7	20	7.53	135	1.5		8
rry pH (s)	final	5.00	14.50	た。ナ	0.10	11.50	1. 2. 2.	139	
Soil Slurry pH (units)	initial	5.14	37	16,85	1.50	V		ig	66
Conc. or Sample	₽	Sii-o-Sil	SII- 053	SII- 055	511-057	511-059	511-062	SN-C63	

Nautilus Environmental, 5009 Pacific Hwy. E., Ste. 2. Tacoma, WA. 38424

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Nautilus Environmental 1900 Pacific Hwy. E., Suite 2. Tucconu, WA 98424.

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** Day 14: Include sublethal observations:

X= No germination C= Chlorosis W= Wilting

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Noutlus Environmental 2009 Psoffic Hwy. E., Saite 2, Jucona, WA 98424.		W= Willing C= Chlorosis X= No germination

Nautilus Environmental Washington Laboratory

Client: Enclopementa Partners Start Date & Time: (27/11 1430)
Species: Lactuca sativa Stop Date & Time: (21/11 1300)

Test #'s: 1100 - TDU, TOOT, T508, T509, TO10, TO11, T012

Sample ID	Cont.	Rep.	No. Seedlings Emerged	Shoot Pan Tare Wt. (g)	G 4854	Pan + Dry Shoot Wt. (g)
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	5	4		16972	341017	1,50835
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Comments:

Initial number of seeds added to each replicate = 12

Date/Time in: Date/Time out: | 22/11 | 1500 Oven Temp (°C): 107.0 | 22/11 | 1530 Oven Temp (°C): *72.0 QC: (1)

Environmental Quality Results - 14-Day Soli Nautilus Environmental

Sumple 17: 5/15/22 -3:18, W55/26 - OTICIO -7029 to Start Date/Time: 10.19 tariannented Partriers Client:

End Date/Time: (0/02/11 136) lest Species:

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o and	final	28.2			<u>5</u>			16.8			22.0			1886									and a second											
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	Sample ID	CON			SII-06			511-255			511-057			21-059																				
Tenh	Hit.	4		W.	4		j.	B	30	(3	(§	30	-13	S C	Š	And Andrews Control of State Control of			X												4	m.A	
Temn	(3C)	22.0	22.0	5.0	517	07	8	220	23.0	33.0	22.0	22.0	23.	31.9	22.0	0.22				Sublethal Observations Key:	urrowed	m surface	ether		il swelling	leers		gi'stiffening				-	Text Chamber. CNV. L. Po. J.	200
Total	Day	9	-	ri	3	+	UD	9	1-	æ	6	10	П	12	13	-				ublethal Ob	N- Normal burrowed	E= Expased/on surface	B= Balled together	D= Dead	W= Segmental swelling	L- Lesions'alcers	C= Coiling	S= Shortening/stiffening					Lest Chamber:	Christianiems commer-

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Fech initials

9 9

9 10 Nautilus Environmental Washington Laboratory 5009 Pacific Hwy. E., Suite 2 Tacoma, WA 98424

Raw Data Sheet Soil Data 14-Day Soil Toxicity Test

Client: EAMOR Sample IDs: 5/1532	nertz -3:18.V	U Par 15586-0	410, eus	Inc. 5-0810	Log-In#s:	11010 -	055	054,1	059	
Date: [0] [1] [4]	<u>ന '</u>		STAPP	DAD 190	3 Species:	E. 101	emajor	·····		
Soil Weights and Mois	ture Fracti	on (MF):								
		Pre-Test			Day 0			Day 14/	25	
Site	Initial (wet)	Final (dry)	(N)	Initial (wet)	Final (dry)	MF	Initial (wet)	Final (dry)	MF	
511-061	264	24.7	7.3	76.7	76,4	10.1	158.0	154.0	19.1	
5)1-065 SII-057	26.6	24.9	7.3	77.5	77.6 76.5	5.49	929	113.2- 33.4	16.8	
511-059	26.4	23.7	12.1	78.4	75,3	14.16	140.5	134.9	189	
14 day low				02754	66.9	51.5	124.4	111.70	38.12	
511-062	264	14.3	14.2	1030	100.2	7.76	1248	121.9	13.1 13.451.	5
511-051	26.4	20.5	30.9	93.1 105.4	% 103.3	38.7 1.17	139.2	121-9-60	12.2	0138.9
25 day con				105, <u>5</u> 92,6	(4 91, 39 84.3	1.6 46.2 49.7	105.7	118.2	50.6	\$ 68.9
et somation				70.8	62.7	47.9	105,4	963	512	
1 20 mx 1 k2				82.6	70.2 74.6	46.2	143.2	135.0	77.3	
is any				102.1	94,2	46.2	145.8	13/09	55.3	
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Tech Initials:	KS.	78	83	85	Ū+	NE	(M)	ڒڕ	75	
Date/Time in/Temp: Date/Time out/Temp:	6/7/		TD 103° 4UV 104	6/9/1) 1330 /1 1330	101	4 28	11/14m	14070	3 th

 $MF = (I-F)/[A-(I-F)]^{*}100$

MF= Moisture fraction of bulk soil (in %) i= initial wel weight of sample + pan (g) F=Final dry weight of sample + pan (g) A= Initial aliquot_weight (g))

Educ to texture of samples, matched to moisture on frictionity instead of volume

Environmental Quality Results - 28-Day Soil Bioassay Nautilus Environmental

Client: Environmental Partners	Start Date/Time:	6/11/11/19
Sample ID: SH4-W64 YFSS-DI, WSII A131 (BK9)	End Date/Time:	7/7/11 1500
Test #: 106 T033 106-T034 106-T035	Test Species:	Eisenia foetida
Nautilus Check-In #: 511-062 1511-051 511-053		

Test Day	Temp (°C)	Tech Initials
0	22.0	8
1	22.0	AF.
2	21.9	MF
3	21.9	IP
4	21.9	(B)
5	21.9	CH
6	22.0	85
7	21.8	BP
8	22.0	84
9	22.0	8
10	22.0	(4)
11	21.9	BP
12	21.9	O+
13	22.0	8
14	21.9	\d
15	22.0	IF
16	22.0	外
17	22.0	(1)
18	22:0	14
19	22.0	(m)/_
20	219	SP
21	21.3	32
22	22.0	30
23	21.8	Ü-
24	22.0	67
25	22.0	(m)
26	22.0	GP
27	22.0	M
28	22.0	785

	% Mo				Conductivit Day 0	y (uhom-cn Day 28
Site	Day 0	Day 28	Day 0	Day 28	1	Day 20
<u>ww</u>	51.5	500		7.08	529	601
511-002	7.76	13.1	8.23 6.54	750	84	43
SII-051	m / m	51.5	6.54	5.54	16	15
611-053		14.2	7.00	6.80	34	120
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Tech initials	37	\ \rangle \ran		rpe & k	Suite 2. Tacor	ma Wa boas

OA Review/Date D / 9/1/11
Test Chamber: Env. Em. A

Nautilus Environmental Washington Laboratory 5009 Pacific Hwy. E., Suite 2 Tacoma, WA 98424

Client/Project ID: Environmental Partners
Test No.: 1100-7033, 1100-7034, 1100-7035

Start Date/Time: (6/9/11/14/5) End Date/Time: 7/7/11/1500

Sample ID	Cont.	Rep. #	Initial Org. wt. (gm)	Initial No. Worms	Initial Avg. per Organism (gm)	Final Org. wt. (gm)	Final No. Worms	Initial Avg. per Organism (gm)
ion	6	1	(1414,902/4	10		3.42783	112	
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	1	3	4,42805	10		2.75244	/U	
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		5						
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		4	T.3.5 11/1					
		5						
	-	1	3,81916	10		1.86036	10	
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28-Day Soil Survival Results Nautilus Environmental

C	lient:	

Environmental Partners

Test No.:

11010-T033 to T035

Test Date:

Test Organism:

Eisenia foetida

Sample	Container #	Rep. #	Initial Number	Final Number	Sublethal Observations	Tech Initials
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Washington	Laboratory -	5009	Pacific	Hwy.	E. Suno	4.51	l acomu.	WA	A897

QA	Check:

Comments:

Sublethal Observations Key:

- N= Normal/harrawed
- E Exposed on surface
- B. Balled together
- W Segmental swelling
- L= Lesions/alcers
- C Coiling
- S= Shortening/stiffening

APPENDIX C - Reference Toxicant Test Results

Report Date:

31 Aug-11 16:14 (1 of 1)

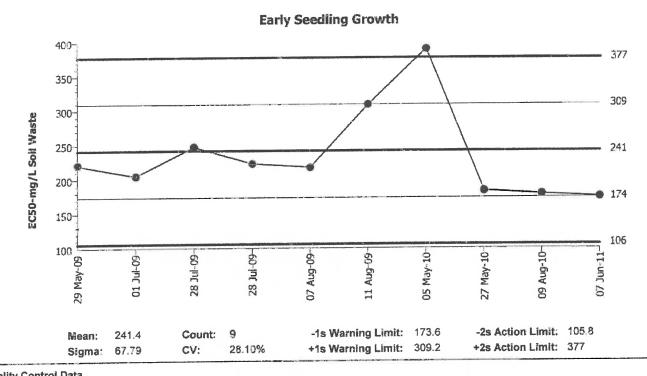
Early Seedling Growth

Test Type: Survival-Growth
Protocol: WDOE 96-324

Organism: Lactuca sativa (Lettuce)
Endpoint: Survival Rate

Nautilus Environmental WA

Material: Soil Waste
Source: Reference Toxicant-REF



Quali	ty Con	trol Data	а								
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	
1	2009		29	220.6	-20.79	-0.3067			09-0219-1410	13-2075-5309	
2		Jul	1	204.7	-36.73	-0.5418			11-7520-9930	03-2799-1846	
3			28	247.1	5.725	0.08445			11-1163-7315	08-7410-7616	
4			28	222.6	-18.81	-0.2774			18-2758-4943	00-2970-8628	
5		Aug	7	217.2	-24.18	-0.3567			15-7179-2232	06-8206-1666	
6			11	308.6	67.19	0.9912			11-5703-1897	11-2523-5381	
7	2010	Mav	5	390.1	148.7	2.194	(+)	(+)	18-1256-6303	03-7353-3083	
8	23.0		27	183	-58.44	-0.8621			07-5797-7609	02-8388-1573	
9		Aug	9	178.5	-62.87	-0.9274			12-0568-9729	00-4825-3515	
10	2011	Jun	7	174.4	-67.04	-0.9889			14-4891-1513	00-5788-6680	

Report Date:

31 Aug-11 16:14 (1 of 1)

Early Seedling Growth

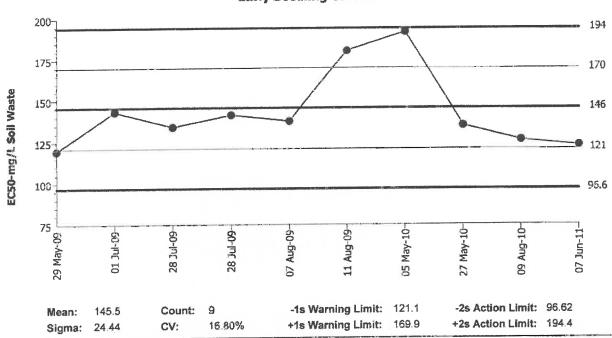
Test Type: Survival-Growth

Protocol: WDOE 96-324

Organism: Lactuca sativa (Lettuce)
Endpoint: Mean Dry Biomass-mg

Material: Soil Waste
Source: Reference Toxicant-REF

Early Seedling Growth



Qualit	y Con	trol Data	3							
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1		May	29	119.5	-25.98	-1.063	(-)		09-0219-1410	17-6385-6463
2		Jul	1	143.2	-2.338	-0.09565			11-7520-9930	03-2381-2203
3			28	134	-11.49	-0.47			11-1163-7315	02-6860-1115
4			28	141.2	-4.285	-0.1753			18-2758-4943	06-5912-1272
5		Aug	7	137.6	-7.927	-0.3244			15-7179-2232	09-0615-4224
5		,,,,,	11	180.6	35.06	1.435	(+)		11-5703-1897	06-6373-5553
7	2010	May	5	192.1	46.62	1.908	(+)		18-1256-6303	11-1099-1174
8	2010	· · · · · · ·	27	135	-10.5	-0.4295	, ,		07-5797-7609	00-1486-3034
9		Aug	9	126.2	-19.28	-0.7888			12-0568-9729	16-9445-1694
10	2011	Jun	7	123.1	-22.38	-0.9158			14-4891-1513	14-6511-7777

31 Aug-11 16:13 (p 1 of 1) Report Date: **CETIS Summary Report** RT060711LS | 14-4891-1513 **Test Code:** Nautilus Environmental WA Early Seedling Growth Meghan Feuk Test Type: Survival-Growth Analyst: Batch ID: 18-2865-3267 Not Applicable WDOE 96-324 Diluent: 07 Jun-11 14:30 Protocol: Start Date: Brine: Species: Lactuca sativa Ending Date: 21 Jun-11 13:00 Age: Territorial Seed Company Source: 13d 22h **Duration:** Reference Toxicant Test Client: Code: RT060711LS Sample ID: 02-9240-0634 Project: Soil Waste Material: Sample Date: 07 Jun-11 14:30 Receive Date: 07 Jun-11 14:30 Source: Reference Toxicant Station: Sample Age: N/A **Comparison Summary** TU Method TOEL **PMSD** LOEL Analysis ID NOEL **Endpoint** Steel Many-One Rank Test 36.9% 160 113.1 80 Mean Dry Biomass-mg 16-6058-4487 15.0% **Dunnett's Multiple Comparison Test** 80 160 113.1 13-0090-5880 Survival Rate **Point Estimate Summary** Method 95% UCL TU Level mg/kg 95% LCL Analysis ID **Endpoint** Linear Interpolation (ICPIN) 69.77 107.2 IC25 96.96 Mean Dry Biomass-mg 14-6511-7777 103 141.1 IC50 123.1 Trimmed Spearman-Kärber 156.8 193.9 EC50 174.4 00-5786-6680 Survival Rate Mean Dry Biomass-mg Summary %Effect Std Dev CV% Std Err 95% LCL 95% UCL Min Max Count Mean Conc-mg/kg Control Type 0.2003 0.448 43.68% 0.0% Background Soil 5 1.193 0.3375 1.398 1.025 0.8582 22:1% -31.13% 1.456 0.9925 1.785 0.13290.2972 1.345 1.234 5 40 1.219 0.9242 1.502 0.11 0.246 21.82% -9.93% 1.035 5 1.127 80 0.5108 0.08033 0.1796 67.15% 73.91% 0.01 0.2675 0.2004 0.3346 5 160 0.1283 0.02537 0.05672 210.1% 97.37% 0.04818 0 0.005819 5 0.027 320 0.02907 223.6% 98.73% 0.013 0.065 5 0.013 0.002146 0.02386 0 640 **Survival Rate Summary** CV% %Effect Std Dev 95% LCL 95% UCL Min Max Std Err Count Mean Conc-mg/kg Control Type 1 0.02041 0.04564 4.81% 0.0% 0.9167 Background Soil 5 0.95 0.933 0.967 0 7.71% -1.75% 0.07454 0.9667 0.9388 0.9945 0.8333 1 0.03333 5 40 3.99% 1.75% 0.9167 1 0.01667 0.03727 0.9472 5 0.9333 0.9194 80 0.2472 44.95% 42.11% 0.25 0.9167 0.1106 0.55 0.4577 0.6423 5 160 0.09129 136.9% 92.93% 0 0.1667 0.04082 5 0.06667 0.03258 0.1008 320 223.6% 98.25% 0.08333 0.01667 0.03727 5 0.01667 0.002751 0.03058 240

040		البية ا	0,012.01							
Mean Dry Bio	Mean Dry Biomass-mg Detail									
Conc-mg/kg	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	·			
0	Background Soil	1.398	1.232	0.3375	0.8133	1.347				
40		0.9925	1.169	1.393	1.786	1.383				
80		0.9242	0.9342	1.502	1.246	1.031				
160		0.3042	0.225	0.01	0.5108	0.2875				
320		0	0.006663	0	0.1283	0				
640		0	0	0	0	0.065				
						Name of the Original of the Or	1 			
Survival Rate	Detail									

Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
	1	1	0.9167	0.9167	0.9167
	1	1	1	0.8333	1
	0.9167	0.9167	0.9167	0.9167	1
	0.5833	0.4167	0.25	0.9167	0.5833
	0	0.1667	0	0.1667	0
	0	0	0	0	0.08333
	Control Type	Control Type Rep 1 Background Soil 1 1 0.9167 0.5833	Control Type Rep 1 Rep 2 Background Soil 1 1 1 1 1 0.9167 0.9167 0.9167 0.5833 0.4167 0 0 0.1667 0	Control Type Rep 1 Rep 2 Rep 3 Background Soil 1 1 0.9167 1 1 1 1 0.9167 0.9167 0.9167 0.9167 0.5833 0.4167 0.25 0 0.1667 0	Control Type Rep 1 Rep 2 Rep 3 Rep 4 Background Soil 1 1 0.9167 0.9167 1 1 1 0.8333 0.9167 0.9167 0.9167 0.9167 0.5833 0.4167 0.25 0.9167 0 0.1667 0 0.1667

14-Day Soil Toxicity Test

Client: Reference Twitcart
Sample ID: 640mg/Kg (BH3O)

Test ID: RTOGOT-IILS

lest species;	Lached sains	Lachea sama (bulet cruren lendee)
Start Date/lime:		130
End Date/Fine:	T TOTAL	200

Soil slurry pH (units) Soil supernatant pH (units)

Cone. (ppm)	Lab Confrol	40	080	091	320	019		Tech Initials					
	43.42.2								- Karanaharan				
Tech	(3)	(3)	#	A	MF.	#	B	#	do	8	43	ક	(3)
light Intensity (Lux)	2.92							7917					
Temperature (°C)	21.5	かった	27.0	25.0	2.5.K	0.4%	25.0	23.8	24,0	18.C	348	26.0	24.0
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Naudius Environmental
Washington Laboratory
S009 Pacific Hwy, E. Suite 2

Tecoma, WA 98424 (253) 922-4296 430

11/4/19 6 21/II

Start Date/Time: End Date/Time:

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(3 Analyst QC Check: Client/S Day 3

. A. seri-encomment	Test Species: Lactuca sativa (buttercrunch lettuce)	William I was a second of the second	5	aller in	12.	******	100	, i	덛	
	runc	Column	***	7	april Andre Williamsky	3	E	Hinds	***	
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Comments:

Nautilus	Envi	ron	menta	20.000

Washington Laboratory

Client: FPF Reference Toward Start Date & Time: 47/11 1430

Species: Luctuca sativa Stop Date & Time: 6/2/11 1300

Sample ID	Cont.	Rep.	No. Seedlings	Shoot Pan Tare Wt. (g)	Pan + Wet Shoot Wt. (g)	Pan + Dry Shoot Wt. (g)
Satispie IL			Emerged	1.627 685 V	195440	1. 6224052
CON	30	1	12/	+ 42 + 1 3 - 10	198134	1.60374
		2	15	1.58717	198/2/20	1.52159
	10	3		52754	1.88600 1.8307	1.53683
	23	4		71.100155	20 2000	1.56.56950
- 2-210-M MARK - M MA	20	5		1.00 107	34 1.89805 1.93367	1.510804
40	25	1	12	1.55613	190020	16874
	3	2	光	.61584	2.05 702	1.69256
	19	3	14	1200	1.93691	176086
HOLIOCO MANAGEMENT AND AND AND AND AND AND AND AND AND AND	8	4	10	172147	2.0-1103	1.78393
	210	5	12	14134	1,92514	1/0/2/07
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	4	4		154128	1.62043	1.54741
	110	5	7.4	1.52393	1.515109	1.52738
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Comments:	Initial number of seed	is added to each replicate
Date/Time in:	12/11	Oven Temp (°C):

Date/Time out:



Report Date:

29 Jun-11 14:51 (1 of 1)

Eisenia 14-d Survival Soil Test

Test Type: Survival
Protocol: WDOE 96-327

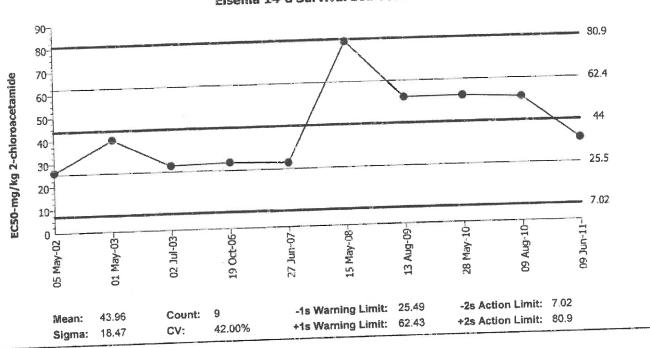
Nautilus Environmental WA

Eisenia fetida (Red worm)

Material: 2-chioroacetamide

Source: Reference Toxicant-REF

Eisenia 14-d Survival Soil Test



Qualit	y Con	trol Data	9				Managara	Action	Test ID	Analysis ID
Point	Year	Month	Day	QC Data	Delta	Sigma	Warning	ACTION	16-0112-7495	03-6581-6762
1	2002	May	5	26.17	-17.79	-0.9631			18-0678-2428	10-9716-6177
2	2003		1	39.91	-4.055	-0.2195			02-9873-1034	00-3454-9068
3		Jul	2	28.07	-15.89	-0.8602				00-0149-2749
4	2006		19	28.75	-15.21	-0.8232			02-3082-1435	13-6127-6576
5	2007	dun	27	28.01	-15.95	-0.8634			19-0311-5351	16-3060-0026
-			15	80	36.04	1.951	(+)		20-3102-3790	
6		May		55.16	11.2	0.6061			20-6120-4139	00-4183-4608
7	2009	Aug	13			0.6127			13-2033-4602	20-4300-2078
8	2010	May	28	55.28	11.32				18-7475-1619	02-4525-0355
9		Aug	9	54.28	10.32	0.5589			14-4766-0393	16-5490-4261
10	2011	Jun	9	35.82	-8.136	-0.4405			14-4,00,000	10m m 305 ft

Report Date: Test Code: 29 Jun-11 14:51 (p 1 of 1) RT060911EF | 14-4766-0393

GE / 1 G G G G G	minute y interpret							Test Code:	190171	BITEF 14	4700-0330
Eisenia 14-d S	iurvival Soil Tes	t							Nautilu	s Environn	nental WA
Batch ID: Start Date: Ending Date: Duration:	20-0867-4021 09 Jun-11 14:00 23 Jun-11 14:00 14d 0h		Test Type: Protocol: Species: Source:	Survival WDOE 96-327 Eisenia fetida Aquatic Researd	ch Organism	ns, NH		Diluent: Brine: Age:	han Feuk		
	06-4903-5718 09 Jun-11 14:00 23 Jun-11 14:00 N/A) [Code: Material: Source: Station:	RT060911EF 2-chloroacetam Reference Toxio				Client: Refe Project:	erence Toxic	eant Test	
Comparison S Analysis ID 14-8257-9163	Endpoint		NOEL 20	LOEL 40	TOEL 28 28	PMSD 6.59%	TU	Method Dunnett's	Multiple Co	mparison Te	est
Point Estimate Analysis ID 16-5490-4261	Endpoint		Level EC50	mg/kg 35.82	95% LCL 31.38	95% UCL 40.89	TU	Method Trimmed :	Spearman-l	(ärber	
Survival Rate	Summary	Coun	. Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0 10 20 40 80	Control Type Control Sed	3 3 3 3 3	1 0,933 1 0,366	1 3 0.9118 1	1 0.9549 1 0.3882 0	1 0.9 1 0.3	1 1 1 0.4 0	0 0.03333 0 0.03333 0	0 0.05774 0 0.05774 0	0.0% 6.19% 0.0% 15.75%	0.0% 6.67% 0.0% 63.33% 100.0%
Survival Rate	Detail										
Conc-mg/kg 0 10 20 40 80	Control Sed	Rep 1 1 1 1 0.4 0	Rep 2 1 0.9 1 0.3 0	2 Rep 3 1 0.9 1 0.4 0							

Environmental Quality Results - 14-Day Soil Nautilus Environmental

80 ug/L 2-Chloroacetamide Reference Toxicant Sample ID: Client: Test #:

Krowing

(0/9/111 14VD	10/03/11 14/00	Eisenia joenda
Start Date/Time:	End Date/Time:	Test Species:

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Survival

Conductivity (uhom-cm) 0

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Washington Laboratory - 5009 Pacific Hwy. F., Suite 2. Incoma, WA 98424 Test Chamber: Road

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Or Review/Date(II) 10/20/11

APPENDIX D - Chain-of-Custody Forms

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TESTING LOCATION (Please Check Box)

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Mighway East, Suite 2

☐ British Columbia

Date 6/3/11 Page 1 of 1 AMAI YSES REQUIRED 8664 Commerce Court Burnaby, British Columbia, Canada VSA 4N3 Phone 694-420 8773 Fax 604,357,1361 Tacona, WA 98424 Phone 253,922,4296 Fax 253,922,5814 5550 Morehouse Drive, San Diego, CA 92121 Phone 858,587,7333 Fax 838,587,3961 California NAUTILUS EMDIYONIMENTAL

Report to: Company Exures Address 245	A CONTRACTOR OF THE CONTRACTOR									
~				Invoice To:	•		<i></i>			., m. n. — ##
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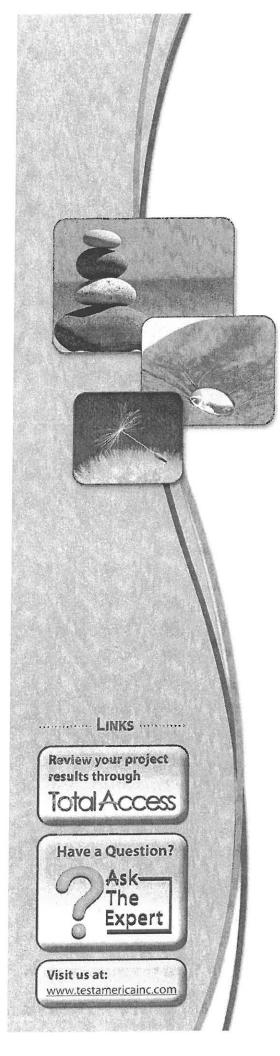
Table 1
Summary of Soil Sample Analytical Results for
Diesel and Oil Range Total Petroleum Hydrocarbons (in mg/kg)
Remedial Action Excavation
Seattle, WA

Sample ID	Sample Depth	Final Performance	Diesel-	Oll-Range						
oampia io	(feet bgs)	Sample	Range TPH ^{e)}	TPH®						
P-B-1:13' P-B-1:16'	13	No Yes	7,800 <50	310 <250						
P-8-10:16	16	No	<50	<250						
.P-8-11:16"	16	Yes No	<50 3,800	<250 <250						
P-B-15:20' P-B-22:13.5'	13.5	Yes	140	<250						
P-B-23:13.5	13.5	Yes	<50	<250						
P-B-24:12.5	12.5	Yes Yes	<50 <50	<250 <250						
P-B-3;13' P-B-31;14'	14	Yes	2,000	<250						
LP-B-31:15.5	15.5	Yes	690	<250						
LP-B-32:14"	14 21	No Yes	2.290 <50	<250 <250						
P-B-32:21' P-B-34:12'	12	Yes	470	<250						
LP-B-35:16	16	Yes	<50	<250						
LP-B-36:16' LP-B-37:14'	16	Yes	<50 <50	<250 <250						
LP-B-37:14 LP-B-43:13	13		<50	<250						
.P-B-45:14	14	Yes	<50	<250						
LP-B-46:14	14	No	<50	<250 <250						
LP-B-50:15 LP-B-50:17	17	Yes	<50	<250						
LP-B-53:15	15	Yes	<50	<250 <250						
LP-B-54:15	15	Yes	<50 1,700	<250						
LP-8-55:17 LP-8-56:15	15	Yes	<50	<250						
LP-B-61:13	13	Yes	<50	<250						
LP-B-62:13	13	Yes Yes	1,900 <50	<250 <250						
LP-B-63:12.5 LP-B-65:13	13	Yes	1.700	<250						
LP-B-66:13'	13	Yes	<50	<250						
DLP-8-66:13'	13	Yes	<50 <50	<250						
LP-3-97:12.5' LP-B-67:12.5'	12.5	Yes	1,400	<250						
LP-B-68:13.5'	13.5	Yes	<50	<250						
LP-B-70:15	15 23.5	No No	3,500	<250 <250						
LP-B-70:23.5' LP-B-75:24	24	Yes	<50	<250						
LP-B-76:24	24	Yes	<50	<250						
LP-B-8:13"	13	Yes	<50 <50	<250 <250						
LP-B-80;12.5 DLP-B-80;12.5	12.5	Yes	<50	<250						
LP-B-81:25	25	Yes	<50	<250 <250						
LP-B-83:14 LP-B-85:29	14 29	Yes	<50 <50	<250						
DLP-8-85:29	29	Yes	<50	<250						
LP-B-9:13'	13	Yes	<50	<250 <250						
LP-B:82:17	17	Yes	<50 6,200	<250						
LP-ESW-2:10' LP-ESW-42:11	11	Yes	<50	<250						
LP-ESW-47:12.5'	12.5	Yes	<50	<250						
LP-ESW-69:11'	8.5	Yes Yes	9:200 <50	<250 <250						
LP-ESW-69;8.5' LP-ESW-71:13'	13	Yes	2.400	<250						
LP-ESW-72:10'	10	Yes	7,809	<250						
LP-ESW-73:11.5' LP-ESW-73:18'	11.5	Yes	1,400	<250 <250						
LP-ESW-73:16 LP-ESW-73:9'	9	Yes	12,800	370						
LP-ESW-74:14	14	Yes	6,600 4,300	<250 <250						
LP-ESW-74:22 LP-ESW-74:9'	9	Yes	<50	<250						
LP-ESW-74:9' LP-NSW-18:10'	10	Yes	<50	<250						
LP-NSW-17:11'	11	Yes	<50	<250 <250						
LP-NSW-18;11.5	11.5	Yes	<50 <50	<250						
LP-NSW-30:10' LP-NSW-4:11'	11	No	7,700	360						
LP-NSW-4R-11'	11	Yes	<50	<250						
LP-NSW-7:10.5	10.5	Na Yes	8,600 230	370 <250						
LP-NSW-7R:10.5 LP-S-35:8.5	8.5	1	610	<250						
LP-SSW-29:11'	11	No	12,000	<250						
LP-SSW-30:11' LP-SSW-37:12'	11	Yes No	13,400	<250 360						
LP-SSW-37:12 LP-SSW-38:13	13	No	5,600	<250						
LP-SSW-40:14	14	No	7.200	<250 280						
LP-SSW-40:19 LP-SSW-40:25	19 25	No Yes	12.000 720	<250						
LP-SSW-40:9	9	Yes	<50	<250						
LP-SSW-40R:14'	14	Yes	3,400	<250 <250						
LP-SSW-40R:19'	19	Yes	<50 3,400	<250 <250						
LP-SSW-44:11 LP-SSW-44:13	13	Yes	680	<250						
LP-SSW-44:9.5	9.5	Yes	<50	<250 <250						
LP-SSW-44R:11'	11	Yes	4,900 670	<250						
LP-SSW-48:14 LP-SSW-49:14	14	Yes	6,300	<250						
LP-SSW-49:19"	19	Yes	1,400	<250 <250						
LP-SWS-13:12' LP-SWS-14:11'	12	Yes	<50 <50	<250 <250						
LP-WSW-19:12	12	Yes	<50	<250						
LP-WSW-20:10.5	10.5	Yes	2.000	<250 430						
LP-WSW-21:11' LP-WSW-21R:11'	11	No Yes	17,000 <50	<250						
LP-WSW-39:11'	11	No	2,900	<250						
LP-WSW-39R:11'	11	Yes	<50	<250 380						
LP-WSW-5:11'	11	No Yes	8,000	<250						
LP-WSW-5R:11' LP-WSW-51:12'	12	No	10,000	<250						
LP-WSW-51:15"	15	Yes	<50 <50	<250 <250						
LP-WSW-51:9.5	9.5	Yes	<50 1,500	<250 <250						
LP-WSW-51RR-12 LP-WSW-52:12'	12	No	2 300	<250						
LP-WSW-52:9.5"	9,5	Yes	430	<250						
LP-WSW-57:11.5	11.5	Yes	<50 <50	<250 <250						
LP-WSW-58:10' LP-WSW-59:11'	11	Yes	<50	<250						
LP-WSW-6:11.5'	11.5	No	7,200	350 <250						
LP-WSW-6R:11.5	11.5	No Yes	2,600							
LP-WSW-6RR:11.5 LP-WSW-60:12	11.5	Yes	<50	<250						
LP-WSW-6RR:11.5' 11.5 Yes <50 <250										

B-64:12.57

Note:

(a) Analyzed for dissel-awage total personation hydrocations (DRPH) using Ecology Method NMTPH-Dx (b) Analyzed for dissels awage total personations (DRPH) using Ecology Method NMTPH-Dx (b) Analyzed for all range total personations (DRPH) using Ecology Method NMTPH-Dx (b) a boson of asceretion 60 awage for the control of the con



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc. TestAmerica Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

TestAmerica Job ID: 580-28213-1 Client Project/Site: EPI-As

For: Nautilus Environmental 5009 Pacific Hwy. East

Tacoma, Washington 98424

Attn: Cat Curran

Suite 2

Knistine D. allen

Authorized for release by: 09/02/2011 02:20:11 PM

Kristine Allen Project Manager I

kristine.allen@testamericainc.com

Designee for

Melissa Armstrong
Project Manager I
melissa.armstrong@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica Job ID: 580-28213-1

Client: Nautilus Environmental Project/Site: EPI-As

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	8
Chronicle	9
Certification Summary	10
Sample Summary	11
Chain of Custody	12
Receipt Checklists	13

Case Narrative

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Job ID: 580-28213-1

Laboratory: TestAmerica Seattle

Narrative

Receipt

The following samples were received at the laboratory outside the required temperature criteria: Control (580-28213-1), SMSS-0810 (580-28213-3), SMSS-BG (580-28213-2) at 6.8c.

Sample collection dates and times were not recorded on the sample containers. The samples were logged-in and labeled according to the sample dates and times reported on the Chain of Custody (COC).

Metals

No analytical or quality issues were noted.

Definitions/Glossary

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

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Abbreviation	These commonly used abbreviations may or may not be present in this report.
 	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Client Sample ID: Control Date Collected: 08/22/11 10:00 Date Received: 08/23/11 15:25

Lab Sample ID: 580-28213-1

Matrix: Tissue

5

 Method: 6010B - Metals (ICP)									D2 F
 Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		3.0		mg/Kg		09/01/11 14:39	09/01/11 23:57	1

Client Sample Results

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Lab Sample ID: 580-28213-2 Client Sample ID: SMSS-BG

Date Collected: 08/22/11 10:00 Date Received: 08/23/11 15:25

Matrix: Tissue

5

Method: 6010B - Metals (ICP) Dil Fac RL MDL Unit Prepared Analyzed Analyte Result Qualifier 09/01/11 14:39 09/02/11 00:04 2.3 ND mg/Kg Arsenic

Client Sample Results

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Lab Sample ID: 580-28213-3

Matrix: Tissue

Client Sample ID: SMSS-0810

Date Collected: 08/22/11 10:90 Date Received: 08/23/11 15:25

 Method: 6010B - Metals (ICP)
 Result
 Qualifier
 RL
 MDL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Arsenic
 ND
 2.1
 mg/Kg
 09/01/11 14:39
 09/02/11 00:11
 1

5

Client: Nautilus Environmental

Project/Site: EPI-As

Method: 6010B - Metals (ICP)			pars								
Lab Sample ID: MB 580-94336/4-A									Client Sa	ample ID: M	ethod Blanl
Matrix: Tissue										Prep Ty	pe: Total/NA
Analysis Batch: 94381										Prep E	Batch: 94336
Allalyolo Batolii e teet	MB	MB									
Analyte	Result	Qualifier		RL	N	IDL Unit	1) Pr	epared	Analyzed	
Arsenic	ND			3.0		mg/Kg		09/01	1/11 14:39	09/01/11 23	:38 1
Lab Sample ID: LCS 580-94336/5-A								Client	Sample	ID: Lab Con	itroi Sample
Matrix: Tissue										Prep Typ	oe: Total/NA
Analysis Batch: 94381										Prep B	atch: 94336
,,			Spike		LCS	LCS				% Rec.	
Analyte			Added		Result	Qualifier	Unit	D	% Rec	Limits	
Arsenic			200		190		mg/Kg		95	80 - 120	
Lab Sample ID: LCSD 580-94336/6-A							Clier	nt Sam	ple ID: La	ab Control S	Sample Dup
Matrix: Tissue										Prep Typ	e: Total/NA
Analysis Batch: 94381										Prep B	atch: 94336
			Spike		LCSD	LCSD				% Rec.	RPD
Analyte			Added		Result	Qualifier	Unit	<u>D</u>	% Rec	Limits	RPD Limit
Arsenic			200		190		mg/Kg		95	80 _ 120	0 20

Lab Chronicle

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Lab Sample ID: 580-28213-1

Matrix: Tissue

Client Sample ID: Control

Date Collected: 08/22/11 10:00 Date Received: 08/23/11 15:25

ĺ		Batch	Batch		Dilution	Batch	Prepared		
-	Prep Type	Type	Method	Run	Factor	Number	Or Analyzed	Analyst	Lab
	Total/NA	Prep	30 50 B			94336	09/01/11 14:39	PAB	TAL SEA
	Total/NA	Analysis	6010B		1	94381	09/01/11 23:57	SP	TAL SEA

Client Sample ID: SMSS-BG

Date Collected: 08/22/11 10:00 Date Received: 08/23/11 15:25 Lab Sample ID: 580-28213-2

Matrix: Tissue

9000000		Batch	Batch		Dilution	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Number	Or Analyzed	Analyst	Lab
i	Total/NA	Prep	3050B			94336	09/01/11 14:39	PAB	TAL SEA
-	Total/NA	Analysis	6010B		1	94381	09/02/11 00:04	SP	TAL SEA

Client Sample ID: SMSS-0810

Date Collected: 08/22/11 10:00 Date Received: 08/23/11 15:25 Lab Sample ID: 580-28213-3

Matrix: Tissue

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	Or Analyzed	Analyst	Lab
Total/NA	 Prep	3050B			94336	09/01/11 14:39	PAB	TAL SEA
Total/NA	Analysis	6010B		1	94381	09/02/11 00:11	SP	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

8

Client: Nautilus Environmental

Project/Site: EPI-As

Laboratory	Authority	Program	EPA Region	Certification ID	
TestAmerica Seattle	Ala ska	Alaska UST	10	UST-022	
TestAmerica Seattle	Alaska	TA-Port Heiden Mobile Lab	10	UST-093	
TestAmerica Seattle	California	NELAC	9	1115CA	
TestAmerica Seattle	Florida	NELAC	4	E871074	
TestAmerica Seattle	L-A-B	DoD ELAP		L2236	
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236	
TestAmerica Seattle	Louisiana	NELAC	6	05016	
TestAmerica Seattle	Montana	MT DEQ UST	8	N/A	
TestAmerica Seattle	Oregon	NELAC	10	WA100007	
TestAmerica Seattle	USDA	USDA		P330-11-00222	
TestAmerica Seattle	Washington	State Program	10	C553	

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Summary

Client: Nautilus Environmental

Project/Site: EPI-As

TestAmerica Job ID: 580-28213-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-28213-1	Control	Tissue	08/22/11 10:00	08/23/11 15:25
580-28213-2	SMSS-BG	Tissue	08/22/11 10:00	08/23/11 15:25
580-28213-3	SMSS-0810	Tissue	08/22/11 10:00	08/23/11 15:25

AMERICA IN ENVIRONMENTAL TESTING PACIFIC HUM State		TestAmerica Seattle 5755 8th Street E. Tacoma, WA 98424 Tel. 253-922-2310 Fax 253-922-5047 www.testamericainc.com Client Contact CONT CONTACT Telephone Number (Area Code)/Fax Number 253-922-92 Sampler Lab Contact	nc.com OUV Y G22	Fax Number 429 6	Rush	Short Hold Short Hold Short Hold Short Hold Short Hold Pate 8-23-11 Lab Number Lab Number Analysis (Attach list if	55	Chain of Custody Number 12259
WA	48424 198424	Sampler S D	Mansour 1	Mellssa f	2	Analysis (Attach list if more space is needed)		
Contract/Purchase Order/Quote No. Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	5-4 S	Soil Vinpres.	H2SO4 HNO3 Preservatives AACH NAOH ZnAcr NAOH	Arsenic			Special Instructions/ Conditions of Receipt
CONTRO 8		IDam	/ X					
5 4		LOAM	× ×		X			
V 100 100 100 100 100 100 100 100 100 10	N-77-18	Dam	×		×			
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								8-0/0,0=1
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								MID CS
	Possible Hazard Identification Non-Hazard	nable Skin Irritant	ant 🗆 Poison B	□ Unknown	Sample Disposal Return To Client	☐ Disposal By Lab☐ Archive For	Months	(A fee may be assessed if samples are retained longer than I month)
1 Delice 10 Days 10	□ 15 Days	Other		C Requirements (Sp	ecify)			
2. Relinquished By SigniPrini 2. Relinquished By SigniPrini	ran	Date Date	lime 1525	1. Received By Sign/Print 2. Received By Sign/Print	TOO H	Kolleb	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Date 23 1 Time
3. Relinquished By Sign/Prim Comments		Date	Time	3. Received By Sign/Print	Print			Date Time
CAMMINITE								

Login Sample Receipt Checklist

Client: Nautilus Environmental

Job Number: 580-28213-1

List Source: TestAmerica Seattle

Login Number: 28213

List Number: 1

Creator: Kalicki, Samantha Comment

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	Refer to Job Narrative for details.
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	Not needed on tissue.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	No VOA rec'd.
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Attachmen	t E

Cleanup Levels for Potential TEE Receptors Northwest Pipeline GP, Washington State Meter Station Facilities Northwest Washington Representation Area ARSENIC

Cleanup Level for Avian Predator (Robin) Equation in Table 749-4

Soil CUL =	(FIR robin X Psb robin	T robin (FIR robin X Psb robin X BAF worm) + (SIR robin X RGAF robin)	sAF robin)
CUL	Units		
58	mg/kg		
Variable	Unit		Value
Psb robin	Unitless		0.52
FIR robin	kg dry food / kg body weight - day	ght - day	0.207
SIR robin	kg dry soil / kg body weight - day	ht - day	0.0215
RGAF robin	Unitless (Table 749-5)		1
T robin	mg/kg - day (Table 749-5 footnote a)	footnote a)	2.24
Home Range	Acres		0.6
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	(Table 749-5 footnote a)	0.16

Proportion of contaminated food in diet

Notes: Psb FIR SIR RGAF T

Food ingestion rate Soil ingestion rate Gut Absorbsion Factor Toxicity Reference Value from Ecological Screening Levels for Arsenic, US EPA, March 2005 Site Specific Bioaccumulation Factor

Cleanup Level for Mammalian Predator (Shrew) Equation in Table 749-4

Soil CUL =	T shrew (FIR shrew X Psb shrew X BAF worm) + (SIR shrew X RGAF shrew)	RGAF shrew)
CUL	Units	
47	mg/kg	
Variable	Unit	Value
T shrew	mg/kg - day	1.89
FIR shrew	kg dry food / kg body weight - day	0.45
Psb shrew	unitless	0.5
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	0.16
SIR shrew	kg dry soil / kg body weight - day	0.0045
RGAF shrew	Unitless (chemical specific-As)	1

Notes: T FIR P BAF SIR RGAF BAF Soil ingestion rate
Gut Absorbsion Factor
Site Specific Bioaccumulation Factor Toxicity Reference Value
Food ingestion rate
Proportion of contaminated food in diet
Bioaccumulation factor

Cleanup Level for Mammalian Herbivore (Vole) Equation in Table 749-4

Seil Cli		Тvole	
000	(FIR vole X P plant,	(FIR vole X P plant, vole X K plant) + (SIR vole X RGAF vole)	F vole)
CUL	Units		
43	mg/kg		
Variable	Unit		Value
T vole	mg/kg - day		1.15
FIR vole	kg dry food / kg body weight - day	ght - day	0.315
P plant, vole	unitless		1
K plant	mg/kg worm / mg/kg soil		0.06
SIR vole	kg dry soil / kg body weight - day	ht - day	0.0079
RGAF vole	Unitless (chemical specific-As)	-As)	1

Notes: T FIR P K SIR RGAF

Toxicity Reference Value Food ingestion rate

Proportion of contaminated food in diet

Plant uptake coefficient Soil ingestion rate Gut Absorbsion Factor

TEE Book Value CUL Protective of Plants Table 749-3

10	CUL	Table 749-3
ma/ka	Units	

TEE Book Value CUL Protective of Soil Biota Table 749-3

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Cleanup Levels for Potential TEE Receptors Northwest Pipeline GP, Washington State Meter Station Facilities Southwest Washington/Columbia River Representation Area ARSENIC

Cleanup Level for Avian Predator (Robin) Equation in Table 749-4

Soil CUL =	(FIR robin X Psb robin	T robin (FIR robin X Psb robin X BAF worm) + (SIR robin X RGAF robin)	3AF robin)
CUL	Units		
45	mg/kg		
Variable	Unit		Value
Psb robin	Unitless		0.52
FIR robin	kg dry food / kg body weight - day	ght - day	0.207
SIR robin	kg dry soil / kg body weight - day	ht - day	0.0215
RGAF robin	Unitless (Table 749-5)		ь
T robin	mg/kg - day (Table 749-5 footnote a)	footnote a)	2.24
Home Range	Acres		0.6
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	(Table 749-5 footnote a)	0.26

Notes: PSb FIR SIR SIR RGAF T

Proportion of contaminated food in diet Food ingestion rate Soil ingestion rate Soil ingestion Factor Gut Absorbsion Factor Toxicity Reference Value from Ecological Screening Levels for Arsenic, US EPA, March 2005 Site Specific Bioaccumulation Factor

Cleanup Level for Mammalian Herbivore (Vole) Equation in Table 749-4

2	Tvole	
0	(FIR vole X P plant, vole X K plant) + (SIR vole X RGAF vole)	AF vole)
CUL	Units	
43	mg/kg	
Variable	Unit	Value
T vole	mg/kg - day	1.15
FIR vole	kg dry food / kg body weight - day	0.315
P plant, vole	unitless	<u>_</u>
K plant	mg/kg worm / mg/kg soil	0.06
SIR vole	kg dry soil / kg body weight - day	0.0079
RGAF vole	Unitless (chemical specific-As)	1

Notes: T FIR P K SIR RGAF

Toxicity Reference Value Food ingestion rate Proportion of contaminated food in diet Plant uptake coefficient Soil ingestion rate

Gut Absorbsion Factor

Cleanup Level for Mammalian Predator (Shrew)
Equation in Table 749-4

:	7	「shrew
SOII CUL =	(FIR shrew X Psb shrew X BAF	(FIR shrew X Psb shrew X BAF worm) + (SIR shrew X RGAF shrew)
CUL	Units	
30	mg/kg	
Variable	Unit	Value
T shrew	mg/kg - day	1.89
FIR shrew	kg dry food / kg body weight - day	0.45
Psb shrew	unitless	0.5
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	49-5 footnote a) 0.26
SIR shrew	kg dry soil / kg body weight - day	0.0045
RGAF shrew	Unitless (chemical specific-As)	1

Food ingestion rate Proportion of contaminated food in diet Bioaccumulation factor Toxicity Reference Value

Notes: T FIR P BAF SIR RGAF BAF

Soil ingestion rate
Gut Absorbsion Factor
Site Specific Bioaccumulation Factor

TEE Book Value CUL Protective of Plants

		il
10	CUL	Table 749-3
mg/kg	Units	

TEE Book Value CUL Protective of Soil Biota Table 749-3

6 5 mg/kg Units

Cleanup Levels for Potential TEE Receptors Northwest Pipeline GP, Washington State Meter Station Facilities Central Washington Representation Area

Cleanup Level for Avian Predator (Robin) Equation in Table 749-4

Soil CUL =	(FIR robin X Psb robin X	T robin (FIR robin X Psb robin X BAF worm) + (SIR robin X RGAF robin)	AF robin)
CUL	Units		
29	mg/kg		
Variable	Unit		Value
Psb robin	Unitless		0.52
FIR robin	kg dry food / kg body weight - day	t - day	0.207
SIR robin	kg dry soil / kg body weight - day	- day	0.0215
RGAF robin	Unitless (Table 749-5)		1
T robin	mg/kg - day (Table 749-5 footnote a)	otnote a)	2.24
Home Range	Acres		0.6
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	able 749-5 footnote a)	0.53

Psb shrew

unitless

kg dry food / kg body weight - day

SIR shrew BAF worm FIR shrew

Unitless (chemical specific-As)

kg dry soil / kg body weight - day

0.0045

0.45 0.53 0.5

mg/kg worm / mg/kg soil (Table 749-5 footnote a)

Proportion of contaminated food in diet Food ingestion rate	FIR	Psb	Notes:
	Food indestion rate	Proportion of contaminated food in diet	

Soil ingestion rate
Sut Absorbsion Factor
Toxicity Reference Value from Ecological Screening Levels for Arsenic, US EPA, March 2005
Site Specific Bloaccumulation Factor

SIR RGAF T BAF

Cleanup Level for Mammalian Herbivore (Vole) Equation in Table 749-4

Soil CUL =	T vole T vole (FIR vole X P plant, vole X K plant) + (SIR vole X RGAF vole)	AF vole)
CUL	Units	
43	mg/kg	
Variable	Unit	Value
T vole	mg/kg - day	1.15
FIR vole	kg dry food / kg body weight - day	0.315
P plant, vole	unitless	1
K plant	mg/kg worm / mg/kg soil	0.06
SIR vole	kg dry soil / kg body weight - day	0.0079
RGAF vole	Unitless (chemical specific-As)	1

Toxicity Reference Value

Food ingestion rate Proportion of contaminated food in diet

Notes:
T
FIR
P
K
SIR
RGAF Plant uptake coefficient Soil ingestion rate Gut Absorbsion Factor

Cleanup Level for Mammalian Predator (Shrew)
Equation in Table 749-4

T shrew Variable Soil CUL = mg/kg - day (Table 749-5) T shrew (SIR shrew X Psb shrew X BAF worm) + (SIR shrew X RGAF shrew) mg/kg 1.89 Value

Toxicity Reference Value Food ingestion rate Proportion of contaminated food in diet Bioaccumulation factor

FIR P BAF SIR RGAF BAF Soil ingestion rate

Gut Absorbsion Factor
Site Specific Bioaccumulation Factor

TEE Book Value CUL Protective of Plants

_	_	-
10	CUL	Table 749-3
ma/ka	Units	

TEE Book Value CUL Protective of Soil Biota

0.9	CUL	Table 749-3
ma/ka	Units	

Cleanup Levels for Potential TEE Receptors Northwest Pipeline GP, Washington State Meter Station Facilities Eastern Washington Representation Area ARSENIC

Cleanup Level for Avian Predator (Robin) Equation in Table 749-4

Soil CUL =	(FIR robin X Psb robin	T robin (FIR robin X Psb robin X BAF worm) + (SIR robin X RGAF robin)	3AF robin)
CUL	Units		
63	mg/kg		
Variable	Unit		Value
Psb robin	Unitless		0.52
FIR robin	kg dry food / kg body weight - day	ght - day	0.207
SIR robin	kg dry soil / kg body weight - day	ht - day	0.0215
RGAF robin	Unitless (Table 749-5)		1
T robin	mg/kg - day (Table 749-5 footnote a)	footnote a)	2.24
Home Range	Acres		0.6
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	(Table 749-5 footnote a)	0.13

Notes: Psb FIR SIR RGAF T Proportion of contaminated food in diet Food ingestion rate Soil ingestion rate Gut Absorbsion Factor

Toxicity Reference Value from Ecological Screening Levels for Arsenic, US EPA, March 2005 Site Specific Bioaccumulation Factor

Cleanup Level for Mammalian Predator (Shrew) Equation in Table 749-4

	T shrew	
SOII CUL =	(FIR shrew X Psb shrew X BAF worm) + (SIR shrew X RGAF shrew)	(GAF shrew)
CUL	Units	
56	mg/kg	
Variable	Unit	Value
Shrew	mg/kg - day (Table 749-5)	1.89
FIR shrew	kg dry food / kg body weight - day	0.45
Psb shrew	unitless	0.5
BAF worm	mg/kg worm / mg/kg soil (Table 749-5 footnote a)	0.13
SIR shrew	kg dry soil / kg body weight - day	0.0045
RGAF shrew	Unitless (chemical specific-As)	ш

Notes: T FIR P BAF SIR RGAF BAF

Toxicity Reference Value Food ingestion rate Proportion of contaminated food in diet Bioaccumulation factor

Soil ingestion rate

Gut Absorbsion Factor Site Specific Bioaccumulation Factor

TEE Book Value CUL Protective of Plants

Table 749-3 10 CUL mg/kg

TEE Book Value CUL Protective of Soil Biota

Table 749-3

6 5 Units mg/kg

Cleanup Level for Mammalian Herbivore (Vole) Equation in Table 749-4

Soil CUL =	T vole T vole (FIR vole X P plant, vole X K plant) + (SIR vole X RGAF vole)	₹F vole}
CUL	Units	
43	mg/kg	
Variable	Unit	Value
T vole	mg/kg - day	1.15
FIR vole	kg dry food / kg body weight - day	0.315
P plant, vole	unitless	1
K plant	mg/kg worm / mg/kg soil	0.06
SIR vole	kg dry soil / kg body weight - day	0.0079
RGAF vole	Unitless (chemical specific-As)	Þ

Toxicity Reference Value

Food ingestion rate
Proportion of contaminated food in diet
Plant uptake coefficient

Notes: T FIR P K SIR RGAF

Gut Absorbsion Factor Soil ingestion rate

ATTACHMENT B

SITE ASSESSMENT LABORATORY ANALYTICAL REPORTS







12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Wednesday November 01, 2006

Report Number: L266028
Samples Received: 10/20/06

Client Project:

Description: WAHG

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-01

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-0910:0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:08

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	87.8		87.8		8	2540G	10/27/06
Mercury	0.049	0.020	0.055	0.023	mg/kg	7471	10/25/06
Arsenic	17.	2.0	19.	2.3	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-02

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Project # :

Sample ID : BLSS-0910:12

Collected By : Clint Moseley Collection Date : 10/17/06 10:40

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	91.2		91.2		8	2540G	10/27/06
Mercury	0.028	0.020	0.031	0.022	mg/kg	7471	10/25/06
Arsenic	7.1	1.0	7.7	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-03

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-0910:12.5 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 10:41

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	88.3		88.3		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.023	mg/kg	7471	10/25/06
Arsenic	7.8	1.0	8.8	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-04

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-0911:0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:10

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	87.7		87.7		૪	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.023	mg/kg	7471	10/25/06
Arsenic	16.	2.0	18.	2.3	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-05

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-0911:12 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 10:50

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.2		96.2		૪	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.021	mg/kg	7471	10/25/06
Arsenic	7.9	1.0	8.2	1.0	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-06

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-0911:12.5

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 10:51

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	92.1		92.1		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	7.9	1.0	8.6	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-07

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

: BLSS-1009:0 Sample ID

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:16

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	92.2		92.2		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	24.	2.0	26.	2.2	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-08

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1009:12

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 11:20

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	89.8		89.8		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	8.0	1.0	8.9	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

Project # :

ESC Sample # : L266028-09

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1009:22

Collected By : Clint Moseley Collection Date : 10/17/06 11:30

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	91.5		91.5		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	8.0	1.0	8.8	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-10

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1010:0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:18

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.6		95.6		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.021	mg/kg	7471	10/25/06
Arsenic	14.	2.0	15.	2.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-11

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1010:22

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 11:40

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	90.4		90.4		8	2540G	10/27/06
Mercury	0.048	0.020	0.053	0.022	mg/kg	7471	10/25/06
Arsenic	6.3	1.0	7.0	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-12

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1011:0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:20

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.8		98.8		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	10/25/06
Arsenic	BDL	2.0	BDL	2.0	mg/kg	6010B	10/31/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-13

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1011:0.5 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:21

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.3		98.3		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	10/25/06
Arsenic	BDL	2.0	BDL	2.0	mg/kg	6010B	10/31/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-14

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1011:12

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 11:50

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.4		98.4		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-15

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1011:22 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 12:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	79.5		79.5		%	2540G	10/27/06
Mercury	0.026	0.020	0.032	0.025	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-16

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1109:0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:26

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.6		97.6		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	10/25/06
Arsenic	21.	2.0	22.	2.0	mg/kg	6010B	10/31/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-17

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1109:12

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 12:30

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	86.5		86.5		%	2540G	10/27/06
Mercury	0.052	0.020	0.060	0.023	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-18

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1110:0 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:28

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.9		96.9		8	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.021	mg/kg	7471	10/25/06
Arsenic	18.	2.0	19.	2.1	mg/kg	6010B	10/31/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-19

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1110:0.5 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:29

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	86.8		86.8		8	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.023	mg/kg	7471	10/25/06
Arsenic	22.	5.0	25.	5.8	mg/kg	6010B	10/31/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-20

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

: BLSS-1110:12 Sample ID

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 12:40

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.5		96.5		%	2540G	10/27/06
Mercury	0.024	0.020	0.025	0.021	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	10/30/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-21

Date Received : October 20, 2006 Description : WAHG

: BLSS-1010:0.5

Site ID : BELLINGHAM 1

Project # :

Sample ID

Collected By : Clint Moseley Collection Date : 10/17/06 09:19

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	90.5		90.5		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	3.3	2.0	3.7	2.2	mg/kg	6010B	10/31/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-22

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-BL-RA-1:0 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:40

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.4		97.4		8	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	10/25/06
Arsenic	7.2	5.0	7.4	5.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-23

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-BL-RA-1:22

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 13:40

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	93.6		93.6		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.021	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.1	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-24

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-BL-RA-3:0 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:42

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	91.3		91.3		%	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.022	mg/kg	7471	10/25/06
Arsenic	2.5	2.0	2.7	2.2	mg/kg	6010B	10/31/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 01,2006

ESC Sample # : L266028-25

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-BL-RA-3:22 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 14:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.6		94.6		8	2540G	10/27/06
Mercury	BDL	0.020	BDL	0.021	mg/kg	7471	10/25/06
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	10/30/06

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L266028-12 L266028-13	Arsenic Arsenic	0

Attachment B Explanation of QC Qualifier Codes

Qualifier 	Meaning									
O (ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.										
	Qualifier Report Information									
as required by ESC, we have results. Each Data qualifies the potential matrices incoestablished r	sample and result qualifiers as set forth by the EPA Contract Laboratory Program and by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted we implemented ESC qualifiers to provide more information pertaining to our analytical the qualifier is designated in the qualifier explanation as either EPA or ESC. are intended to provide the ESC client with more detailed information concerning this of reported data. Because of the wide range of constituents and variety of exporated by most EPA methods, it is common for some compounds to fall outside of ranges. These exceptions are evaluated and all reported data is valid and useable fied as 'R' (Rejected).									
tr re	Definitions The relationship of the observed value of a known sample to the successful to the successful to the successful to the successful to the successful to the successful to samples such as: control samples, matrix spike recoveries, arrogate recoveries, etc.									

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (

Precision - The agreement between a set of samples or between duplicate samples.

2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125 Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118 2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

Relates to how close together the results are and is represented by Relative Percent Differrence.

 Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 11/01/06 at 11:32:12

TSR Signing Reports: 690 R5 - Desired TAT

```
Sample: L266028-01 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD - Refer to P191217 / MISC = Hold Samples
Sample: L266028-02 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-03 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-04 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-05 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-06 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-07 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
       L266028-08 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
Sample:
QC2MOD
Sample: L266028-09 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-10 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-11 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-12 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-13 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-14 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-15 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample:
       L266028-16 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-17 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-18 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-19 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-20 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-21 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-22 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample:
       L266028-23 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
QC2MOD
Sample: L266028-24 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
Sample: L266028-25 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 10/27/06 00:00 RPT Date: 11/01/06 07:39
OC2MOD
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BLSS - 0811:0	100				0902			X	. :				<u>.</u>		
BUSS-0811:12					1010		.	X							
BLSS-0812:0					0904		:	X							
BISS-0812:12					1020		i	X		.				Salto 1	
BLSS-0909:0					0906		ļ	X							
BUS-0909:12					1036		!	X			:				
BLS. 0910:0		1		4	0908	1	14							-0	
*Matrix: \$\$ - Soil/Solid GW - Gro	oundwater WW - W	asteWater D	W - Drinking \	Vater (OT - Other_			•	av c	26 6	4/5	pH _	Ten	πp	
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Portnov Environr	tnoy Environmental Alternate billing info							Analy	rsis/Container/	Preservativ	е		Chain of Custody Pageof
		I	ark Nelso									Prepared by:	,
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							ļ	•	:	i i		SCIENC	E CORP.
		Repo	rt to:					!		!		12065 Leb	anon Road
		Email	to:									Mt. Juliet, T	N 37122
Project Description: WA HE			City/Sate Collected										5) 758-5858 90) 767-5859
Phone:	Client Project #:		ESC Key:	PORTE	NVTX- WA	HG					.		(5) 758-5859
FAX:				FORTE								17171 (02	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Collected by: Clint Moseley	Site/Facility ID#:	n#1	P.O.#:			,	T.S	•		i .	i _		
Collected by (signature):	1	MUST Be N	•	Date Resu	lts Needed:		enic	ļ :			EDD	CoCode portenvtx	(lab use only)
authory	Next	e Day : Day Day	100%	Email? _		No.	, Arsenic,	9				Template/Prelogin	
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Sample ID	Comp/Grab	Matrix*	Depth	Date	Time		Mercury, /	I.			8	Remarks/Contaminant	Sample # (lab only)
BLSS-0910:12	Grab	Soil		10/17	1040	1	X		:			L9	66-88030
BLSS-0910: 12.5					1041		X	!					03
BLSS-0911:D					0910		X	· -	<u> </u>	i	<u> </u>		04
BLSS - 0911:12					1050		X						<i>0</i> 5
BLSS-0911:12.5					1051		X						04
BLSS-0912:0					0912		ļ	1					·
BLSS - 0912:12					1100			X			!		
BLSS - 1008:0					0914			X		:	.		
BLSS-1008:12		V		4	1110			X	."				· !
*Matrix: SS - Soil/Solid GW - Grou	andwater WW - V	VasteWater	DW - Drink	king Water	-,			1			pH _	Ten	ip
Remarks:				•	9 0 1) , ,	tu	(D)	191217		Flow_	Oth	er
Relinquished by: (Signature)	Date/	Time: 0 707	Receiv	red by: (Signa	ature))	_\\		Samples return	ed via: Ur	PS	Condition:	(lab use only)
Relinquished by: (Signature)	Date:	Time:	_	red by: (Signa	atu de i						eceive	id:	di
	•				***************************************				3.6°C	4			フ **: **
Relinquished by: (Signature)	Date:	Time:	Recei	ved for lab b	y: (Signatur	e)			Date:	Time:	SE.	pH Checked:	NCF:
					Tet Sans				10-20-6	900			

Bortnov Environ	Alternate billing information:					Analy	vsis/Containe	er/Pres	ervativ	e	Chain of Custody Page of					
Portnoy Environi	пеі	แลเ			Direct Bill lark Nels										Prepared by:	rage or
										! !		ĺ			Envire	ONMENTAL
									_						SCIENC	CE CORP.
				Repo	in to:					i İ		i				oanon Road
				Emai	l to:										Mt. Juliet,	TN 37122
Project Description: WA HG					City/Sate Collected								;		-	15) 758-5858
Phone:	Client 8	Project #	 ‡:		ESC Key	: PORT	ENVTX- W	MHG		:			-			00) 767-5859 15) 758-5859
FAX:						FORT			_						17127 (0	13) 130-3039
Collected by Clint Moseley	Site/Fa	cility ID	#: m # :	L	P.O.#:				TS.							
Collected by (signature):	Rush	ე~(La	b MUST	Be N	lotified)	Date Res	sults Needed	No.	Arsenic,	: :			İ	EDD	CoCode portenvt	x (lab use only)
[(Marly 2)		Ne	eme Day. ext Day		. 100%	Email?	_No_Yes							~	Template/Prelogin	
Packed on Ice N Y	-	T\	vo Day .		50%	FAX?	_No_Yes	of Cnt	Mercury,	HOL				С2МОD	Shipped Via:	
Sample ID	Comp/	Grab	Matr	ix*	Depth	Date	Time		Mer	£				ဗ	Remarks/Contaminant	Sample # (lab only)
BLSS-1009:0	bro	b	50	ì		10/17	0916	l	Χ			i	•		Lə	0608-07
BLSS-1009:12	<u> </u> ,						1120	\perp	X			:				Ø
BLSS-1009:22	<u> </u>		<u> </u>				1130		X							09
BLSS-1010:0	<u> </u>		-			-	0918		X	-		 				10
Brzz-1010: 32	ļ						1140	11	X							<u> </u>
BLS - 1011:0	ļ			.			0920)	\rightarrow	-		_ļ_	ļ			13
BLSS-1011:000.5	ļ						0921	$\perp \downarrow \downarrow$	X							13
BLSS-1011:12	↓ .		1				1150		X	<u> </u>						14
BLGS , 1011: 77	ļ	ν j		U '			1200	<u>' </u>	J X				<u> </u>			15
*Matrix: \$\$ - Soil/Solid GW - Grou	undwate	r WW	- Waste\	Vater	DW - Drin	king Water	OT - Other							pH _	Ter	mp
Remarks:											_			Flow _	Oth	ner
Refinquished by: (Signature)		Date:	a T	ime: 070	Recei	ved by: (Sig	jnature)				Samples reti	urned vi	a: 🗀 UF	PS	Condition:	(lab use only)
Relinquished by: (Signature))	Date:		ime:	-	ved by: (Sig	nature)	-			Temp: 3.61C	-	ottles R		di:	
Relinquished by: (Signalure)		Date:	Ţ	ime:	Rece	ived for lab	by: (Signat	(1)			Date:	Ti	me:		pH Checked:	NCF:
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Portnoy Environmental			Alternate billing information:					nalvs	is/Container/P	reservativ	ve	Chain of Custady Page 1 of 0		
Portnoy Environi	nentai		irect Bill ark Nels									Prepared by:	Page <u>1</u> or <u>V</u>	
									: :			₩ ENVIR	ONMENTAL	
		Répo									:	SCIENC	CE CORP.	
													banon Road	
		Emai	to:						. :			Mt. Juliet,	TN 37122	
Project Description: WAHG			City/Sate Collected										15) 758-5858 (00) 767-5859	
Phone: FAX:	Client Project #	t:	ESC Key	PORTE	NVTX- W	AHG							15) 758-5859	
Collected by Clint Woslley	Site/Facility ID	#: m #1	P.O.#:				<u>1</u> 2							
Collected by (signature):	Rush? (La	b MUST Be N	-	Date Resu	lts Needed:	1	j jë		i		/EDD	CoCode portenvt	x (lab use only)	
Clarlys	Ne	me Day	. 100%	Email?	No_Yes	No.	Mercury, Arsenic,	_		:	D / E	Template/Prelogin		
Packed on Ice N Y	ı	vo Day	50%	FAX? _	No_Yes	of Cntr	g g	ວ: ວ:			CZMOD	Shipped Via:		
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time		Meri⊓	£			8	Remarks/Contaminant	Sample # (lab only)	
BUS-1012:0	Greats	50%		10/17	4690	1	7					La	66008-	
BLSS. 1012:18	1				DID	\bot		(
BLSS - 1108 : 0					0924			<u> </u>	:					
BLSS- 1108112	ļ				1920		7							
BLSS- 1109:0					0996		X	¦					10	
BLSS- 1109:12					1230		X						17	
BLSS - 1110:0					0928		X	ķ					18	
BLSS- 1110:0.5					0929		X		i				19	
BLS2 - 1110: 17	4	V 1		1	1240	1	X						30	
*Matrix: SS - Soil/Solid GW - Grou	ndwater WW	WasteWater	DW - Drin	king Water	OT - Other_					-	pH _	Ter	mp	
Remarks:											Flow_	Oth	ner	
Relinquished by: (Signature)	Date:	Time:	Receiv	ed by: (Signa	ature)			S	Samples returne FedEx ☐ Cot	d via: □ Ui orier □	P\$	Condition:	(let use only)	
Relinquished by: (Signature)	Date:	Time:	1	red by: (Signa	atu na) y			Ī	3.61 C	Bottles F		d:	<i>u</i> ~	
Relinquished by: (Signalure)	Date:	Time:	Rece	ived for lab b	y: (Signatur	7			Date:	Time:		pH Checked:	NCF:	

Portnov Environr	tnoy Environmental Alternate billing information: Direct Bill to					Analysis/Container/Preservative					/e		Chain of Custody Page of	
Folling Livitorii	Henta	J	Direct B Mark Ne										Prepared by:	3
													₩ ENVIR	RONMENTAL
										:				CE CORP.
			Report to:				-			İ		:		ebanon Road
			Email to:						:					, TN 37122
Project			 City/Sate									.	Phone (615) 758-5858
Description: WIA H6	lon	4.	Collected				İ							800) 767-5859
Phone: [FAX:	Client Project	#:	E\$C H	vey: PORT	ENVTX- WA	AHG							FAX (615) 758-5859
Collected by:	Site/Facility II	D#:	P.O.#	:			25							
Collected by: Clint Washing Collected by (signature):			 Be Notified)	Data Par	ults Needed:	1				į		١٥	CoCode porteny	∕tx (!ab use only)
1 2	s	Same Day	200%			No.	Arsenic,				i	/ EDD	Template/Prelogin	
Carrad of		lext Day [wo Day			_NoYes	of					jr.	асамор		·:
Packed on Ice N Y			1	PAX?	NoYes	Cntrs	Mercury,	101		.		SZ	Shipped Via:	· .
Sample ID	Comp/Grab	Matrix	Depth	Date	Time		Σ					Ğ	Remarks/Contaminant	Sample # (lab only)
BLSS-1111:0	Grab	50:	\	16/1-	1 0930	١ ١		X	: .			<u> </u>	يرًــا	HoldOBS-
BLBS-1111:12					1250	1		X						
BLSS-1208:0		1			0937	\Box	<u> </u>	X				<u> </u>		
BLSS - 1208:12					1300	\coprod		X						
BLSS- 1209:0					0934		:	ΧI		.				
BLSS- 1500:17		1			1310		:	X						
BLSS- 1210:0					0936		:	X						
BLSS- 1210:12					1320		:	X						
BUS-1010:0.5	<u> </u>	<u> </u>			0919	V	X							<u> </u>
*Matrix: \$\$ - Soil/Solid GW - Grou	indwater WW	- WasteWa	ater DW-D	rinking Water	OT - Other_							рН	To	етр
Remarks:												Flow	0	ther
Relinquished by: (Signature)) Date		ne: Red	ceived by: (Sig	nature)				Samples r	eturned	via: □ Ui	PS	Condition:	(lab use only)
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				served by, (big	The state of the s				Temp: 3.6		40			
Relinquished by: (Signature)	Date	: Tin	ne: Re	ceived for lab	by: (Signatur	е)			Date:		Time:		pH Checked:	NCF:
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Mark Nelson Mark Nelson Mark Nelson Mark Nelson	Portney Environ	nvironmental Alternate billing information:				Analysis/Container/Preservative					Chain of Custody Page (of			
Policit Description: WA H & Colored Description: WA H & Co	l officy Environ	mentai	I							: !			Prepared by:	
Project Description: WA HG Client Project #: ESC Key: Phone: Client Project #: ESC Key: Phone: Collected by: Colle										n - market e			Envire	ONMENTAL
Project Description: W A H & Colored Description: W A H & Colored Description: W A H & Colored Description: W A H & Colored Description: W A H & Colored Description: W A H & Colored Description: W A H & Colored Description: ESC Key: Phone (800) 767-5859								:					SCIENC	CE CORP.
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Phone: Client Project #: ESC Key: PORTENVTX-WAHG FAX (615) 758-5859 FAX (615) 758-5			Emai	l to:									Mt. Juliet,	IN 37122
Prone: Client Project #: ESC Key: PORTENVTX-WAHG	Project Description: IAJA HG	·		City/Sate Collected					. :					· .
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Collected by (signature):	FAX:				PORIE	NVIX-WA	AHG						FAX (6	15) 758-5859
Collected by (signature):	Collected by: Wase her	Site/Facility ID#	0 # 1	P.O.#:				Z S				.		
Packed on Ice N Y	Collected by (signature):	Rush? (Lab	MUST Be N	•	Date Resu	lts Needed:	Ī	nic,		,		0	CoCode portenvt	x (lab use only)
BISS BL RA - 1:0 Grab Soil 10/17 C940 I X BLSS BL RA - 1:0 Grab Soil 13:40 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 1:0 G940	Carolina				Email? _	No_Yes	No.	Arse				I ~ I	Template/Prelogin	
BISS BL RA - 1:0 Grab Soil 10/17 C940 I X BLSS BL RA - 1:0 Grab Soil 13:40 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 3:0 G940 X BUSS - BL RA - 1:0 G940	Packed on Ice N Y	Two	o Day	50%	FAX? _	No_Yes	}	ָה לאַ				ĮΘ	Shipped Via:	199
BLSS BL RA-1:0 Grab Soil 10/17 C940 i Y BLSS BL RA-1:0 Grab Soil 10/17 C940 i Y BLSS BL RA-1:0 G942 X Watrix SS Soil/Soild GW-Groundwater WW-WasteWater DW-Drinking Water OT-Other Remarks: Relinquished by (Signature) Date: Time: Received by (Signature) Date: Time: Received by (Signature) Tegna: 6 Bottles Received: Had by 18 Bottl	Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Cntrs	Merc		: •		000		Sample # (lab only)
BLSS BL RA - 1 : dd 3 40 X BUSS - BL RA - 3 : D BUSS -	BISS BL 24-1:0	Grab	Soil		10/17	0940	1					2	12	10(01)28-290
BUSS - BU - 24 - 3 : 24	BLSS-BL-RA-1:dd)				1	X	:					
*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other	BLSS-BL-RA-3:0					0942		X						84
*Matrix: \$S - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other	BLSS. BL. RA-3: 12		4)			1400	1	<u>} </u>	!	<u></u>	<u> </u>			85
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*Matrix: \$\$ - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other	- ".	<u> </u>				ļ	<u> </u>	i Ve						
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Relinquished by: (Signature) Date: Time: Received by: (Signature) Date: Time: Received by: (Signature) Received by: (Signature) Temp: 3.6 Bottles Received: 44	*Matrix: SS - Soil/Solid GW - Gro	undwater WW -	WasteWater	DW - Drin	king Water (OT - Other_						pH _	Ten	ıp
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	Relinquished by: (Slorung, 18)	/ 	· · · · ·						Temp: 60 Bottles Receive				: [
10-20-6 900	Relinquished by: (Sign and)	Date:	Time:	Rece	ved for lab b				Date	e:	Time:		pH Checked:	NCF:



Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Tuesday November 21, 2006

Report Number: L268733
Samples Received: 10/20/06

Client Project:

Description: WAHG

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077

November 21,2006

ESC Sample # : L268733-01

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

: BLSS-0909 0 Sample ID Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:06

Parameter	W.Result	RDL	D.Resul	t RDL	Units	Method	Date
Total Solids	91.0		91.0		ફ	2540G	11/17/06
Arsenic	BDL	1.0	BDL	1.1	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077

November 21,2006

ESC Sample # : L268733-02

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

: BLSS-1008 0 Sample ID Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:14

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	85.2		85.2		%	2540G	11/17/06
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077

November 21,2006

ESC Sample # : L268733-03

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1108 0 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:24

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.7		95.7		8	2540G	11/17/06
Arsenic	BDL	2.0	BDL	2.1	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 21,2006

ESC Sample # : L268733-04

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1111 0 Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:30

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.8		98.8		%	2540G	11/17/06
Arsenic	42.	5.0	43.	5.1	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 21,2006

ESC Sample # : L268733-05

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Sample ID : BLSS-1208 0

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:06

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.4		99.4		%	2540G	11/17/06
Arsenic	BDL	2.0	BDL	2.0	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 21,2006

ESC Sample # : L268733-06

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

: BLSS-1209 0 Sample ID

Project # :

Collected By : Clint Moseley Collection Date : 10/17/06 09:34

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	11/17/06
Arsenic	BDL	2.0	BDL	2.0	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 November 21,2006

ESC Sample # : L268733-07

Date Received : October 20, 2006 Description : WAHG

Site ID : BELLINGHAM 1

Project # :

Sample ID : BLSS-1210 0

Collected By : Clint Moseley Collection Date : 10/17/06 09:36

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	11/17/06
Arsenic	11.	2.0	11.	2.0	mg/kg	6010B	11/21/06

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L268733-03	Arsenic	0
L268733-05	Arsenic	0
L268733-06	Arsenic	0

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
	Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

 Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)

2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125

Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118

2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

 TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 11/21/06 at 19:10:29

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L268733-01 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-02 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-03 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-04 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-05 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-06 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-06 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Sample: L268733-07 Account: PORTENVTX Received: 10/20/06 09:00 Due Date: 11/17/06 00:00 RPT Date: 11/21/06 16:59 QC2MOD, EDD, Refer to L266028, P191217.

Portney Environ	noy Environmental Alternate billing information: Direct Bill to		ļ	Analysis/Container/Preservative				Chain of Custody Page 2 of			
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BLSS- 1210:12				1320	- 114	X		21.5. 2035			
BUS-1010:0.5	V	V	Ψ	0919	JX		200	200			
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Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Wednesday February 07, 2007

Report Number: L278639
Samples Received: 01/31/07

Client Project:

Description: BELLINGHAM I

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Fom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-01

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1012:0 Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.2		99.2		%	2540G	02/07/07
Arsenic	75.	5.0	75.	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Project # :

ESC Sample # : L278639-02

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1012:0.5

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	02/07/07
Arsenic	110	5.0	110	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Project # :

ESC Sample # : L278639-03

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1111:12

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	93.7		93.7		ફ	2540G	02/07/07
Arsenic	11.	5.0	12.	5.3	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-04

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1111:12.5

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.7		94.7		ે	2540G	02/07/07
Arsenic	9.1	5.0	9.6	5.3	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Project # :

ESC Sample # : L278639-05

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1112:0

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	02/07/07
Arsenic	63.	5.0	64.	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-06

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1211:0 Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.6		98.6		%	2540G	02/07/07
Arsenic	35.	5.0	35.	5.1	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-07

Date Received : January 31, 2007 Description : BELLINGHAM I

Arsenic

Site ID : BELLINGHAM I

mg/kg

6010B

02/01/07

Project # :

5.0

Sample ID : BLSS-1211:0.5

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

RDL D.Result RDL Units Method Parameter W.Result Date Total Solids 99.3 99.3 왕 2540G 02/07/07

40.

5.0

39.

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 02/07/07 14:25 Revised: 02/07/07 18:42

Attachment A List of Analytes with QC Qualifiers

Ј6

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
	The sample matrix interfered with the ability to make any accurate

Qualifier Report Information

determination; spike value is low

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

 Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)
2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125
Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118
2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 02/07/07 at 18:42:53

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L278639-01 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Refer to P200831 Sample: L278639-02 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-03 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-04 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-05 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-06 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25

Sample: L278639-07 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25

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BLSS-1310:0						 							
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Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Sunday February 18, 2007

Report Number: L280066
Samples Received: 01/31/07

Client Project:

Description: WA-HG

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Fom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-01

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLS-0912:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.5		96.5		%	2540G	02/16/07
Arsenic	37.	5.0	38.	5.2	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-02

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Est. 1970

Sample ID : BLSS-0913:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		ે	2540G	02/16/07
Arsenic	68.	5.0	68.	5.0	mg/kg	6010B	02/12/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-03

Date Received : Januar Description : WA-HG January 31, 2007

Description

Site ID : BELLINGHAM I

Sample ID : BLSS-1012:0.5

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Project :

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	Ву	Dil
TCLP Extraction	-				1311	02/13/07 1007	LJN	1
Arsenic	BDL	0.050	mg/l	5.0	6010B	02/13/07 1550	LF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA

Note:

The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/16/07 14:30 Revised: 02/18/07 17:31



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-04

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1012:12

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.1		94.1		%	2540G	02/16/07
Arsenic	BDL	5.0	BDL	5.3	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-05

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1013:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.1		99.1		%	2540G	02/16/07
Arsenic	77.	5.0	78.	5.0	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-06

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1112:12

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	91.4		91.4		%	2540G	02/16/07
Arsenic	BDL	5.0	BDL	5.5	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-07

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1113:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.2		99.2		ે	2540G	02/16/07
Arsenic	220	10.	220	10.	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-08

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Project # :

Sample ID : BLSS-1211:12

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	92.9		92.9		%	2540G	02/16/07
Arsenic	BDL	5.0	BDL	5.4	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-09

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1212:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.1		99.1		ે	2540G	02/16/07
Arsenic	160	10.	160	10.	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

Project # :

Est. 1970

ESC Sample # : L280066-10

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1310:0

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.3		99.3		%	2540G	02/16/07
Arsenic	20.	5.0	20.	5.0	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 18,2007

ESC Sample # : L280066-11

Date Received : January 31, 2007 Description : WA-HG

Site ID : BELLINGHAM I

Sample ID : BLSS-1311:0

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.5		98.5		%	2540G	02/16/07
Arsenic	18.	5.0	18.	5.1	mg/kg	6010B	02/12/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Summary of Remarks For Samples Printed 02/18/07 at 17:31:13

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L280066-01 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-02 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-03 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639-02. Sample: L280066-04 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-05 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 OC2MOD. Refer to L278639. Sample: L280066-06 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 Refer to L278639. OC2MOD. Sample: L280066-07 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-08 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-09 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-10 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639. Sample: L280066-11 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/16/07 00:00 RPT Date: 02/16/07 14:30 QC2MOD. Refer to L278639.

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Description: WA - HG Phone:	Client Project		Collected		_		-	İ					615) 758-5858 800) 767-5859
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Alternale billing information: Portnoy Environmental Analysis/Container/Preservative 1880 S Diary Ashford Prepared by: Suite 660 **ENVIRONMENTAL** Houston Texas 77077 SCIENCE CORP. Alan Hopkins 12065 Lebanon Road Email to: ahopkins@portnoyenv.com Mt. Juliet, TN 37122 Project Description: WH City/Sate Collected Phone (615) 758-5858 Phone: Client Project #: Phone (800) 767-5859 ESC Key: FAX: portenvix-wahq FAX (615) 758-5859 P.O.#: Collected by (signature): Rush? (Lab MUST Be Notified) Date Results Needed: CoCode partenytx (lab use only) Same Day. 200% OC2MOD, TS Next Day..... 100% Email? __No__Yes Template/Prelogin Packed on Ice N FAX? _No_Yes Shipped Via: Sample ID Comp/Grab Matrix* Date Time Remarks/Contaminant Sample # (lab only) 1.280066 *Matrix: \$S - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_ Temp Remarks: Other Relinguished by (Signature) Time: 07/2:00 Samples returned via: UPS Received by: (Signature) Condition: (lab use only) Relinquished by: (Si Received by: (Signatur Bottles Received 26-202 Relinquished by: (SI Date: Received for lability (Bignature) pH Checked:



Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Wednesday February 07, 2007

Report Number: L278639
Samples Received: 01/31/07

Client Project:

Description: BELLINGHAM I

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Fom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-01

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1012:0 Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.2		99.2		%	2540G	02/07/07
Arsenic	75.	5.0	75.	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Est. 1970

ESC Sample # : L278639-02

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1012:0.5

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	02/07/07
Arsenic	110	5.0	110	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Project # :

ESC Sample # : L278639-03

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1111:12

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	93.7		93.7		%	2540G	02/07/07
Arsenic	11.	5.0	12.	5.3	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-04

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I Sample ID : BLSS-1111:12.5

Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.7		94.7		ે	2540G	02/07/07
Arsenic	9.1	5.0	9.6	5.3	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

Project # :

ESC Sample # : L278639-05

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1112:0

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	02/07/07
Arsenic	63.	5.0	64.	5.0	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-06

Date Received : January 31, 2007 Description : BELLINGHAM I

Site ID : BELLINGHAM I

Sample ID : BLSS-1211:0 Project # :

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.6		98.6		%	2540G	02/07/07
Arsenic	35.	5.0	35.	5.1	mg/kg	6010B	02/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 February 07,2007

ESC Sample # : L278639-07

Date Received : January 31, 2007 Description : BELLINGHAM I

Arsenic

Site ID : BELLINGHAM I

mg/kg

6010B

02/01/07

Project # :

5.0

Sample ID : BLSS-1211:0.5

Collected By : Clint Moseley Collection Date : 01/30/07 00:00

RDL D.Result RDL Units Method Parameter W.Result Date Total Solids 99.3 99.3 왕 2540G 02/07/07

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5.0

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BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note: The reported analytical results relate only to the sample submitted. This report shall not be reproduced, except in full, without the written approval from ESC. Reported: 02/07/07 14:25 Revised: 02/07/07 18:42

Attachment A List of Analytes with QC Qualifiers

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Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
	The sample matrix interfered with the ability to make any accurate

Qualifier Report Information

determination; spike value is low

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

 Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)
2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125
Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118
2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 02/07/07 at 18:42:53

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L278639-01 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Refer to P200831 Sample: L278639-02 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-03 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-04 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-05 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25 Sample: L278639-06 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25

Sample: L278639-07 Account: PORTENVTX Received: 01/31/07 09:00 Due Date: 02/07/07 00:00 RPT Date: 02/07/07 14:25

Suite 660 Houston Texas 77077 Report Alan Hopkins Alan Hopk	Portnoy Enviror 1880 S Diary A		Alte	mate billing	g information;			71. 1	Anai	vsis/Co	intainer/Pre	eservative	Prepared by:	Chain of Custody Page 4 of 3
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Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Friday March 23, 2007

Report Number: L284968
Samples Received: 03/16/07

Client Project:

Description: BELLINGHAM 1

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-01

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0812:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Project # :

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.7		96.7		%	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/20/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-02

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0812:0.5

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.7		97.7		ે	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-03

Date Received : March 16, 2007 Description : BELLINGHAM 1

Description : Bellindham i

Site ID: BELLINGHAM 1

Sample ID : BLSS-0813:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

RDL D.Result RDL Units Method Parameter W.Result Date Total Solids 95.9 95.9 왕 2540G 03/23/07 Arsenic BDL 5.0 BDL 5.2 mg/kg 6010B 03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
Reported: 03/23/07 14:08 Printed: 03/23/07 16:41



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-04

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1 Sample ID : BLSS-0813:0.5

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.6		94.6		8	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.3	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-05

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0814:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.2		95.2		%	2540G	03/23/07
Arsenic	16.	5.0	17.	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-06

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0814:0.5 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.3		96.3		%	2540G	03/23/07
Arsenic	25.	5.0	26.	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-07

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0914:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.5		98.5		%	2540G	03/23/07
Arsenic	110	5.0	110	5.1	ma/ka	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-08

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-0914:0.5 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.9		98.9		%	2540G	03/23/07
Arsenic	52.	5.0	52.	5.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-09

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1014:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Resul	t RDL	Units	Method	Date
Total Solids	98.6		98.6		%	2540G	03/23/07
Arsenic	6.1	5.0	6.2	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-10

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1014:0.5

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.1		98.1		ે	2540G	03/23/07
Arsenic	16.	5.0	16.	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-11

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1114:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.5		98.5		%	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-12

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1213:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.9		97.9		&	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-13

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1312:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.1		95.1		રુ	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier	
L284968-02	Arsenic	0	
L284968-03	Arsenic	0	
L284968-04	Arsenic	0	
L284968-13	Arsenic	0	

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning				
O (ESC) Sample diluted due to matrix interferences that impaired the abilito make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.					
	Qualifier Report Information				
as required l by ESC, we have results. Ear Data qualified the potential matrices incomestablished:	ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).				
t: re	Definitions ne relationship of the observed value of a known sample to the rue value of a known sample. Represented by percent recovery and elevant to samples such as: control samples, matrix spike recoveries, arrogate recoveries, etc.				
]	The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.				

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)

pphenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125

15 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118

pmophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134 2-Fluorophenol

Phenol-d5 2,4,6-Tribromophenol 51-141

- Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 03/23/07 at 16:41:21

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L284968-01 Account OC2MOD MISC = hold fee	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-02 Account OC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-03 Account OC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-04 Account OC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-05 Account OC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-06 Account QC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-07 Account QC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-08 Account QC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08
Sample: L284968-09 Account QC2MOD						
Sample: L284968-10 Account QC2MOD						
Sample: L284968-11 Account QC2MOD						
Sample: L284968-12 Account QC2MOD						
Sample: L284968-13 Account QC2MOD	: PORTENVTX Received:	03/16/07	18:44 Due Date:	03/23/07	00:00 RPT Date:	03/23/07 14:08

Portnoy Environi	mental	Alternate billing information:			Ana	lvsis/C	ontainer/Pr	eservative		Chain of Custody
1880 S Diary As		Direct Bill							Prepared by:	1 ago 7 01 1
Suite 660	illora						:		₩ ENVIR	ONMENTAL
	77077						:	!	SCIEN	CE CORP.
Houston Texas 7	1011	Report to:	Alan Hopkins					:	1	banon Road
		Email to:	pkins@portnoyen	v.com					Mt. Juliet,	TN 37122
Project 11/ 11/			Bellingham 1	!		 	:		Phone (6	515) 758-5858
Description: UA H 6	Client Project #:	ESC Key	sellingham =	_	<u></u>)			Phone (8	(00) 767-5859
FAX:	-Station 195		portenvtx-wa	ahg	Justy	,			FAX (6	515) 758-5859
Collected by Woseley	Site/Facility ID#:	P.O.#;	· ·-		4.65		i (· .
Collected by (signature)	Rush? (Lab MUST	•	Date Results Neede		7.			Ì	CoCode portenvi	(lab use only)
Muy 1	Same Day Next Day		Email? _No_Yes	No.		0			Template/Prelogin	
Packed on Ice N Y	Two Day	50%	FAX?NoYes	of Cntrs	ос2мор М. **	9	j	!	Shipped Via:	
Sample ID	Comp/Grab Matrix	* Depth	Date Time	Citis		井			Remarks/Contaminant	Sample # (tab only)
RUSS-0712:0	1 501		3/15/01	Ì		X				1284968
BUS-0712:12	1.000			\bot		X	<u> </u>			
8 : 01 3:0				$\perp \downarrow \downarrow$		X				11 - 94 kg 1 kg
BLSS-0713:12				$\perp \downarrow \downarrow$		X	:			M. L. Ç.
BUS-0714:0	1,000					X				
BLSS-0714:12						$ \chi $				4 4 44
RLSS _ 0715:0						X				
BLSS-0715:12					•	χ	<u> </u>			
BL55-0811:0	4 4			<u> </u>		<u> X </u>			<u> </u>	
*Matrix: \$\$ - SoiVSolid GW - Grou		ater DW - Drin	king Water OT - Othe	<u></u>		_		pН	Te	тр
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Relinquished by: (Signature)	Date: Tir	ne: Rece	ived for lab by: (Sjgna	iure)	_	Z Date	.54	77 403 Time:	pH Checked	ical intact
The state of the s		do	, ///		_	3/	16/07	0900	his angeliana	

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Portnoy Environi 1880 S Diary As Suite 660 Houston Texas 7	hford		Alternate billing information: Report to: Alan Hopkins mail to: ahopkins@portnoyenv.com City/Sate Collected Belling haw 1			A	na vs	is/Container/	Preservati	ve	Prepared by: ENVIRONMENTA SCIENCE CORP. 12065 Lebanon Road Mt. Julict, TN 37122		
Project Description: WA H G Phone: FAX:	Client Project #:		aho	Belling				: : }		:	Learner.	Phone (6 Phone (8	TN 37122 15) 758-5858 00) 767-5859 15) 758-5859
Collected by (Signature): Packed on Icc N Y	Nex		. 200% 100%	Date Resul	NoYes	No. of	וֹם ו	A GENIC	:			CoCode portenvt: Template/Prelogin Shipped Via:	(lab use only)
Sample iD	Comp(Grab	Matrix*	Depth	Date	Time	Chas	000	A CONTRACTOR	BOL			Remarks/Contaminant	Sample # (lab only)
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BLSS-0813:0 BLSS-0813:0.5 BLSS-0813:12 BLSS-0814:0								X X X	ζ				-W
*Matrix: SS - Soil/Solid GW - Grou	Indwater WW-	WasteWater	DW - Drin!	king Water C	OT - Other	4		<u>X</u>		***************************************	рН	Ter	
Remarks: Relinquished by: (Signature) Relinquished by: (Signature)	Date:	Time:	בוכ	red by: (Signa red by: (Signa					Samples return Dredex Lack	Bottles	Received	Condition:	
Relinquished by: (Signature)	Date:	Time:		ived for lab b	y: (Signature	<u>"</u>]	7.5° Date: 3/16/67		0		

Portnoy Environ 1880 S Diary As Suite 660	menta hford	l A	Alternate billing information:			Analysis ;	/Containe	er/Preservative	Prepared by:	Chain on Custony Page of ONMENTAL		
Houston Texas	77077	L						:				CE CORP.
Troductor rexas	11011	Re	port to:	Alan I-	lopkins	_			ļ.,			
		Em	ail to:	opkins@po	vrtpovopy.			i		'		ebanon Road TN 37122
Project Description: WA HG			City/Sate	- ii. 1	A.				1 1			
Phone:	Client Project		ESC Ke	sellingh	am 1		i	:		:	1	615) 758-5858 300) 767-5859
FAX:			200 NC		envtx-wah	g		1 /		: ' '		515) 758-5859
Collected by Moseley	Site/Facility ID)#:	P.O.#:	<u> </u>	<u>. </u>			77		1 1		
Collected by (signature): Packed on Ice N Y	Sa Na	b MUST Be ame Day ext Day wo Day	. 200% . 100%	Date Resu Email? FAX?		No.	QC2MOD,TS	F. Arsen		, , , , , , , , , , , , , , , , , , ,	CoCode portenvi	bx (lab use only)
Sample ID	Comp/Grab	Mətrix*	Depth	Date	Time	Cntrs	C2 :	Meres For	:	! 	Shipped Via:	<u> </u>
RUSS-6706 0814:D		⊢——,—	Depart	 ,,	-	+ . !	<u> </u>	<u>≯; ĭ</u>		-	Remarks/Contaminant	Sample # (lab only)
BL55-0815:0	\	Soil	 	3/15/01		1		- : 	† +-			1284968
RUS - 0815:12			 	 - - - - - - - - - 	 -	 		$\rightarrow \diamondsuit$	<u> </u>	!	· · · · · · · · · · · · · · · · · · ·	
BLSS - 0914:0	· · · · · · · · · · · · · · · · ·			- 				<u></u>	-			
BLSS-0914.0.5						╎╌┼	·/ : \	} 	!!		<u> </u>	<u>-07</u>
BLSS-0914:12			 -			-		\ \ V	,	<u>'</u>		-08
RLS- 0915:0				 				$\frac{1}{\sqrt{2}}$				
855-0915:12			<u>-</u> .	-				₩		+		
BLSS-1014:0		1		7		of 1		χ	<u> </u>			
*Matrix: SS - Soil/Solid GW - Groun	ndwater WW -	WasteWater	DW - Drink	ing Water O	T - Other	<u>!</u>			<u>'</u>			-69
Remarks:					- 00.67_					pH _	Ten	•
Relinguished by: (Signature)	Date:	/ Time:	Receive	ed by: (Signat	ture)			Sarg	ples return	Flow _ ed via: □ UPS		
Relinquished by: (Signature)	3/5/ Date:	17 + 480 Time:		ed by: (Signat		<u>-</u>		Tem	# F. L. C	Bottles Received	Condition:	dab use on ()
Relinquished by: (Signature)	Date:	Time:	Receiv	ed for lab by	: (Signature	6	-	Date	16/07	Time: 0900	pH Checked:	NCF:

Portnoy Enviror 1880 S Diary As		Alternate billin	Alternate billing information:		Ana	lvsis/Containe	r/Preservative	Prepared by:	Chain of custory Page of of
Suite 660	311101 G							ENVIR	ONMENTAL
	77077				:				CE CORP.
Houston Texas	77077	Report to:	Alan Hopkins		:				banon Road
		Email to:	opkins@portnoyenv.	com	!		•	Mt. Juliet,	1
Project A A A A A								Phone (6	15) 758-5858
Description: WA HG Phone:	Client Project #:	Collected (3ellingham 1		:				00) 767-5859
FAX:	Chesit Project #.	ESC VA	portenvtx-wah	g	! : ,	•	.	FAX (6	15) 758-5859
Collected by: C. Moseley	Site/Facility ID#:	P.O.#:			TS Arsoniz				
Collected by (signature):	Rush? (Lab MUST	Be Notified)	Date Results Needed:	1	્ર	3		CoCode portenyt	x (lab use only)
1 respectively			Email?NoYes	No.	್ 4	1		Template/Prelogin	
Packed on Ice N Y		50%	FAX? _No_Yes	of	doy 🛦			Shipped Via:	
Sample ID	Comp Grab Matri	k* Depth	Date Time	Cntrs	OCZMOD,TS	Hold		Remarks/Contaminant	Sample # (lab only)
BLS-1014:0.5	1 Soi	1	3/5/07	11	X	-			U284968 -
BLSS-1014:12			i			Χ			
BLSS-1015:0						Χ			
BLSS-1015:12						X			
BLSS-1114:0					X				-11
BUSS-1114:12						X			
BLSS-1115:0						X			
BUS- 1115:12						X			
BLS5-1213:0	4 4		4	1	X				-12
*Matrix: SS - Soil/Solid GW - Gro	oundwater WW - WasteW	ater DW - Drin	king Water OT - Other_				pН	Ter	пр
Remarks:							Flow	Oth	ner
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Relinquished by: (Signature)		y60 me: Recei	ved by: (Signature)			Temp:	Bottles Receive		
Relinquished by: (Signature)	Date: Ti		ived for lab by: (Signatu	re)		Date: 3/16/07	Time:	pH Checked:	NCF:

Portnoy Environ	mental	Alternate billing information:		An	alvsis/	Container/	Preservative		Chain of Custody Page of	
1880 S Diary As							1	i	Prepared by:	Page 3 of <u>'φ</u>
Suite 660	sillolu				:	.		İ		
1						·			Envir	ONMENTAL
Houston Texas	77077	Report to:	AT 111:				•	! ; l	SCIEN	CE CORP.
	į	Email to:	Alan Hopkins					, . ,		ebanon Road
Project		aho	opkins@portnoyenv	'.com		: !		, ! ·	Mt. Julict,	TN 37122
Description: WAHG	Inc.	Collected	Sellingham 1	<u></u>				' ! ; 		515) 758-5858
FAX:	Client Project #:	ESC Key	portenvtx-wa	1		:		, !		800) 767-5859 515) 758-5859
Collected by . Woseley	Site/Facility /D#:	P.O.#:				1				713) 738-3833
Collected by (signature):	Rush? (Lab MUST B		D D D D		1 2		i			
1 Clark of S	Same Day	200%	Date Results Needed	No.	TS TANSON	5			CoCode portenvi	tx (lab use only)
Packed on Ice N Y	Next Day	100% 50%	Email?NoYes	of	OCZMOD,TS	<u>, </u>	i		Template/Prelogin	
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Sample ID	Comp/Grab Matrix*	Depth	Date Time		8 🖠	무	! —————		Remarks/Contaminant	Sample # (lab only)
BUS-1213:12		ļ	3/19/11	1		X				1284908
BCS-121410	1_		-	_	- 	, X_	·			
BLSS - 1312:0				+++		.X.	_		<u> </u>	
BLSS - 1312:12				++-	X	1		· i		-13
BLSS-1313:0				++	<u></u>	X				
BLSS - 1313:1)				++-	- -	X	<u>'</u>		·	
18/55 - 14/1:N	1		 	+++		X				
BUSS - 1411:12	1 1 4				- i	Ð	<u> </u>			<u> </u>
*Matrix: SS - Soil/Solid GW - Grou	indwater WW - WastaWat	ar DW Drink	ing Wets- OT Otto			. A L			 -	
Remarks:	1703107720	er Bri-Dillik	ing water OI - Other_					pH _	Ten	ъ <u> </u>
Relinquished by: (Signature)	Date: / Time	 				10 "		Flow _	Oth	er
(A A A A A A A A A A A A A A A A A A A	Date: Time	Receive	ed by: (Signature)		·	Sampl	es returned Ex 🖽 Cou	I via: 🗀 UPS	Condition:	(lab use on
Relinquished by: (Sic Lature)	Date: Time		d by: (Signature)		,	Temp:		Bottles Received	1:	
Relinquished by: (Signature)	Date: Time	Receiv	ed for lab by: (Signatur	·eV	/_	Z. Date:	<u> </u>	47 462		
			mal fl	\longrightarrow ($\mathcal{L}_{\mathcal{L}}$		67	Time: 0900	pH Checked:	NCF:

Portnoy Environ 1880 S Diary As Suite 660	hford	А	lternate billin	g information:				Analy	rsis/(Container/Pr	eservati	ive		Chain of Gustony Page Voi ONMENTAL CE CORP.
Houston Texas 7	77077	_		Alan Hopkins@po	rtnoyenv.c	om					: 		12065 Let Mt. Juliet, 1	oanon Road IN 37122
Project Description: WAHP Phone: FAX:	Client Project #	# :	Collected ESC Ke		iαWl en∨tx-wahç	1		1.		:	<u> </u>		Phone (8)	15) 758-5858 90) 767-5859 15) 758-5859
Collected by: Woseley Collected by (signature): Packed on Ice N Y	Sa	#: b MUST Be ime Day oxt Day vo Day	200%	Date Resul		No.	QC2MOD,TS	Zinasyy r					CoCode portenyto Template/Prelogin Shipped Via:	(lab use only)
Sample ID	CompaGrab	Matrix*	Depth	Date	Time	Cntrs	QC2	1	무				Remarks/Contaminant	Sample # (lab only)
BLSS- 1412:12		Soil		3/15/07		1		į	X					V 28468
							17.			-				
*Matrix: SS - Soil/Solid GW - Grou	ndwater WW -	WasteWate	r DW - Drin	L king Water C	I OT - Other	<u></u>			!			pH _	Terr	
Relinquished by: (Signature)	Date:	1 1 + : hff		ved by: (Signa		<u>-</u>			⊒ Fe	ples returned	via: □ U		Oth Condition:	(lab use only)
Relinquished by: (Signature)	Date:	Time:	Rece	ved by: (Signa		» ————————————————————————————————————			7	.5	Bottles F 47 Time: 09	903	pH Checked:	NCE:



Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Thursday March 29, 2007

Report Number: L286417 Samples Received: 03/16/07

Client Project:

Description: Bellingham 1

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Fom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

ESC Sample # : L286417-01

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0714:0 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	<u> </u>
Total Solids	96.0		96.0		%	2540G	03/29/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/29/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

ESC Sample # : L286417-02

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

: BLSS-0715:0 Sample ID Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.0		96.0		%	2540G	03/29/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/29/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

ESC Sample # : L286417-03

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1 Sample ID : BLSS-0814:12

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	83.0		83.0		%	2540G	03/29/07
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	03/29/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

Project # :

ESC Sample # : L286417-04

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-0815:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.5		94.5		%	2540G	03/29/07
Arsenic	26.	5.0	28.	5.3	mg/kg	6010B	03/29/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

Project # :

ESC Sample # : L286417-05

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0914:12

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	91.3		91.3		%	2540G	03/29/07
Arsenic	BDL	5.0	BDL	5.5	mg/kg	6010B	03/29/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 29,2007

Project # :

ESC Sample # : L286417-06

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-0915:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.9		97.9		%	2540G	03/29/07
Arsenic	10.	5.0	10.	5.1	mg/kg	6010B	03/28/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Summary of Remarks For Samples Printed 03/29/07 at 14:02:13

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L286417-01 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-02 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-03 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-04 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-05 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-05 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968. Sample: L286417-06 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/03/07 00:00 RPT Date: 03/29/07 12:53 QC2MOD. Refer to L284968.

Portnoy Enviro	nmental		ng information:	 	Analysis	/Container/P	reservative	-	Chain of Custot Page of
1880 S Diary		Direct Bil	I	:		1 1	4	Prepared by:	- /
Suite 660	ASITIOIU							₽ ENVIR	RONMENTAL
Houston Texas	s 77077			:	:		i	SCIEN	CE CORP.
I loudton roxu.	3 1 1 0 1 1	Report to:	Alan Hopkins					12065 L	ebanon Road
		Email to: ah	opkins@portnoyenv.c	com .			<u> </u>	Mt. Juliet	; TN 37122
Project Description: UA H 6		City/Sate ,	Bellingham 1						(615) 758-5858
Phone:	Client Project #:	ESC Ke	7y. /		ν̈́			j	800) 767-5859
FAX:	Station 46	5	portenvix-wah	9	Arseni			FAX ((615) 758-5859
Collected by Woseley	Site/Facility ID#:	P.O.#:			17.				
Collected by (signature):	Rush? (Lab MUS	ST Be Notified)	Date Results Needed:					CoCode porten	/tx (lab use onl
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Sample ID	Comp/Grab Ma	atrix* Depth	Date Time		🕸 =	#		Remarks/Contaminant	Sample # (lab or
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BLSS-0713:0					X				
BLSS-0713:12					<u> </u>				
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Relinquished by: (Signally)	Dale:	Time: Rec	pived for lab by: (Signatur	e)	D	ater	Time:	pH Checked	NCF:
		-+1	nal Ithe		::: 7	3/16/07	0900		

Portnoy Enviror 1880 S Diary A	chford						Chain of Custo Page 2 of 1.
-	Siliora						
Suite 660							Environmental
Houston Texas	77077	Report to:					SCIENCE CORP.
		Email to:	Alan Hopkins	_			12065 Lebanon Road
Project	<u> </u>		ahopkins@portnoyenv.con				Mt. Juliet, TN 37122
Description: WA HG-	lon -	Collec	* Rellingham				Phone (615) 758-5858
FAX:	Client Project #;	ESC	CKey: J portenvtx-wahg				Phone (800) 767-5859 FAX (615) 758-5859
Collected by Moseley	Site/Facility ID#:	P.O	.#: ₹	-	7.7		(015) 150-3039
Collected by (signature):	Rush? (Lab MUS	Be Notifier) Date Results Needed:	_	Arsen		=
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Packed on Ice N Y	Two Day .	100% 	Email?NoYes of FAX?NoYes	(6)	68		Template/Prelogin
Sample ID	Comp/Grab Mate	by Don	c	GC2MOD,TS	Mes East.) Hold		Shipped Via:
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RUS-0815:12		<u> </u>			 		-04
RLSS - 0914:0					$\sqrt{ }$		
BUS-0914:0.5					\uparrow		
BLSS-0914:12					Ϋ́		-05
RUS-0915:0					V -		-06
1855-0915:17					X		
K1-53 - 1014:0	1 A 1 4		र ।		X		
*Matrix: SS - SolVSolid GW - Gro	undwater WW - WasteW	ater DW - [Orinking Water OT - Other			pН	Temp
Remarks:						Flo	ow Other
Relinguished by: (Signature)	Date: Ti	ne: Re	ceived by: (Signature)	-	Samples	returned via: DUPS	
Relinquished by: (Signatur,	1 1 1 -		ceived by: (Signature)		Temp:	Bottles Rece	
Relinquished by: (Signature)	Date: Tin	ne: Re	ceived for lab by: (Signature)		2.5 Date:	Time:	pH Checked: NCF:



Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Wednesday April 04, 2007

Report Number: L286969
Samples Received: 03/16/07

Client Project:

Description: Bellingham 1

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Fom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 April 04,2007

ESC Sample # : L286969-01

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

: BLSS-1313:0 Sample ID Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.7		98.7		8	2540G	04/02/07
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	04/03/07
Arsenic Cadmium Chromium Copper Lead Nickel Zinc	72. BDL 47. 1600 250 30. 7300	5.0 1.3 2.5 5.0 1.3 5.0 7.5	72. BDL 48. 1600 250 30. 7400	5.1 1.3 2.5 5.1 1.3 5.1 7.6	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	6010B 6010B 6010B 6010B 6010B 6010B 6010B	04/02/07 04/02/07 04/02/07 04/02/07 04/02/07 04/02/07 04/02/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 April 04,2007

ESC Sample # : L286969-02

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

: BLSS-1411:0 Sample ID Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.9		98.9		8	2540G	04/02/07
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	04/03/07
Arsenic Cadmium Chromium Copper Lead Nickel Zinc	19. BDL 28. 730 72. 23. 2800	5.0 1.3 2.5 5.0 1.3 5.0 7.5	19. BDL 28. 730 73. 23. 2800	5.0 1.3 2.5 5.0 1.3 5.0 7.6	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	6010B 6010B 6010B 6010B 6010B 6010B 6010B	04/02/07 04/02/07 04/02/07 04/02/07 04/02/07 04/02/07 04/02/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 April 04,2007

ESC Sample # : L286969-03

Date Received : March 16, 2007 Description : Bellingham 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1412:0 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.9		98.9		%	2540G	04/04/07
Mercury	BDL	0.020	BDL	0.020	mg/kg	7471	04/03/07
Arsenic Cadmium Chromium Copper Lead Nickel Zinc	71. BDL 39. 1200 220 24. 5300	5.0 1.3 2.5 5.0 1.3 5.0 7.5	72. BDL 39. 1200 230 25. 5300	5.0 1.3 2.5 5.0 1.3 5.0 7.6	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	6010B 6010B 6010B 6010B 6010B 6010B	04/02/07 04/02/07 04/02/07 04/02/07 04/02/07 04/02/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L286969-01	Arsenic Cadmium Copper Lead Zinc	J5 O V V V

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision The agreement between a set of samples or between duplicate samples.

 Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)

2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125

Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118

2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 04/04/07 at 18:59:19

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L286969-01 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/06/07 00:00 RPT Date: 04/04/07 15:40

QC2MOD. Refer to L284968.
Sample: L286969-02 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/06/07 00:00 RPT Date: 04/04/07 15:40 QC2MOD. Refer to L284968.
Sample: L286969-03 Account: PORTENVTX Received: 03/16/07 09:00 Due Date: 04/06/07 00:00 RPT Date: 04/04/07 15:40 QC2MOD. Refer to L284968.

QC2MOD. Refer to L284968.

Portnoy Enviror	 omental	Alternate billing	ng information:		<u> </u>	Analysis/Co	ntainer/F	reservative		Chain of Custody Page of
1880 S Diary A	shford								Prepared by:	Pageor
Suite 660	Sinora								144 _	
									Envir	CONMENTAL
Houston Texas	77077	Report to:	Al 1111				İ		SCIEN	CE CORP.
		Email to:	Alan Hopkins							ebanon Road
Project		iah	opkins@portnoyen						Mt. Juliet,	, TN 37122
Description: WAHG	(a)	Collected	Bellingham 1					!	j ·	615) 758-5858
FAX:	Client Project #:	ESC Ke	y: portenvtx-wa							800) 767-5859 615) 758-5859
Collected by Moseley	Site/Facility ID#:	P.O.#:			. !	Ŋ			,	
Collected by (signature):	Rush? (Lab MUST (Date Results Needed	i:		ARANIC			CoCode porteny	tx (lab use only)
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Sample ID	Comp/Grab Matrix	Depth	Date, Time	Cintis	ပ္မွ	용			Remarks/Contaminant	Sample # (lab only)
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BUSS-1214:12						X	4.3,77	 -		
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BLSS-1313:0	<u> </u>				. İ	_ X	12 to 1			-01
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KUSS - 1411:0	 					X	21.5			-02
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<u> </u>			not for		\supset	3/16/	07	0900		

Portnoy Environ		Alte	ernate billin	g information	:			Anal	vsis/C	ontainer/P	reservat	ive	Oronarod him	Chain of Gustofiy Page Of O]
1880 S Diary Asi	hford												Prepared by:		
Suite 660											ļ		Envir	ONMENTAL	
Houston Texas 7	77077										į		SCIENC	CE CORP.	
Houston Texas 7	1011		ort to:	Alan H	lopkins			140						banon Road	
		Emai	aho	opkins@pc		om		2			į		Mt. Juliet,	TN 37122	
Project Description: (A) A HG			City/Sate Collected	sellingh	naM.	1		li		İ	ĺ		1	15) 758-5858	
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MANUAL CO. C. UIC. CA. CAN. C.				.l			i	}	* **						J
*Matrix: SS- Soil/Solid GW- Groui Remarks:	udwater www	vyastevyater	DW - Drin	king Water	01 - Other							pH .	Ter	•	_
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Relinquished by: (Signature)	3/0	Time:	Receiv	ved by: (Signa	ature)			15 1		Er. 🗆 Cou	rior D	+S	Condition:	(lab use only)	-
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Relinquished by: (Sign	Date:	Time:	Rece	ved for lab t	y: (Signatur	9)		• 5	Date:	1/17	Time:	نہ	pH Checked:	NCFO]`



Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Friday March 23, 2007

Report Number: L284968
Samples Received: 03/16/07

Client Project:

Description: BELLINGHAM 1

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not he sitate to call.

Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-01

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0812:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Project # :

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.7		96.7		%	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/20/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-02

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0812:0.5

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.7		97.7		ે	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-03

Date Received : March 16, 2007 Description : BELLINGHAM 1

Description : Bellindham i

Site ID: BELLINGHAM 1

Sample ID : BLSS-0813:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

RDL D.Result RDL Units Method Parameter W.Result Date Total Solids 95.9 95.9 왕 2540G 03/23/07 Arsenic BDL 5.0 BDL 5.2 mg/kg 6010B 03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:
The reported analytical results relate only to the sample submitted.
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Reported: 03/23/07 14:08 Printed: 03/23/07 16:41



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-04

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1 Sample ID : BLSS-0813:0.5

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.6		94.6		8	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.3	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-05

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0814:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.2		95.2		%	2540G	03/23/07
Arsenic	16.	5.0	17.	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-06

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0814:0.5 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	96.3		96.3		%	2540G	03/23/07
Arsenic	25.	5.0	26.	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

Project # :

ESC Sample # : L284968-07

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-0914:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.5		98.5		%	2540G	03/23/07
Arsenic	110	5.0	110	5.1	ma/ka	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-08

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-0914:0.5 Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.9		98.9		%	2540G	03/23/07
Arsenic	52.	5.0	52.	5.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-09

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1014:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Resul	t RDL	Units	Method	Date
Total Solids	98.6		98.6		%	2540G	03/23/07
Arsenic	6.1	5.0	6.2	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-10

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1014:0.5

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.1		98.1		ે	2540G	03/23/07
Arsenic	16.	5.0	16.	5.1	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-11

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1114:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	98.5		98.5		%	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-12

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1213:0

Project # :

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	97.9		97.9		&	2540G	03/23/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	03/21/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 March 23,2007

ESC Sample # : L284968-13

Date Received : March 16, 2007 Description : BELLINGHAM 1

Site ID : BELLINGHAM 1

Sample ID : BLSS-1312:0

Collected By : C. Moseley
Collection Date : 03/15/07 00:00

Project # :

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.1		95.1		%	2540G	03/23/07
Arsenic	BDL	5.0	BDL	5.2	mg/kg	6010B	03/21/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L284968-02	Arsenic	0
L284968-03	Arsenic	0
L284968-04	Arsenic	0
L284968-13	Arsenic	0

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
	Qualifier Report Information
as required l by ESC, we have results. Ear Data qualified the potential matrices incomestablished:	sample and result qualifiers as set forth by the EPA Contract Laboratory Program and by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted ave implemented ESC qualifiers to provide more information pertaining to our analytical ch qualifier is designated in the qualifier explanation as either EPA or ESC. ers are intended to provide the ESC client with more detailed information concerning I bias of reported data. Because of the wide range of constituents and variety of orporated by most EPA methods, it is common for some compounds to fall outside of ranges. These exceptions are evaluated and all reported data is valid and useable fied as 'R' (Rejected).
t: re	Definitions ne relationship of the observed value of a known sample to the rue value of a known sample. Represented by percent recovery and elevant to samples such as: control samples, matrix spike recoveries, urrogate recoveries, etc.
]	The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ) (SS)

pphenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125

15 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118

pmophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134 2-Fluorophenol

Phenol-d5 2,4,6-Tribromophenol 51-141

- Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed 03/23/07 at 16:41:21

TSR Signing Reports: 690 R5 - Desired TAT

Sample: L284968-01 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD MISC = hold fee Sample: L284968-02 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 OC2MOD Sample: L284968-03 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-04 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-05 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-06 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 OC2MOD Sample: L284968-07 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-08 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-09 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 OC2MOD Sample: L284968-10 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-11 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-12 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 QC2MOD Sample: L284968-13 Account: PORTENVTX Received: 03/16/07 18:44 Due Date: 03/23/07 00:00 RPT Date: 03/23/07 14:08 OC2MOD

Portnoy Environ	mental	Al	ternate billing	information:			454	Anal	vsis/Co	ontainer/Pr	eservative		Chain of Custody Page 2 of
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Houston Texas 7	77077	Reg	Report to: Alan Hopkins			. 7					-	CE CORP.	
		Em:	Email to:							1.00		12065 Let Mt. Juliet,	panon Road
Project 1 14 1 1			ahopkins@portnoyenv.com			om			in in				İ
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Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Monday May 07, 2007

Report Number: L291658
Samples Received: 05/03/07

Client Project:

Description: Bellingham 1 Meter Ststion

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

ESC Sample # : L291658-01

Sample ID : BLSS-0716:0

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.6		94.6		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/06/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-02

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-0815:12

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	93.2		93.2		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.1	mg/kg	6010B	05/06/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-03

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-0815:12.5

Project # :

Collected By : Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	93.0		93.0		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.1	mg/kg	6010B	05/06/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-04

Est. 1970

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion : BLSS-0816:0

Site ID : BELLINGHAM 1

Project # :

Collected By :

Sample ID

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.4		95.4		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/06/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-05

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-0816:05

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.1		95.1		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/06/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-06

Est. 1970

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1313:12 Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	95.9		95.9		%	2540G	05/05/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/06/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-07

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1313E:0

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	94.9		94.9		%	2540G	05/05/07		
Arsenic	BDL	5.0	BDL	5.3	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-08

Est. 1970

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion : BLSS-1313E:12

Site ID : BELLINGHAM 1

Project # :

Collected By :

Sample ID

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	92.6		92.6		૪	2540G	05/05/07		
Arsenic	BDL	1.0	BDL	1.1	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-09

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1410:0

Project # :

Collected By : Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	98.9		98.9		%	2540G	05/05/07		
Arsenic	24.	1.0	24.	1.0	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Sample ID

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-10

Date Received : May 03, 2007 Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

: BLSS-1410:12 Project # :

Collected By Collection Date : 04/30/07 00:00

W.Result RDL D.Result RDL Units Method Parameter Date Total Solids 97.6 97.6 왕 2540G 05/05/07 Arsenic 5.4 1.0 5.5 1.0 mg/kg 6010B 05/06/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-11

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion : BLSS-1411:12

Site ID : BELLINGHAM 1

Est. 1970

Project # :

Collected By :

Sample ID

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	97.2		97.2		%	2540G	05/05/07		
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-12

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1411N:0

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	96.8		96.8		%	2540G	05/05/07		
Arsenic	22.	1.0	22.	1.0	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-13

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1411N:0.5

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	<u> </u>		
Total Solids	94.2		94.2		%	2540G	05/05/07		
Arsenic	14.	1.0	15.	1.1	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

ESC Sample # : L291658-14

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1411N:12

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	81.7		81.7		%	2540G	05/05/07		
Arsenic	1.6	1.0	1.9	1.2	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 07,2007

Project # :

ESC Sample # : L291658-15

Date Received : May 03, 2007
Description : Bellingham 1 Meter Ststion

Site ID : BELLINGHAM 1

Sample ID : BLSS-1411N:12.5

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date		
Total Solids	78.9		78.9		४	2540G	05/05/07		
Arsenic	BDL	1.0	BDL	1.3	mg/kg	6010B	05/06/07		

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:

Attachment A List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L291658-07	Arsenic	0

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
0	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
	Qualifier Report Information
as required by most by ESC, we have impresults. Each qual Data qualifiers are the potential bias matrices incorporat	e and result qualifiers as set forth by the EPA Contract Laboratory Program and t certifying bodies including NELAC. In addition to the EPA qualifiers adopted plemented ESC qualifiers to provide more information pertaining to our analytical lifier is designated in the qualifier explanation as either EPA or ESC. e intended to provide the ESC client with more detailed information concerning of reported data. Because of the wide range of constituents and variety of ted by most EPA methods, it is common for some compounds to fall outside of . These exceptions are evaluated and all reported data is valid and useable s 'R' (Rejected).

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Definitions

Precision - The agreement between a set of samples or between duplicate samples.

Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

Control Limits (AQ)

Control Limits (AQ) (SS)

2-Fluorophenol 31-119 Nitrobenzene-d5 43-118 Dibromfluoromethane 68-128 64-125

Phenol-d5 12-134 2-Fluorobiphenyl 45-128 Toluene-d8 76-115 69-118

2,4,6-Tribromophenol 51-141 Terphenyl-d14 43-137 4-Bromofluorobenzene 79-127 61-134

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Page 17 of 17

Summary of Remarks For Samples Printed 05/07/07 at 11:58:27

TSR Signing Reports: 690 R4 - Rush: Three Day

Sample: L291658-01 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59 Refer to P209241
Sample: L291658-02 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-03 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-04 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-05 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-06 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-07 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-08 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-09 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-10 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
Sample: L291658-11 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59
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Sample: L291658-14 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59

Sample: L291658-15 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/08/07 00:00 RPT Date: 05/06/07 14:59



CCi Analytical Laboratories, Inc. 8620 Holly Drive Everett, WA 98208 Phone (425) 356-2600 (206) 292-9059 Seattle (425) 356-2626 Fax

Chain Of Custody/ Laboratory Analysis Request

ÇÇi Job#	{Laboratory Use Only

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CCI Analytical Laboratories, Inc accepts and processes this request on the terms and conditions set forth on the reverse side. By its signature hereon, Customer accepts these terms and conditions.

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

OTHER:

Received By:

Received By:

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TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis

Fuels & Hydrocarbon Analysis

Refer to P209241

Turnaround request less than standard may incur Rush Charges



CCI Analytical Laboratories, Inc. 8620 Holly Drive Everett, WA 98208 Phone (425) 356-2600 (206) 292-9059 Seattle (425) 356-2626 Fax

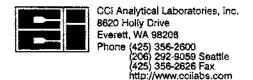
Chain Of Custody/ Laboratory Analysis Request

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(Laboratory Use Only)

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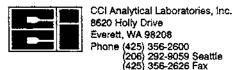
Chain Of Custody/ Laboratory Analysis Request

CCI Job# (Laboratory Use Only)

* Turnaround request less than standard may incur Rush Charges

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Chain Of Custody/ Laboratory Analysis Request

CCI Job#	(Laboratory Use Only)

6291658

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-01

Date Received : May 03, 2007
Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

Sample ID : BLSS-1409:0

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	99.0		99.0		%	2540G	05/11/07
Arsenic	12.	1.0	12.	1.0	mg/kg	6010B	05/10/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-02

Est. 1970

Date Received : May 03, 2007
Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

Sample ID : BLSS-1409:12 Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.6		94.6		90	2540G	05/11/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/10/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Sample ID

12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-03

Collection Date : 04/30/07 00:00

Date Received : May 03, 2007 Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

: BLSS-1510:0 Project # :

Collected By

W.Result RDL D.Result RDL Units Method Parameter Date Total Solids 95.4 95.4 왕 2540G 05/11/07 Arsenic 1.5 1.0 1.5 1.0 mg/kg 6010B 05/10/07

BDL - Below Detection Limit RDL - Detection Limit- Estimated Quantitation Limit(EQL) Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-04

Date Received : May 03, 2007
Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

Sample ID : BLSS-1510:12

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	81.9		81.9		%	2540G	05/11/07
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	05/10/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-05

Date Received : May 03, 2007
Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

Sample ID : BLSS-1511:0 Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	94.5		94.5		%	2540G	05/11/07
Arsenic	BDL	1.0	BDL	1.0	mg/kg	6010B	05/10/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:



Tax I.D. 62-0814289

REPORT OF ANALYSIS

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660 Houston, TX 77077 May 11,2007

ESC Sample # : L292475-06

Date Received : May 03, 2007
Description : Bellingham 1 Meter Station

Site ID : BELLINGHAM 1

Est. 1970

Sample ID : BLSS-1511:12

Project # :

Collected By :

Collection Date : 04/30/07 00:00

Parameter	W.Result	RDL	D.Result	RDL	Units	Method	Date
Total Solids	82.3		82.3		%	2540G	05/11/07
Arsenic	BDL	1.0	BDL	1.2	mg/kg	6010B	05/10/07

BDL - Below Detection Limit
RDL - Detection Limit- Estimated Quantitation Limit(EQL)
Note:

Summary of Remarks For Samples Printed 05/11/07 at 15:14:39

TSR Signing Reports: 690 R4 - Rush: Three Day

Sample: L292475-01 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658. Sample: L292475-02 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658. Sample: L292475-03 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658. Sample: L292475-04 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658. Sample: L292475-05 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658. Sample: L292475-06 Account: PORTENVTX Received: 05/03/07 09:00 Due Date: 05/11/07 00:00 RPT Date: 05/11/07 14:27 QC2MOD. Refer to L291658.



12065 Lebanon Rd. Mt. Juliet, TN 37122 (615) 758-5858 1-800-767-5859 Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Alan Hopkins Portnoy Environmental 1880 S Dairy Ashford Ste 660

Houston, TX 77077

Report Summary

Friday May 11, 2007

Report Number: L292475 Samples Received: 05/03/07

Client Project:

Description: Bellingham 1 Meter Station

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Tom Mellette, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487 GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140 NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233 AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, WA - C1915

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CCI Analytical Laboratories, Inc. 8620 Holly Drive Everett, WA 98208 Phone (425) 356-2600 (206) 292-9059 Seattle

Chain Of Custody/ Laboratory Analysis Request

CCI Job#	(Laboratory Use Only)
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(425) 356-4 http://www	2626 Fax .ccilabs.coπ	1															Date.				Page.	<u> </u>	0)f <u>-</u>			
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CCI Analytical Laboratories, Inc. 8620 Holly Drive Everett, WA 98208 Phone (425) 356-2600 (206) 292-9059 Seattle

Chain Of Custody/ Laboratory Analysis Request

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ATTACHMENT C

PERFORMANCE SAMPLE LABORATORY ANALYTICAL REPORTS





ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 e-mail: fbi@isomedia.com

August 7, 2012

Clint Moseley, Project Manager Portnoy Environmental 1414 W Sam Houston Pkwy N, Suite 170 Houston, TX 77043

RE: Bellingham MS, F&BI 208065

Dear Mr. Moseley:

Included are the results from the testing of material submitted on August 4, 2012 from the Bellingham MS, F&BI 208065 project. There are 37 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Eric Koltes, Tim Jenkins, Alan Hopkins

PRT0807R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 4, 2012 by Friedman & Bruya, Inc. from the Portnoy Environmental Bellingham MS, F&BI 208065 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Portnoy Environmental
208065-01	BL-1009W:0
208065-02	BL-1009W:12
208065-03	BL-1009:12
208065-04	BL-1012:12
208065-05	BL-1013:12
208065-06	BL-0914:12
208065-07	BL-0913:12
208065-08	BL-0912:12
208065-09	BL-0814:12
208065-10	BL-0815:12
208065-11	BL-1110:12
208065-12	BL-1109:12
208065-13	BL-1111:12
208065-14	BL-1112:12
208065-15	BL-1113:12
208065-16	BL-1211:12
208065-17	BL-1212:12
208065-18	BL-1410:12
208065-19	BL-1412:12
208065-20	BL-1411N:12
208065-21	BL-0812/0911:6
208065-22	BL-0909/0910:6
208065-23	BL-1209/1210:6
208065-24	BL-1310/1409:6
208065-25	BL-1510/1511:6
208065-26	BL-1312/1411:6
208065-27	BL-1313:12
208065-28	BL-0915/1014:6
208065-29	BL-0915/1014:6.5
208065-30	BL-1114/1213:6
208065-31	BL-1114/1213:6.5

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1009W:0 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-01

 Date Analyzed:
 08/06/12
 Data File:
 208065-01.041

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.71

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1009W:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Date Extracted: 08/06/12 Lab ID: 208065-02
Date Analyzed: 08/06/12 Data File: 208065-02.042

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.62

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1009:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-03 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-03.043

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 6.31

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1012:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-04 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-04.044

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 89 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1013:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-05

 Date Analyzed:
 08/06/12
 Data File:
 208065-05.045

 Matrix
 Soil
 Instrument:
 ICBMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.59

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0914:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Date Extracted: 08/06/12 Lab ID: 208065-06

Date Analyzed: 08/06/12 Data File: 208065-06.046

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0913:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-07 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-07.047

Matrix: Instrument: ICPMS1 Soil Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 86 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.97

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0912:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-08 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-08.048

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 78 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0814:12 Client: Portnoy Environmental

Date Received: Project: Bellingham MS, F&BI 208065 08/04/12

Lab ID: 08/06/12 208065-09 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-09.049

Matrix: Instrument: ICPMS1 Soil Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0815:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-10

 Date Analyzed:
 08/06/12
 Data File:
 208065-10.050

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 79 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.33

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1110:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-11

 Date Analyzed:
 08/06/12
 Data File:
 208065-11.052

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Instrument: ICPI

Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.51

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1109:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-12

 Date Analyzed:
 08/06/12
 Data File:
 208065-12.053

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPMS Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1111:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-13

 Date Analyzed:
 08/06/12
 Data File:
 208065-13.056

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.99

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1112:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-14

 Date Analyzed:
 08/06/12
 Data File:
 208065-14.059

 Matrice
 Scil
 Lastroperant
 LCDMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

100 multin

Analyte: Concentration mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1113:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-15

 Date Analyzed:
 08/06/12
 Data File:
 208065-15.060

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: Soil Instrument: ICPM Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 80 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1211:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-16 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-16.061 Matrix: Instrument: ICPMS1 Soil

Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 69 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1212:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-17 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-17.063 Matrix: Instrument: ICPMS1 Soil

Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 77 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1410:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-18

 Date Analyzed:
 08/06/12
 Data File:
 208065-18.064

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tradium

Indium 71 60 125

3.86

Concentration

Analyte: mg/kg (ppm)

Arsenic

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1412:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-19

 Date Analyzed:
 08/06/12
 Data File:
 208065-19.065

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: Soil Instrument: ICPMS

Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1411N:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-20

 Date Analyzed:
 08/06/12
 Data File:
 208065-20.066

 Matrice
 Scil
 Lastromerate
 ICPMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 74 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0812/0911:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-21

 Date Analyzed:
 08/06/12
 Data File:
 208065-21.067

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0909/0910:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-22

 Date Analyzed:
 08/06/12
 Data File:
 208065-22.068

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium: 125

Indium 80 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1209/1210:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-23

 Date Analyzed:
 08/06/12
 Data File:
 208065-23.069

 Matrix
 Soil
 Instrument:
 ICBMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1310/1409:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-24

 Date Analyzed:
 08/06/12
 Data File:
 208065-24.070

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: Soil Instrument: ICPMS

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit:

Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1510/1511:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-25

 Date Analyzed:
 08/06/12
 Data File:
 208065-25.071

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 80 60 125

ndidiii 00 00

Analyte: Concentration mg/kg (ppm)

Arsenic 5.74

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1312/1411:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-26

 Date Analyzed:
 08/06/12
 Data File:
 208065-26.072

 Matrix
 Soil
 Instrument:
 ICBMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1313:12 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-27

 Date Analyzed:
 08/06/12
 Data File:
 208065-27.074

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: Soil Instrument: ICPMS

Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0915/1014:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-28

 Date Analyzed:
 08/06/12
 Data File:
 208065-28.075

 Matrix:
 Soil
 Instrument:
 ICPMS1

Matrix: Soil Instrument: ICPMS Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Limit: Tadium: 125

Indium 67 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 5.94

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-0915/1014:6.5 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-29

 Date Analyzed:
 08/06/12
 Data File:
 208065-29.076

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: Soil Instrument: ICPM operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 68 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.41

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1114/1213:6 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

Lab ID: 08/06/12 208065-30 Date Extracted: Date Analyzed: 08/06/12 Data File: 208065-30.077

Matrix: Instrument: ICPMS1 Soil Units: mg/kg (ppm) Operator: btb

Upper Lower **Internal Standard:** Limit: % Recovery: Limit:

Indium 72 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.71

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BL-1114/1213:6.5 Client: Portnoy Environmental

Date Received: 08/04/12 Project: Bellingham MS, F&BI 208065

 Date Extracted:
 08/06/12
 Lab ID:
 208065-31

 Date Analyzed:
 08/06/12
 Data File:
 208065-31.078

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit:

Indium 74 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.89

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Portnoy Environmental

Date Received: Not Applicable Project: Bellingham MS, F&BI 208065

Date Extracted: 08/06/12 Lab ID: I2-515 mb
Date Analyzed: 08/06/12 Data File: I2-515 mb.008
Matrix: Soil Instrument: ICPMS1

Matrix: Soil Instrument: ICPMS Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Portnoy Environmental

Date Received: Not Applicable Project: Bellingham MS, F&BI 208065

Date Extracted: 08/06/12 Lab ID: I2-516 mb
Date Analyzed: 08/06/12 Data File: I2-516 mb.054
Matrix: Soil Instrument: ICPMS1

Matrix: Soil Instrument: ICPMS1 Units: mg/kg (ppm) Operator: btb

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

ENVIRONMENTAL CHEMISTS

Date of Report: 08/07/12 Date Received: 08/04/12

Project: Bellingham MS, F&BI 208065

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 208047-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	69.1	75 b	105 b	56-125	33 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	98	79-112

ENVIRONMENTAL CHEMISTS

Date of Report: 08/07/12 Date Received: 08/04/12

Project: Bellingham MS, F&BI 208065

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 208065-13 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	2.99	98 b	102 b	56-125	4 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	96	79-112

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Portnoy Environmental	nental	Alte CM	Atternate billing in Direct Bill to Mark Nelson	Alternate billing information: Direct Bill to Mark Nelson			nalvsis/Container/Preservative	Itainer/Press	ervative	Prepared by:	BZ	Chain of Custody
: *:		Repo	Report to: Alan	Alan Hopkins and NW TEAM	NW TEA					E X		
		Email to:		Ahopkins@pei-tx.com	ei-tx.com	Y61 1 S				K		
Project Description ALLIE BLAN S	/A 5	·	City/Sate Collected			Sinct					10110	
	Client Project #:			,						, \+	7000	M
FAX:	OF LINE II	THE STATE OF THE S		PORTEN	PORTENVTX- WAHG							7.00-07.
Collected by: ALAN HOPLING	Site/Facility ID#:		P.O.#:			7.41						
*	Rush? (Lab MUST Be Notified)	NUST Be N	otified)	Date Results Needed:		S				Calcula je	evitte jasajaen	
	Next Day Two Day		100%	Email?No_	Yes Yes	on and the second				descriptions	rie login	
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	Cntrs				Remarks/Contaminant		Sample # (lab only)
BL-10094:0	Capp S	2005		83/2								
1009W:12				,			į					
1009:12												
10/2:12									100			É
10/3:12						`	•					
6/14/12												
09/3:12			<u> </u>			×						
09/2:/2						X					1.11	
A 68/4/17	E	(C	<u>_</u>							
*Matrix: SS - Soil/Solid GW - Groundwater		steWater I	DW - Drinkir	ww - WasteWater DW - Drinking Water OT - Sthetples received	-Simples	received a	at	ෆ්	pH _		Temp	
Remarks:									Flow_		Other	
Relinquished by: Signature)	Pate:	Time:	Receive	Received by: (Signature		8/4/12	Samples □ FedEx	returned via: □ Courier	UPS	Condition		ele secolo
Relinquished W. (\$400)	Date:	Time:	Received	Received by: (Signature	7							
Relinquished by: (Signatural)	Date:	Time:										
			Control of the Control	Branch Committee of the Real of the	The second second second	The state of the s		Control of the Contro		The state of the s	The second secon	State of the last

			Date: Time:	Relinquished by: (Signature)
		Received by: (Signature)	Date: Time:	Relinquience by: 18is
(e) indifform	Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☐	Received by: (Signature) 8-4-12	Date: Time: 8:3-12 164	keinquished in Classification
Other	Flow_			
	12 °C	Samples received at		įγ <u>.</u>
Temp			GW - Groundwater WW - WasteWater	
			U U	W 14/01/12
				12/2/12
				1211;12
			111111111111111111111111111111111111111	11131/2
	*			1/1/2/12
Sup.			The state of the s	1/1/:/2
				109/12
				1/01/2
		8342	GRAB SOI	11.5180-79
Remarks/Contaminant Sample # (lab only)		Depth Date Time	Comp/Grab Matrix*	Sample ID
Sitypeonyes		FAX?NoYes		Packed on Ice N/ Y
		50% Email?No_	Next Day	
		Be Notified) Date Results Needed:	Rush? (Lab MUST Be Notified)	Collected by (signature):
		P.O.#:	Site/Facility ID#:	Collected by:
1444 (010) 150 54	entropy (PORTENVIX- WAHG		FAX:
			Client Project #:	Phone:
Photo 150 500		City/Sate Collected	W	Project Description:
		Email to: Ahopkins@pei-tx.com		
		Report to: Alan Hopkins and NW TEAM		
PANAL COLOR OF THE PANAL COLOR O		6 <u>23</u> (V(6		
		10		
Prepared by: BZY	2/40/2034 PM	Mark Nelson		30005
Chain of Custody Page 2 of 2	Analysis/Container/Preservative	Alternate billing information:	omental	Portnov Environmental

Portnov Environmental	Dental	Alternate b	Alternate billing information:	Analy	Analysis/Container/Preservativ	0	Chain of Custody
108068		Main Meison	I GOOL)EDÖTT	38/104/12		67
		Report to:	Alan Hopkins and NW TEAM				
		Email to:	Ahopkins@pei-tx.com	27.0			X X X X X X X X X X
Project Description: Bellingham MS	am MS	City/Sate Collected				2	858
	Client Project #: Bellingham	п	PORTENVTX- WAHG	HG AH			And the same of th
Collected by: ALAN HOREK	Site/Facility ID#:	P.O.#:		ep(e)(e)			
Collected by (signature):	Rush? (Lab MU	Bez) Date Results Needed:	April 1970 per Carlos		ুৰ্ভত্তিৰ চুত্তিছ	SII 0[0])
Packed on Ice N	Next Day Two Day		Email?NoYes FAX?NoYes	and the second second second second		silippadavisvati	
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14/11/21/2			>				
9,11150/ 8180							
0969/0910:6		***************************************					
6,016/1600	***************************************						
1310/1409:6				S. S.			
9:114/16/16							
13/31/2	V V						
*Matrix SS-Soil/Solid GW-Ground	water ww - Waste	Water DW - Dr	GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other		•	pHTemp	p
Remarks:	\		<u>ې</u> ۵	mples received	22 °C	Flow Other	
Relinquished by: 319 Julie	Date:	Time: Rea	Received by: (Signature)	5/4/2 1	Samples returned via: ☐ UPS☐ FedEx☐ Courier☐	S (Sondition)	(B) USSON
telinquished by: (Si			Received by: (Signature)		giro	2000 T	
telinquished by: (Signate)	Date:	Time:			300 M	y = 3 (D&) A	Š
			the second of th		The second secon		THE RESERVE OF THE PERSON NAMED IN

	Alternate billing information:	Analysis/Container/Preservative	Chain of Custody
78%	Direct Bill to Mark Nelson	Prepared by:	Page # of #
	Report to: Alan Hopkins and NW TEAM		-ebanna kead
	Email to: Ahopkins@pei-tx.com	0.62	
Project Description: Bellingham MS	City/Sate Collected	Phone	38.88
Phone: Client Project #: FAX: Bellingham		need	倜儻
Collected by: Site/Facility ID#:	P.O.#:	ples	
		- 110	
The linear	Same Day200% Date Results Needed:	्र रहे	ivo (latinasejany)
Packed on Ice N (Y)Two Day	100% Email?NoYes	i emplater levoli	
Sample ID Comp/Grab	Matrix* Depth Date Time Cntrs	Remarks/Contaminant	t Sample # (lab only)
BL-0915/04.6			
59141014162			
9:814111			<i>\$</i>
114 //13/3/6/5			
Remarks:	teWater DW - Drinking Water OT - OtherSamp	es received at A2 °C pH	Temp
delinquished by: Standarfie)		Flow	Other
	Received by: (Signature)	Samples returned via: DPS Condition	((4,000,000))
elinquisber by: (Si	Receive	Total	
elinquished by: (Sig., 2) Date:	Time: ** A Service Servi		

304

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Bradley T. Benson, B.S. Kurt Johnson, B.S.

3012 16th Avenue West Seattle, WA 98119-2029 TEL: (206) 285-8282 e-mail: fbi@isomedia.com

August 8, 2012

Clint Moseley, Project Manager Portnoy Environmental 1414 W Sam Houston Pkwy N, Suite 170 Houston, TX 77043

RE: Bellingham PO 538359-RXG99, F&BI 208099

Dear Mr. Moseley:

Included are the results from the testing of material submitted on August 8, 2012 from the Bellingham PO 538359-RXG99, F&BI 208099 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures

c: Eric Koltes, Tim Jenkins, Alan Hopkins

PRT0808R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 8, 2012 by Friedman & Bruya, Inc. from the Portnoy Environmental Bellingham PO 538359-RXG99, F&BI 208099 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Portnoy Environmental
208099-01	BLSS-0714-0715:6
208099-02	BLSS-0714-0812:6
208099-03	BLSS-0716-0816:6

All quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BLSS-0714-0715:6 Client: Portnoy Environmental

Date Received: 08/08/12 Project: Bellingham PO 538359-RXG99, F&BI 208099

 Date Extracted:
 08/08/12
 Lab ID:
 208099-01

 Date Analyzed:
 08/08/12
 Data File:
 208099-01.024

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 88 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.54

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BLSS-0714-0812:6 Client: Portnoy Environmental

Date Received: 08/08/12 Project: Bellingham PO 538359-RXG99, F&BI 208099

 Date Extracted:
 08/08/12
 Lab ID:
 208099-02

 Date Analyzed:
 08/08/12
 Data File:
 208099-02.025

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 83 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 3.40

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: BLSS-0716-0816:6 Client: Portnoy Environmental

Date Received: 08/08/12 Project: Bellingham PO 538359-RXG99, F&BI 208099

 Date Extracted:
 08/08/12
 Lab ID:
 208099-03

 Date Analyzed:
 08/08/12
 Data File:
 208099-03.026

 Matrix:
 Soil
 Instrument:
 ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.00

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID: Method Blank Client: Portnoy Environmental

Date Received: Not Applicable Project: Bellingham PO 538359-RXG99, F&BI 208099

Date Extracted: 08/08/12 Lab ID: I2-519 mb
Date Analyzed: 08/08/12 Data File: I2-519 mb.023
Matrix: Soil Instrument: ICPMS1

Units: mg/kg (ppm) Operator: btb

Lower Upper Internal Standard: % Recovery: Limit: Limit: Indium 87 60 125

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

ENVIRONMENTAL CHEMISTS

Date of Report: 08/08/12 Date Received: 08/08/12

Project: Bellingham PO 538359-RXG99, F&BI 208099

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 208078-05 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	5.65	94 b	99 b	56-125	5 b

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	90	79-112

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- A1 More than one compound of similar molecule structure was identified with equal probability.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte indicated may be due to carryover from previous sample injections.
- d The sample was diluted. Detection limits may be raised due to dilution.
- ds The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.
- dv Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.
- fb Analyte present in the blank and the sample.
- fc The compound is a common laboratory and field contaminant.
- $hr\ \hbox{- The sample and duplicate were reextracted and reanalyzed.} \ RPD\ results\ were\ still\ outside\ of\ control\ limits. \ The\ variability\ is\ attributed\ to\ sample\ inhomogeneity.}$
- ht Analysis performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.
- j The result is below normal reporting limits. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.
- jr The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the compound indicated is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received in a container not approved by the method. The value reported should be considered an estimate.
- pr The sample was received with incorrect preservation. The value reported should be considered an estimate.
- $ve-Estimated\ concentration\ calculated\ for\ an\ analyte\ response\ above\ the\ valid\ instrument\ calibration\ range.$
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Prepared by: ** ENVIRON SCIENCE 12065 Leban Mt. Juliet, TN Phone (615) Phone				_							1	κ, ι	N	<u> </u>															
Time: Teaching Mater Of -Other. Prepared by:	Relinquished by: (Signature)	Relinguished by: \Signamin	Relipquished by: (Signature)	Remarks: 4 HS A	SS - SoiVSolid			Annual Control of the				155-0716/	LISO-6714/0812	1410-	Sample ID	Z		Collected by (signature):	Collected by Alan Hopkins	FAX: 832-295-6404	tion:	1971		1100001, 120	Houston TX 77	Suite H14	12455 Westpark	Portnoy Environ	10000
Prepared by:	Date:	Date:		1	1					Grab		Grab	Grab	Grab	Comp/Grab	- 5	 	_	Site/Facility ID:	Olicin Library	Client Project			1	082		Dr.	mental	
Prepared by:	Time:	Time:	Time:	-		SS	SS	SS	SS	SS	SS	SS	SS	SS	Matrix*	:		b MUST Be No	#: Mt.	Kellinguis.	INS LANA	62.	Email	X-epor			*	Žį Žį	
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Prepared by: ** ENVIRON SCIENCE 12065 Lebar Mt. Juliet, TN Phone (815) Phone (815) Phone (815) Phone (815) Phone (815) Phone (800) FAX (615) ** ENVIRON SCIENCE 12065 Lebar Mt. Juliet, TN Phone (800) FAX (615) Phone (800) FAX (615) ** ENVIRON CoCode portervix Template/Prelogin	ature)		\bowtie		Jer	_								-					399	(-WAH	hak		com	_					
Prepared by: ** ENVIRON SCIENCE 12065 Leban Mt Juliet, TN Phone (615) Phone (615) Phone (816) FAX (615) Cocode portenvix Phone (800) FAX (615) Cocode portenvix Cocode portenvix Phone (800) FAX (615) Remarks/Contaminant X X X X Y PH Femples returned via: UPS Flow Other Samples returned via: UPS Flow Other Samples returned via: UPS Flow Other Samples Received: PH Checkedd: N		4130am	/c/12	/		2.50					***	<u> </u>	×		PCI	Bs			*	ត						3.45	og tr	Ana	
Prepared by: ** ENVIRON SCIENCE 12065 Leban Mt. Juliet, TN Phone (615) Phone	Date:	Temp:	Sampl Fed									10.42			Cad	dmiu	n :	•										alvsis/C	
Prepared by: ** ENVIRON SCIENCE 12065 Leban Mt. Juliet, TN Phone (800) FAX (615) Phone (800) FAX (615) ** CoCode portenvtx Template/Prelogin Shipped Via: ** Condition: Other Condition: ** pH Checked: NA ** NA ** PH Checked: NA ** PH			es returned v Ex □ Courie			×	×	×	×	×	×	×	×	×			MOI) an	d ED	D								ntainer/Pres	1110
Prepared by: ENVIRON SCIENCE 12065 Leban Mt. Juliet, TN Phone (800) FAX (615) Phone late/Prelogin Shipped Via: Template/Prelogin Temp Other Condition:		ottles Received	ia: □UPS yr □	Flow_	pH _									. 4 4	НО	LD			is:	33.311,2538	1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	4 31733			1 th		::::W	senzativo	0
	hH Checked;		Condition:	Ot	Te										Remarks/Contaminant	Shipped Via:	Template/Prelogin	CoCode portenv		FAX (Phone (Phone (Mt. Juliet	12065 L	SCIEN	# ENVIR	Prepared by:		0/17
FAL FAL P. Se only) lab only) lab only)		And the state of t	(lab use only)	her	dux				e de la constante de la consta	racini Track		Salph Carago			Sample # (lab only)			(lab us		615) 758-5859	800) 767-5859	615) 758-5858	, TN 37122	ebanon Road	CE CORP.	CONMENTAL		Page of	+

ATTACHMENT D

SITE PHOTOGRAPHS





BELLINGHAM I METER STATION VCP NO.: NW1749



1. Looking at initial excavation.



2. Looking at initial excavation.

BELLINGHAM I METER STATION VCP NO.: NW1749



3. Looking at restored site inside building.



4. Looking at restored site outside building.

ATTACHMENT E

WASTE DISPOSAL DOCUMENTATION





NON-HAZARDOUS	Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tra	cking Number
WASTE MANIFEST			877-926-2462	WAR-2	
5. Generator's Name and Ma NORTHWEST PIP 4175 BRITTON RO BELLINGHAM, WA	ELINE GP- BELLINGHAM #1		Generator's Site Address (if different	than mailing addres	s)
Generator's Phone: 713				U.S. EPA ID N	umber
6. Transporter 1 Company N	RINE CLEANING, INC				38479440
7. Transporter 2 Company N				U.S. EPA ID N	
7. Harisportor 2 dompany 10					
8. Designated Facility Name Hillsboro Landfill, Id 3265 S.E. Minter E Hillsboro, OR 971:	ridge Road 23			U.S. EPA ID N	umber
Facility's Phone: 503-493-	-7854		10. Containers	11. Total	12. Unit
9. Waste Shipping Na	ame and Description		No. Type	Quantity	Wt./Vol.
1.METAL CONT	AIMINATED SOILS		001 CM	15	Y
2.					
3.					
4.					
	tions and Additional Information				
marked and labeled/plac	arded, and are in all respects in proper co	ondition for transport according to applica	able international and national gover	ive by the proper shipnmental regulations.	oping name, and are classified, packaged,
Generator's/Offeror's Printer	d/Typed Name	Sign	nature Bu		Month Day Ye
Edwar 15. International Shipments					18 100 1
	Import to U.S.	Export from U	J.S. Port of entry/exit: Date leaving U.S.:		
Transporter Signature (for e 16. Transporter Acknowledge	ment of Receipt of Materials		Date leaving 0.0.		
Transporter 1 Printed/Typed	Chyoman	1	Kathy Chy	gnan	Month Day Y S 6 2 Month Day Y
Transporter 2 Printed/Typed	Name /	Sig	nature /		
17. Discrepancy					
17a. Discrepancy Indication	Space Quantity	Туре	Residue	Partial Reje	ection Full Rejection
17b. Alternate Facility (or G	enerator)		Manifest Reference Number:	U.S. EPA ID N	Number
The state of the s					
Facility's Phone:			7		
17c. Signature of Alternate	Facility (or Generator)				Month Day
18. Designated Facility Own	ner or Operator: Certification of receipt of	materials covered by the manifest excep	t as noted in Item 17a		
18. Designated Facility Owr Printed/Typed Name	ner or Operator: Certification of receipt of		it as noted in Item 17a nature		Month Day Y



3205 SE Minter Bridge Hillsboro, OR, 97123

Ticket* 1295111

Ph: (503)-640-9427

920 Comments Generator Destination State Waste Code Route Manual Ticket# Profile Manifest Hauling Ticket# Payment Type Credit Account Ticket Date Customer Name FORTNOY ENVIRONMENTAL INC FOR Carrier 08/09/2012 07:41:38 08/09/2012 08:02:52 08/09/2012 OR-NORTHWEST PIPELINE OF BELL NORTHWEST PIPELINE OF BELLINGHOM 1 MS 185791WA (METAL CONTAMINATED SOILS) 105791WA Outbound Inbound 2 SCA Te Z T Operator Grid Gen EPA ID Driver Container Billing # Check# Vehicle# Ke ith FO W WEST COAST MARINE WEST COAST MARINE 0002703 Inbound Zet jare. Gross Tons Volume 34660,16 41020 lb 75680 15

Product

S

Oty UOM Rate Tax

Amount

Origin

Consumer Comments?

We want

Please call

7

1	NON-HAZARDOUS	Generator ID Number	2. Page 1 of	3. Emergency Respons	se Phone	4. Waste Ti	racking Numb	per
1	WASTE MANIFEST		001	877-926-2462			25886	
	5. Generator's Name and Ma NORTHWEST PIPI 4175 BRITTON RC BELLINGHAM, WA	ELINE GP- BELLINGHAM #1 M DAD	S	Generator's Site Addre	ess (if different t	han mailing addre	ess)	
	Generator's Phone: 713-					U.S. EPA ID	Number	
	6. Transporter 1 Company Na	ame RINE CLEANING,INC				1	Number 98847944	0
	7. Transporter 2 Company Na					U.S. EPA ID		
	Transports 2 company to							
	Designated Facility Name Hillsboro Landfill, Ir 3265 S.E. Minter B Hillsboro, OR 9712	ridge Road				U.S. EPA ID	Number	
	Facility's Phone: 503-493-	7834		10.00	atala ass		T I	
	9. Waste Shipping Na	me and Description		No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
GENERATOR -	1METAL CONT	AIMINATED SOILS		001	CM	15	yas	
- GENE	2.							
	3.							
	4.							
	14. GENERATOR'S/OFFER marked and labeled/plac Generator's/Offeror's Printed	OR'S CERTIFICATION: I hereby declare that arded, and are in all respects in proper condit	the contents of this consignment on for transport according to appl	are fully and accurately of icable international and nignature	described above	e by the proper si	nipping name,	Month Day Year
1	Edward	Ba 54	1	Enne	Ba			8 07 12
INT'L		Import to U.S.	Export from		entry/exit:			
		xports only):		Date le	eaving U.S.:			
TER	16. Transporter Acknowledge Transporter 1 Printed/Typed		9	ignaturė	-			Month Day Year
TRANSPORTER	Transporter 2 Printed/Typed	Chaman	1	Kath (Cha	mu	7	S 7 /2 Month Day Year
A	17. Discrepancy							
	17a. Discrepancy Indication	Space Quantity	Туре	Residue Manifest Reference	ce Number:	Partial Re	ejection	Full Rejection
TI	17b. Alternate Facility (or Ge	enerator)				U.S. EPA ID	Number	
ACIL	Facility's Phone:					1		
TED F	Facility's Phone: 17c. Signature of Alternate F	Facility (or Generator)	1					Month Day Year
DESIGNATED FACILITY								
1	10 Deck 11 5 777 5	0-15-1-1	dala sougrad by the second of	ont on noted in them 47-				
	18. Designated Facility Own Printed/Typed Name	er or Operator: Certification of receipt of mate		signature				Month Day Year
1			+					



* 3205 SE Minter Bridge Hillsboro, DR, 97123 Ph: (503)-640-9427

NON-HAZAF WASTE MAI		Generator ID Number	2. Page 001		rgency Respon 926-2462	nse Phone	The second secon	racking Numb					
5. Generator's Na	me and Mailir	ng Address LINE GP- BELLINGHAM #1 N	1S	Generator's Site Address (if different than mailing address)									
4175 BRIT BELLINGH		\D											
Generator's Phone													
6. Transporter 1 C	ransporter 1 Company Name U.S. EPA ID Number VEST COAST MARINE CLEANING, INC WAD9884794												
7. Transporter 2 C						9.5	U.S. EPA ID			75.00			
8. Designated Face 3265 S.E. M							U.S. EPA ID	Number					
Hillsboro, C	R 97123)											
Facility's Phone:	03-493-78	834							3-18				
9. Waste S	hipping Name	e and Description				ntainers	11. Total Quantity	12. Unit Wt./Vol.					
1.META	L CONTA	IMINATED SOILS			No.	Type	-	Y.d-					
							15	yas					
			4										
2.													
3.													
4.													
14. GENERATOR	'S/OFFEROR	e'S CERTIFICATION: I hereby declare that led, and are in all respects in proper condit	the contents of this consignm	ent are fully a	nd accurately d	described above	by the proper sh	ipping name, a	and are classified, pa	ickaged,			
Generator's/Offero	or's Printed/Ty	ped Name	ion for transport according to a	Signature		Total Services	neritai regulations.		Month Da	ay Ye			
Edwa	nrol	B454		Tell	1/	un			8 8	112			
15. International S		Import to U.S.	Export f	rom U.S.		entry/exit:							
Transporter Signa 16. Transporter Ad		rts only): nt of Receipt of Materials			Date le	aving U.S.:							
Transporter 1 Prin	ted/Typed Na	Λ:	arte teg	Signature		01			Month Da				
Transporter 2 Prin) U	Chapman		Signature	the	Cr	wom	an	8 8				
Transporter 2 Filin	teu/Typeu Na	line		Signature		'	1		Month Da	ay Ye			
17. Discrepancy													
17a. Discrepancy	Indication Spa	ace Quantity	Туре	[Residue		Partial Rej	ection	Full R	ejection			
17b. Alternate Fac	cility (or Gener	rator)		Mai	nifest Reference	e Number:	U.S. EPA ID I	Number					
Facility's Phone:	Altornata Es-	lity (or Congretor)	4 - 1						Ma-th D				
17c. Signature of	niemale Faci	ity (or denerator)							Month Da	ay Y			
10 Docionated F	oility Owner	or Operator Codification of accept of	into account to the control	wasat	d in Here 17								
18. Designated Fa Printed/Typed Nar		or Operator: Certification of receipt of mate	ials covered by the manifest e	Signature	u in item 1/a				Month Da	y Y			
										1			



Hillsboro Landfill, Inc 3205 SE Minter Bridge Hillsboro, OR, 97123 Ph: (503)-640-9427

Original Ticket# 1295001

25886-1

Justomer Name PORTNOY ENVIRONMENTAL INC POR Carrier WEST COAST MARINE WEST COAST MARINE icket Date Volume

08/08/2012 Vehicle# 144

Container 'ayment Type Credit Account lanual Ticket# Driver ken

lauling Ticket# Check#

bute Billing # 0002703

itate Waste Code Gen EPA ID N/A lanifest

estination Grid

105791WA 105791WA (METAL CONTAMINATED SOILS) rofile

enerator OR-NORTHWEST PIPELINE GP BELL NORTHWEST PIPELINE GP BELLINGHAM 1 MS

Time Scale Operator Inbound Gross 75420 lb 38940 lb 08/08/2012 08:51:56 Tare Inbound 2 aja Net 36480 lb ut 08/08/2012 09:23:57 Outbound wef 18.24 Tons

omments

Consumer Comments?

roduct LD% Amount Origin

A	NON-HAZARDOUS WASTE MANIFEST	Generator ID Number	2. Pag 001		mergency Respons 7-926-2462	e Phone	4. Waste Tracking Number WAR-25886								
	4175 BRITTON ROA BELLINGHAM, WA	n Address P- BELLINGHAM #1 N AD 305-2994	1S	Gen	erator's Site Addres	ss (if different t	han mailing addre	ess)							
	6. Transporter 1 Company Nar						U.S. EPA ID	Number 98847944	0						
	7. Transporter 2 Company Nar						U.S. EPA ID								
	Designated Facility Name a	nd Site Address					U.S. EPA ID	Number							
	3265 S.E. Minter Br Hillsboro, OR 9712 503-493-7	3					1								
	Facility's Phone:				10. Cont	tainers	11. Total	12. Unit							
	9. Waste Shipping Nam	AIMINATED SOILS			No.	Type	Quantity 15	Wt./Vol.							
GENERATOR							2								
- GENE	2.														
	3.														
	0.														
	4.														
	13. Special Handling Instruction														
	PÉRMIT# 105791	ERG# N/A		DROP	вох# 32	27-2	0								
	14. GENERATOR'S/OFFERO marked and labeled/placar	R'S CERTIFICATION: I hereby declare that ded, and are in all respects in proper condi	t the contents of this consig tion for transport according	nment are ful	ly and accurately de international and na	escribed above	e by the proper st	nipping name,	and are classifie	ed, packag	ed,				
	Generator's/Offeror's Printed/	Typed Name		Signatur		,			Month 8	Day	Year				
INT'L -	15. International Shipments	Import to U.S.	Expo	rt from U.S.		entry/exit:									
	Transporter Signature (for exp 16. Transporter Acknowledgm				Date lea	aving U.S.:									
TRANSPORTER	Transporter 1 Printed/Typed N	Chapman		Signatur	achy	Ch	apm	an	Month S	Day Day	Year /2 Year				
TRA							196								
1	17. Discrepancy 17a. Discrepancy Indication S	pace Quantity	Туре		Residue		Partial Re	ejection		Full Rejecti	ion				
TY -	17b. Alternate Facility (or Gen	erator)			Manifest Reference	Number:	U.S. EPA ID	Number							
ACILI	Facility's Phone:						1								
ATED !	17c. Signature of Alternate Fa	cility (or Generator)		Ī					Month	Day	Year				
DESIGNATED FACILITY						-1.3									
	18. Designated Facility Owner	r or Operator: Certification of receipt of mate	erials covered by the manife	st except as	noted in Item 17a										
-	Printed/Typed Name			Signatu	7				Month	Day	Year				



3205 SE Minter Bridge Hillsboro, OR, 97123 Ph: (503)-640-9427

Ticket# 1294857 25886

Ð		Ö	Vehicle# 123 Container Container Driver keit Check# Billing # 00 Gen EPA ID N/ Gen EPA ID N/ OPERATOR													
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