



June 17, 2013

Mr. Donald Buss  
c/o Buss Investments LLC  
11706 SE 225<sup>th</sup> Court  
Kent, Washington 98031-9610

Re: Letter Report  
Monitoring Well Installation and Sampling  
Buss Investments LLC Property  
969 118<sup>th</sup> Avenue SE  
Bellevue, Washington  
VCP Site No. NW 2565

EPI Project Number: 62401.1

Dear Mr. Buss:

Environmental Partners, Inc. (EPI) is pleased to submit this letter report for the recently completed monitoring well installation and sampling for the Buss Investments LLC Property located at 969 118<sup>th</sup> Avenue SE in Bellevue, Washington (Site; Figure 1). The well installation and sampling were performed in support of the ongoing assessment of post remediation environmental conditions at the Site. The work documented herein was in response to comments and feedback given by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP).

## **BACKGROUND AND NARRATIVE**

Remedial actions were implemented at the Site in August and October of 2012 and were documented in the *Remedial Action Report* dated January 14, 2013. That report was submitted to Ecology under the VCP and was reviewed by the Ecology Site Manager, Mr. Roger Nye. The reviewer is referred to that report for additional detail regarding the scope and results of the remedial actions.

As a component of the remedial actions in Area of Potential Concern (AOPC)-1, AOPC-2, and AOPC-5, samples of the ground water within and entering the remedial excavation were collected and submitted for analysis. Ground water from the open excavation was dewatered and transported off-site for disposal, the ground water was allowed to recharge, and the ground water was then resampled. This process was repeated until consecutive samples of the recharging ground water demonstrated that ground water impacts in the AOPCs had been fully addressed during the remedial action.

Upon review of the *Remedial Action Report*, Ecology provided an informal opinion via teleconference that additional ground water quality data would be required hydraulically downgradient of AOPC-1 and AOPC-2 to demonstrate compliance with ground water cleanup levels.

During a review of historic environmental investigations, EPI identified a report graphic dated September 1990 prepared by Hart Crowser showing three monitoring wells located approximately on the western boundary of the Site, and immediately hydraulically downgradient from AOPC-1 and AOPC-2. These wells, designated MW-1, MW-2, and MW-3, appear to have been installed in 1989 following the removal of the three underground storage tanks (USTs) from AOPC-1 and AOPC-2 (see Figure 2) and are located as close as possible to the downgradient edge of the remedial excavation. Neither EPI nor Mr. Nye could locate a September 1990 report referencing these wells in Ecology's Central Files. EPI also conducted a review of Ecology's online well log database but was not able to locate well logs or well completion diagrams for these wells.

Ecology indicated that, in order to confirm ground water sampling results from the remedial action at AOPC-1 and AOPC-2, samples from these wells should be submitted for analysis of gasoline-range organics (GRO), diesel- and oil-range organics (DRO and ORO), and aromatic fuel compounds (benzene, toluene, ethylbenzene, and total xylenes; BTEX). The wells were redeveloped and sampled based on Ecology's comments and those actions are discussed below.

In subsequent telephone and electronic mail communications, Mr. Nye indicated that Ecology would also likely require two additional monitoring wells to be installed and sampled from locations hydraulically downgradient of AOPC-5. The purpose of those wells, similar to MW-1 through MW-3, would be to confirm ground water sampling results from the remedial action at AOPC-5. Ecology indicated that samples from these wells should be submitted for analysis of DRO and ORO and for total metals analysis of arsenic, cadmium, chromium, lead, and mercury (i.e., MTCA 5 Metals). These two new wells, designated MW-4 and MW-5, were installed and sampled based on Ecology's comments. The details of that sampling and analysis are discussed below.

## **SCOPE OF SERVICES**

### **Sampling of Existing Wells**

EPI made a preliminary evaluation of the existing wells on February 25, 2013. Both MW-1 and MW-3 are located in landscaped areas on the south and north sides of the parking lot west of AOPC-1 and AOPC-2 and were overgrown by groundcover. MW-2 is located on the eastern edge of the asphalt parking lot for the adjacent office building. The well box for MW-2 contained dirt and vegetative debris but was in generally good condition. Several inches of soil and thick organic material were removed from the top of the well boxes prior to accessing the well caps.

The depth to water (DTW) in each well was measured to the nearest 0.01 foot using an electronic water level indicator and the total depth of the wells was gauged. The DTW in MW-1 was 6.60 feet, the DTW in MW-2 was 4.80 feet, and the DTW in MW-3 was 4.59 feet. Considering surface elevation and the anticipated high seasonal water levels in February, these depth to water measurements were consistent with the water table elevation encountered during the remedial action. All wells appear to have been completed to a total depth of approximately 18 feet bgs. Monitoring wells MW-1 through MW-3 were redeveloped by surging with a stainless-steel bailer and overpumping.

The wells were sampled on February 28, 2013. Prior to sampling, EPI re-measured the DTW using an electronic water level meter. Ground water elevations ranged from 4.41 feet in MW-2 to 6.43 feet in

MW-1. Prior to sampling, EPI purged the monitoring wells using single-use, disposable polyethylene bailers.

Ground water samples were collected from each well using low-flow sampling procedures. Samples were collected using a peristaltic pump and single-use tubing operated at a flow rate of 100 milliliters/minute. The ground water samples were collected in containers appropriate for the intended analyses and which were supplied by the analytical laboratory. The samples were submitted for the following analyses:

- GRO using the Northwest Total Petroleum Hydrocarbons as Gasoline (NWTPH-Gx) Method;
- DRO and ORO using the Northwest Total Petroleum Hydrocarbons as Diesel-Extended (NWTPH-Dx) Method with silica gel cleanup; and
- BTEX using EPA Method 8021B.

All samples were handled and transported using standard chain-of-custody procedures and delivered to OnSite Environmental, Inc. for analysis under standard turnaround time.

#### **Installation and Sampling of New Wells**

Wells MW-4 and MW-5 were installed on May 17, 2013. Monitoring well drilling and installation was performed using standard hollow stem auger (HSA) drilling and well installation methods under the supervision of a Well Driller licensed in Washington and a Washington-licensed Geologist.

Both wells were installed to a depth of 15 feet in locations hydraulically downgradient of AOPC-5, as previously suggested by Mr. Nye. Specific well locations were provided in advance to Ecology. The wells were constructed using 2-inch diameter schedule 40 blank PVC with 10 feet of 0.01-inch machine slotted screen set from 5 to 10 feet below ground surface (bgs). Each well was developed by surging and removing approximately 30 gallons of water using a submersible pump.

The wells were allowed to equilibrate for 72 hours and were sampled on May 20, 2013. Prior to sampling, the DTW was measured and the north side of the PVC well casing was marked to establish a permanent measurement location. The DTW in MW-4 was 2.96 feet and the DTW in MW-5 was 4.11 feet. Considering surface elevation and experience during the remedial action, this depth to water is consistent with the local water table.

Both monitoring wells were purged prior to sampling using a peristaltic pump equipped with new, disposable tubing. Low-flow purging was used to minimize sample volatilization and potential uptake of suspended sediments in the wells. Purge water was discharged through a flow cell for measurement of field parameters.

Temperature, pH, specific conductance, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity were measured and recorded during purging to determine well water stabilization. Purging was performed until field parameters stabilized to within the following ranges:

- pH  $\pm$  0.1 pH units;

- Specific conductance  $\pm$  3 percent;
- Turbidity  $\pm$  10 percent; and
- Temperature  $\pm$  0.1°C.

Following purging, the wells were allowed to recharge prior to sampling. Sufficient recovery is defined as recovery to at least 80 percent of original static water level prior to sampling. Turbidity, the most critical parameter in this case, was very low in each well (less than 1.0 nephelometric turbidity unit [NTU]), indicating very little suspended sediment in the water column. When the wells had recovered sufficiently, ground water samples were collected from each well using low-flow pumping rates and submitted for the following analyses:

- DRO and ORO using the NWTPH-Dx Method with silica gel cleanup;
- Total MTCA 5 Metals using EPA Method 200.8/7470A; and
- Dissolved MTCA 5 Metals using EPA Method 200.8/7470A.

The ground water samples were collected in clean, laboratory-supplied glass containers. Samples collected for dissolved MTCA 5 Metals were field filtered using a 0.45-micron disposable filter and were preserved with nitric acid. After collection, all samples were placed in chilled coolers and transported to the analytical laboratory. All samples were handled and transported using standard chain-of-custody procedures and delivered to OnSite Environmental, Inc. for analysis under expedited 48-hour turnaround time.

## **FINDINGS**

### **Subsurface Conditions**

Subsurface conditions in the area of MW-4 and MW-5 consisted of approximately 3 to 4 feet of debris fill (i.e., brick, terra cotta roof tiles, and porcelain and concrete fragments) underlain by several feet of vegetative and organic debris (i.e., wood fragments, tree trunks, and branches). A layer of organic peat material was encountered at approximately 8 to 9 feet bgs at both well locations. The peat layer was 3 to 4 feet thick and underlain by poorly-graded Sand with Silt to the terminal depth of the borings at 15 feet bgs. Ground water is anticipated to migrate generally to the west-southwest toward Mercer Slough. The boring and well completion logs are included in Attachment A.

### **Analytical Results**

The ground water sample analytical results are presented in Table 1, and on Figure 2. The final laboratory report with chain-of-custody form is included as Attachment B.

- GRO was not detected in any of the wells at concentrations exceeding the Practical Quantitation Limit (PQL) of the NWTPH-Gx analytical method.
- DRO was not detected in any of the wells at concentrations exceeding the PQL of the NWTPH-Dx analytical method.

- ORO was not detected in any of the wells at concentrations exceeding the PQL of the NWTPH-Dx analytical method.
- Benzene was detected at a concentration of 1.4 micrograms/liter ( $\mu\text{g/L}$ ) in MW-2. This concentration is less than the MTCA Method A Ground Water Cleanup Level for benzene of 5  $\mu\text{g/L}$  (WAC 173-340-900, Table 720-1). Benzene was not detected in any other wells at concentrations exceeding the PQL of the EPA 8021B analytical method.
- Neither toluene, ethylbenzene, nor total xylenes were detected in any of the wells at concentrations exceeding the PQL of the EPA 8021B analytical method.
- Arsenic was detected in the total metals analysis at a concentration of 12  $\mu\text{g/L}$  in MW-4 and 8.2  $\mu\text{g/L}$  in MW-5. Arsenic was also detected in the dissolved metals analysis at a concentration of 12  $\mu\text{g/L}$  in MW-4 and 8.6  $\mu\text{g/L}$  in MW-5. These concentrations exceed the MTCA Method A Ground Water Cleanup Level for arsenic in ground water of 5  $\mu\text{g/L}$  (WAC 173-340-900, Table 720-1).
- Neither cadmium, chromium, lead, nor mercury were detected in either the total or dissolved metals analyses at concentrations exceeding the PQL of the EPA 200.8 or 7470A analytical methods.

## CONCLUSIONS

The following conclusions are supported by the findings of the recent ground water sampling at the Site:

- There is no indication of unacceptable impacts to ground water by gasoline-related compounds immediately hydraulically downgradient of AOPC-1 and AOPC-2. GRO and BTEX compounds were contaminants of concern in these AOPCs. This conformational ground water sampling and analysis confirms the results of the performance ground water sampling conducted during the remedial action in August and October 2012.
- There is no indication of unacceptable impacts to ground water by diesel- or oil-related compounds immediately hydraulically downgradient of AOPC-1, AOPC-2 and AOPC-5. DRO and ORO were contaminants of concern in these AOPCs. This conformational ground water sampling and analysis also confirms the results of the performance ground water sampling conducted during the remedial action.
- The arsenic concentrations detected in MW-4 and MW-5 are likely representative of naturally background concentrations typical in Western Washington. Only arsenic was detected at a concentration above the PQL in the samples submitted for analysis from these wells. There is not a documented historic source of arsenic at the Site and potential sources of arsenic, absent any of the other MTCA 5 metals, are highly unlikely. Low levels of arsenic, such as observed on the Site, are common in shallow ground water throughout Western Washington. The observed arsenic in ground water is likely attributable to the documented naturally occurring arsenic concentration in soil in the Puget Sound Region of 7 milligrams/kilogram (mg/kg), as documented in *Natural Background Soil Metals*

*Concentrations in Washington State*, dated October 1994 (Ecology Publication No. 94-115).

## **REQUEST FOR A PARTIAL SUFFICIENCY DETERMINATION**

It is EPI's opinion that the remedial action and ground water performance and conformational monitoring performed at the Site complies with the substantive requirements of the MTCA regulation for demonstrating compliance with the MTCA Method A Standard in AOPC-1, AOPC-2, AOPC-4, and AOPC-5. The supplemental ground water sampling documented herein and performed at the request of Ecology confirms the prior results for ground water sampling and analysis documented in the *Remedial Action Report*. No further remedial action is possible or necessary in these AOPCs and these areas do not represent a current threat to human health or the environment.

Submission of this and previous reports to Ecology under the VCP continues to support a Buss Investments LLC request for a Partial Sufficiency determination for the Site. The request for a Partial Sufficiency determination is supported by the following:

- The Site has been fully characterized in a manner consistent with the requirements of MTCA.
- All accessible soil contamination at the Site has been remediated in a manner consistent with the MTCA Method A Standards and performance sampling of soil and ground water indicate compliance with MTCA Method A Cleanup Levels throughout the completed remedial excavations. There is no threat of recontamination of the remediated areas and the remediated areas do not pose a threat of impact to other areas of the Site or adjacent properties, including the Mercer Slough.

In order to attain a No Further Action (NFA) determination for the Site, the documented contamination remaining under the Main Building in AOPC-3 must also be remediated. EPI understands that Buss Investments LLC currently plans to address that contamination during redevelopment of the Site and after demolition of the Main Building. Buss Investments, LLC or a subsequent owner of the property may petition Ecology for an NFA determination once AOPC-3 has been fully remediated.

## **DISCLAIMER**

As applicable and available within the project schedule and budget, we have completed the agreed scope of services, employing professional standards applicable in the industry today. EPI assumes no risk for existing conditions on the Site.


To the extent that these services have required judgment, there can be no assurance that fully definitive or desired results were obtained, or if any results were obtained, that they were supportive of any given course of action. The services have included the application of judgment to scientific principles; to that extent, certain results of this work have been based on subjective interpretation. EPI makes no warranties, express or implied including, without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this letter report is not to be construed as legal advice.

Donald Buss  
Well Installation and Sampling Report, Buss Investments LLC Property  
969 118<sup>th</sup> Avenue SE, Bellevue, Washington  
June 17, 2013

This letter report was prepared solely for Buss Investments LLC and its affiliates, partners, and lenders and the contents herein may not be used or relied upon by any other person without the express written consent and authorization of EPI. By accepting this report, the user agrees that any use or reliance it places on this report shall be limited to the terms and conditions of the contract under which this document was generated, the qualifications and limitations stated in the report, and with the acknowledgement that the actual site conditions may change with time and that hidden conditions not discoverable within the scope of this assessment may exist at the Site.

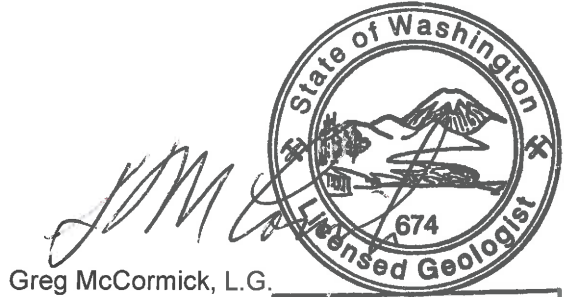
EPI appreciates the opportunity to be of assistance on this project. If you have any questions or comments, please do not hesitate to contact us at (425) 395-0010.

Sincerely,



Thomas C. Morin, L.G.  
President/Principal Geologist

Thomas C. Morin



Greg McCormick, L.G.  
Senior Geologist

GREGORY A. McCORMICK

## ENCLOSURES

### Tables

Table 1 Summary of Ground Water Analytical Results (in µg/L)

### Figures

Figure 1 General Vicinity Map  
Figure 2 Monitoring Well Locations

### Attachments

Attachment A Field Boring Logs  
Attachment B Laboratory Analytical Report with Chain-of-Custody

## Tables

**Table 1**  
**Summary of Ground Water Analytical Results (in µg/L)**  
**Monitoring Well Installation and Sampling Report**  
**Buss Investments LLC Property**  
**969 118th Avenue SE, Bellevue, Washington**


Sample ID	Collection Date	Petroleum Hydrocarbons			Aromatic Hydrocarbons <sup>c</sup>					MTCA 5 Metals <sup>d</sup>									
		GRO <sup>a</sup>	DRO <sup>b</sup>	ORO <sup>b</sup>	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Arsenic	Dissolved <sup>e</sup> Arsenic	Total Cadmium	Dissolved <sup>e</sup> Cadmium	Total Chromium	Dissolved <sup>e</sup> Chromium	Total Lead	Dissolved <sup>e</sup> Lead	Total Mercury	Dissolved <sup>e</sup> Mercury
MW-1	2/28/13	<100	<260	<420	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--
MW-2	2/28/13	<100	<260	<420	<b>1.4</b>	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--
MW-3	2/28/13	<100	<170	<270	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--
MW-4	5/20/13	--	<260	<410	--	--	--	--	--	<b>12</b>	<b>12</b>	<4.4	<4.0	<11	<10	<1.1	<1.0	<0.50	<0.50
MW-5	5/20/13	--	<260	<410	--	--	--	--	--	<b>8.2</b>	<b>8.6</b>	<4.4	<4.0	<11	<10	<1.1	<1.0	<0.50	<0.50
<b>MTCA Method A Ground Water Cleanup Levels<sup>f</sup></b>		<b>800/1,000<sup>g</sup></b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000<sup>h</sup></b>		<b>5</b>	<b>5</b>	<b>50</b>		<b>15</b>		<b>2</b>			

Notes:

All results presented in micrograms/liter (µg/L).

-- Sample was not analyzed for this compound.

**Bold** Bold results indicate that the compound was detected at a concentration greater than the practical quantitation limit.

 Shaded cells indicate that result exceeded the cleanup level.

a Analyzed by Ecology Method NWTPH-Gx.

b Analyzed by Ecology Method NWTPH-Dx with silica gel cleanup.

c Analyzed by EPA Method 8021B.

d Analyzed by EPA Methods 200.8/7470a.

e Field filtered to 0.45 microns and preserved with nitric acid.

f Model Toxics Control Act WAC Chapters 173-340-720 and -900, and Table 720-1.

g Cleanup level is 800 µg/L when benzene is present in ground water, otherwise 1,000 µg/L.

h Cleanup level for total xylenes, sum of m-, p-, and o-xylenes.

Compounds

GRO Gasoline-range hydrocarbons

DRO Diesel-range hydrocarbons

ORO Oil-range hydrocarbons

## Figures



**KEY:**

SOURCE: USGS 7.5 MINUTE QUADRANGLE  
(TOPOGRAPHIC)

BELLEVUE SOUTH, WASHINGTON  
1977

REVISED 1983



SCALE = 1:25,000



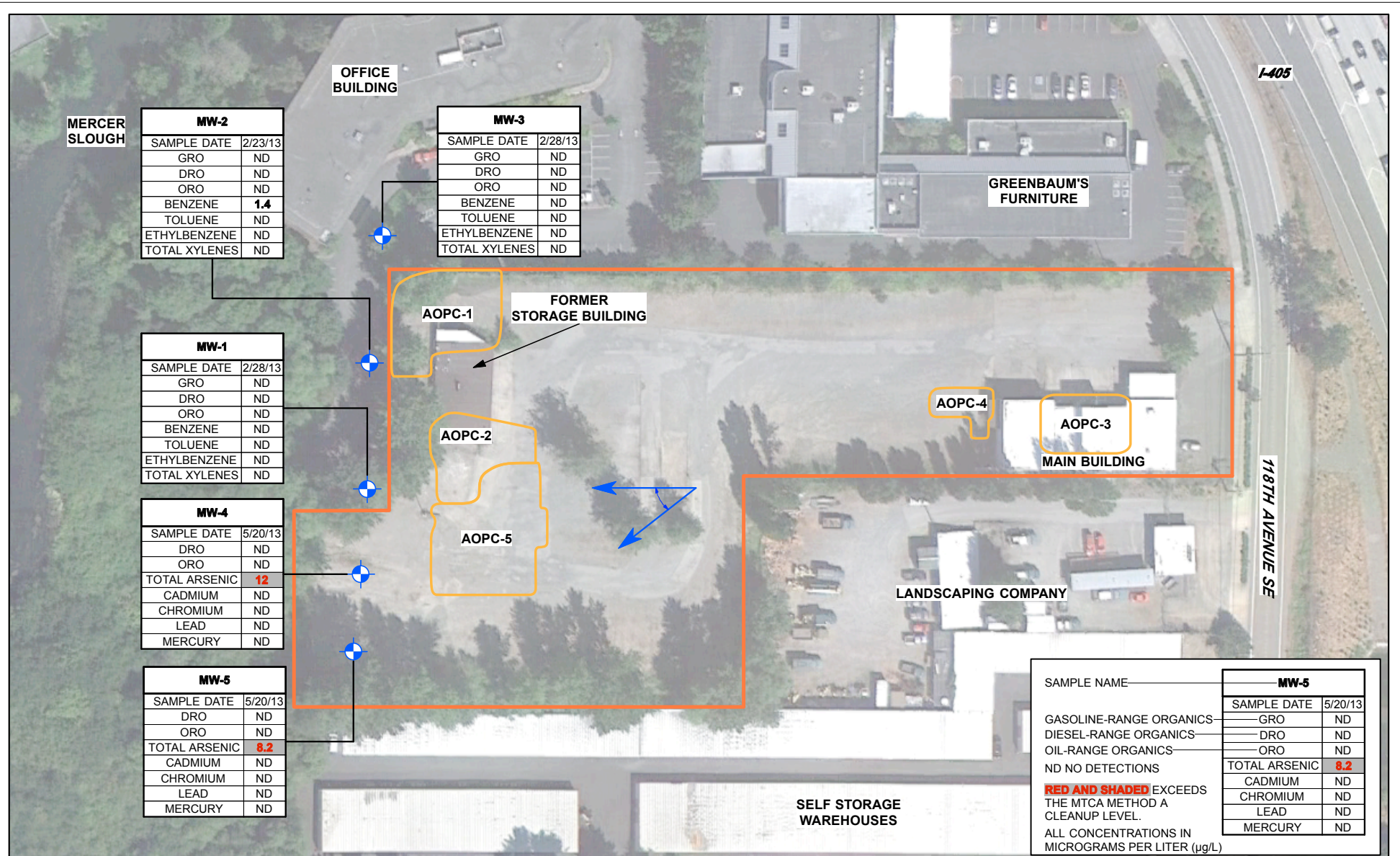
**ENVIRONMENTAL PARTNERS INC**

295 NE Gilman Boulevard, Suite 201  
Issaquah, Washington 98027

**FIGURE 1**

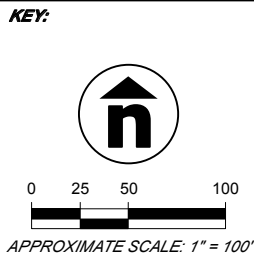
GENERAL VICINITY MAP

<b>PROJECT</b>	62401.1		
<b>PREPARED FOR</b>	BUSS INVESTMENTS LLC		
<b>LOCATION</b>	969 118TH AVENUE SE BELLEVUE, WASHINGTON		
<b>SHEET</b>	<b>DRAWN BY</b>	<b>REVIEWED BY</b>	<b>DATE</b>
1 OF 1	ALW	GAM	6/3/13



SAMPLE NAME		MW-5	
GASOLINE-RANGE ORGANICS	GRO	5/20/13	ND
DIESEL-RANGE ORGANICS	DRO		ND
OIL-RANGE ORGANICS	ORO		ND
ND NO DETECTIONS	TOTAL ARSENIC		8.2
	CADMIUM		ND
	CHROMIUM		ND
	LEAD		ND
	MERCURY		ND

RED AND SHADED EXCEEDS THE MTCA METHOD A CLEANUP LEVEL.  
ALL CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L)



**SOURCE:** AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH.

- PROPERTY LINE
- APPROXIMATE LIMIT OF AREA OF POTENTIAL CONCERN (AOPC)
- MONITORING WELL LOCATION
- GENERAL HYDRAULIC GRADIENT

**ept ENVIRONMENTAL PARTNERS INC**  
295 NE Gilman Boulevard, Suite 201  
Issaquah, Washington 98027

**FIGURE 2**  
MONITORING WELL LOCATIONS

<b>PROJECT</b>	62401.1		
<b>PREPARED FOR</b>	BUSS INVESTMENTS LLC		
<b>LOCATION</b>	969 118TH AVENUE SE BELLEVUE, WASHINGTON		
<b>SHEET</b>	<b>DRAWN BY</b>	<b>REVIEWED BY</b>	<b>DATE</b>
1 OF 1	ALW	GAM	6/3/13

**Attachment A**  
**Field Boring Logs**

**Boring/Well Designation: MW-4**

<p>Client: <b>Buss LLC</b>          Logged By: <b>GMC</b>          Date of Drilling: <b>5/17/12</b>          Site Address: <b>969 118th Ave. SE Bellevue, WA</b>          Drilling Contractor: <b>Cascade</b>          Method: <b>HSA</b>          Drill Rig: <b>CME 75</b>          Borehole Size: <b>8"</b></p>	<p>Site Representation:</p>
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Depth	SUBSURFACE PROFILE			SAMPLE			PID (ppm)	Sheen	Well Data	Comments
	Log	USCS Code	DESCRIPTION Name; Color; Moisture; Density; Plasticity; Dilatancy; Description; Other	Interval	Recovery	Blows per 6"				
			Ground Surface							Flush mount
2			Debris + Fill material to approx 8.5' bgs							Bentonite seal
4			Bricks, tile, concrete to ~3' underlain by organic debris, ie wood fragments, limbs, no odor			3	Screen Sample	5		
6						5				
8						8	Screen Sample	8		
10		OL	Organic Soil (Peat) - Brown, moist, spongy peat, no odor			10				water at 10' bgs at completion
12										
14		SP	Poorly-graded sand with silt. Gray, wet, med. dense, mostly fine sand, with some silt, no odor			13	Screen Sample	5		2" well well ID BIC 273 .01 slot screen from 5' - 10' bgs
16						15				
18			End of Borehole at 15' bgs							
20										

Project No.: **62401.1**

# RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

RE08385

**Construction/Decommission**

Construction  
 Decommission ORIGINAL INSTALLATION Notice of Intent Number \_\_\_\_\_

MW-4

Type of Well

Resource Protection  
 Geotechnical Soil Boring

Consulting Firm EPI

Property Owner

Buss Investments LLC

Site Address

969 118th St SE

City

Bellevue

County

King

Unique Ecology Well ID

Tag No.

BIC 273

Location

1/4 NW 1/4 NW Sec 4 TWN 24N R 5E or WWM

EWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Materials used and the information reported above are true to my best knowledge and belief

Driller  Trainee Name (Print)

Curtis Aske

Driller/Trainee Signature

Driller/Trainee License No.

12867

Tax Parcel No.

9399700820

Cased or Uncased Diameter

8 1/4"

Static Level

10'

Work/Decommission Start Date

5-17-13

Work/Decommission End Date

5-13-13

If trainee, licensed driller's

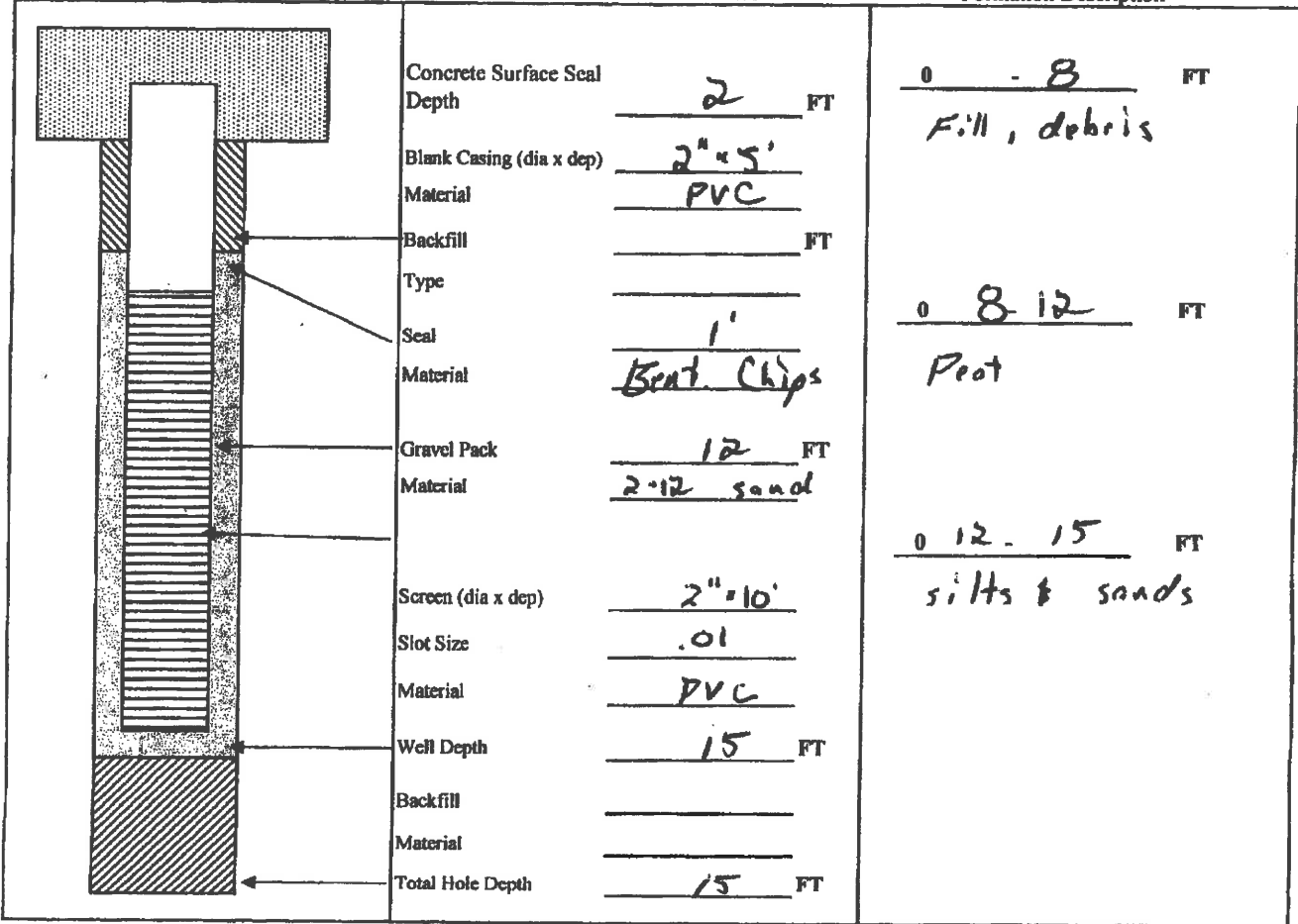
Signature and License No.

**Construction/Design**

Well Data

W3-247

Formation Description



Scale 1" = \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

ECY 050-12 (Rev-v 2/01)

**Boring/Well Designation: MW-5**

<p><b>Client:</b> Buss LLC  <b>Logged By:</b> GMC  <b>Date of Drilling:</b> 5/17/13  <b>Site Address:</b> 969 118th Ave SE, Bellevue, WA  <b>Drilling Contractor:</b> Cascade  <b>Method:</b> HSA  <b>Drill Rig:</b> CME 75  <b>Borehole Size:</b> 8"</p>	<p><b>Site Representation:</b></p>
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Depth	SUBSURFACE PROFILE			SAMPLE			PID (ppm)	Sheen	Well Data	Comments
	Log	USCS Code	DESCRIPTION Name; Color; Moisture; Density; Plasticity; Dilatency; Description; Other	Interval Recovery	Blows per 6"	Sample				
			Ground Surface							Flush mount Bentonite seal
2			Debris and fill material to 8' bgs bricks, terra cotta tile, concrete fragments, wood debris 3-7 feet. No odor	3		Screen Sample	9			
4				5						
6				8						
8				10						
10		OL	Organic soil (peat) Brown, moist, spongy peat, no odor	8		Screen Sample	15			water at 8' bgs at completion
12			12.5' Poorly-graded Sand with silt Gray to brown, wet, med. dense, mostly fine sand with some silt, no odor	13		Screen Sample	8			2" well BIC 27" installed .01 screens from 5' - 10' bgs
14				15						
16				15						
18			End of Borehole @ 15' bgs							
20										

**Project No.:** 62401.1

# RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT

Notice of Intent No.

RE08385

Construction/Decommission

Construction  
 Decommission ORIGINAL INSTALLATION Notice of Intent Number \_\_\_\_\_

MW-5

Type of Well

Resource Protection  
 Geotechnical Soil Boring

Consulting Firm EPI

Property Owner

Buss Investments LLC

Site Address

969 118th St SE

City

Bellevue

County

King

Unique Ecology Well ID

Tag No. BIC 274

Location

1/4 NW 1/4 NW Sec 4 TWN 24N R 5E or WWM

EWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards

Materials used and the information reported above are true to my best knowledge and belief

Lat/Long (s,l,r)

Lat Deg

x

Lat Min/Sec

x

still Required)

Long Deg

x

Long Min/Sec

x

Tax Parcel No.

9399700820

Driller  Trainee Name (Print)

Curtis A. ...

Driller/Trainee Signature

Driller/Trainee License No.

2867

Cased or Uncased Diameter

8 1/4"

Static Level

5'

Work/Decommission Start Date

5-17-13

Work/Decommission End Date

5-17-13

If trainee, licensed driller's

Signature and License No.

Construction/Design

Well Data

W3-247

Formation Description

	Concrete Surface Seal Depth	<u>2</u> FT	<u>0 - 8</u> FT
	Blank Casing (dia x dep)	<u>2" x 5'</u>	<u>Fill, debris</u>
	Material	<u>PVC</u>	
	Backfill	_____ FT	
	Type	_____	
	Seal	<u>1'</u>	<u>0 8 -</u> FT
	Material	<u>Best. Chips</u>	
	Gravel Pack	<u>12</u> FT	
	Material	<u>2-12 sand</u>	
	Screen (dia x dep)	<u>2" x 10'</u>	<u>0 -</u> FT
Slot Size	<u>.01</u>		
Material	<u>PVC</u>		
Well Depth	<u>15</u> FT		
Backfill	_____		
Material	_____		
Total Hole Depth	<u>15</u> FT		

Scale 1" = \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_

**Attachment B**  
**Laboratory Analytical Report with Chain-of-Custody**



14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

March 6, 2013

Greg McCormick  
Environmental Partners, Inc.  
295 NE Gilman Blvd, Suite 201  
Issaquah, WA 98027

Re: Analytical Data for Project 62401.6  
Laboratory Reference No. 1302-227

Dear Greg:

Enclosed are the analytical results and associated quality control data for samples submitted on February 28, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: March 6, 2013  
Samples Submitted: February 28, 2013  
Laboratory Reference: 1302-227  
Project: 62401.6

### **Case Narrative**

Samples were collected on February 28, 2013 and received by the laboratory on February 28, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: March 6, 2013  
 Samples Submitted: February 28, 2013  
 Laboratory Reference: 1302-227  
 Project: 62401.6

### NWTPH-Gx/BTEX

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-1</b>					
Laboratory ID:	02-227-01					
Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Toluene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Ethyl Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
m,p-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
o-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Gasoline	ND	100	NWTPH-Gx	3-4-13	3-4-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	91	71-116				
<b>Client ID:</b>	<b>MW-2</b>					
Laboratory ID:	02-227-02					
Benzene	1.4	1.0	EPA 8021B	3-4-13	3-4-13	
Toluene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Ethyl Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
m,p-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
o-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Gasoline	ND	100	NWTPH-Gx	3-4-13	3-4-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	91	71-116				
<b>Client ID:</b>	<b>MW-3</b>					
Laboratory ID:	02-227-03					
Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Toluene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Ethyl Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
m,p-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
o-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Gasoline	ND	100	NWTPH-Gx	3-4-13	3-4-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	91	71-116				

Date of Report: March 6, 2013  
 Samples Submitted: February 28, 2013  
 Laboratory Reference: 1302-227  
 Project: 62401.6

**NWTPH-Gx/BTEX  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0304W1					
Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Toluene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Ethyl Benzene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
m,p-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
o-Xylene	ND	1.0	EPA 8021B	3-4-13	3-4-13	
Gasoline	ND	100	NWTPH-Gx	3-4-13	3-4-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	71-116				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-002-01							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	30	
Toluene	ND	ND	NA	NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA	NA	NA	30	
Gasoline	ND	ND	NA	NA	NA	NA	30	
<i>Surrogate:</i>								
<i>Fluorobenzene</i>				93	93	71-116		

**MATRIX SPIKES**

Laboratory ID:	03-002-01									
	MS	MSD	MS	MSD		MS	MSD			
Benzene	45.0	48.0	50.0	50.0	ND	90	96	81-121	6	11
Toluene	45.3	48.3	50.0	50.0	ND	91	97	83-122	6	13
Ethyl Benzene	44.6	47.5	50.0	50.0	ND	89	95	81-121	6	15
m,p-Xylene	45.1	47.6	50.0	50.0	ND	90	95	80-119	5	16
o-Xylene	45.4	47.8	50.0	50.0	ND	91	96	80-119	5	15
<i>Surrogate:</i>										
<i>Fluorobenzene</i>						95	94	71-116		

Date of Report: March 6, 2013  
 Samples Submitted: February 28, 2013  
 Laboratory Reference: 1302-227  
 Project: 62401.6

**NWTPH-Dx**  
 (with acid/silica gel clean-up)

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-1</b>					
Laboratory ID:	02-227-01					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	3-1-13	3-1-13	
Lube Oil Range Organics	<b>ND</b>	0.42	NWTPH-Dx	3-1-13	3-1-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	100	50-150				
<b>Client ID:</b>	<b>MW-2</b>					
Laboratory ID:	02-227-02					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	3-1-13	3-1-13	
Lube Oil Range Organics	<b>ND</b>	0.42	NWTPH-Dx	3-1-13	3-1-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	104	50-150				
<b>Client ID:</b>	<b>MW-3</b>					
Laboratory ID:	02-227-03					
Diesel Range Organics	<b>ND</b>	0.17	NWTPH-Dx	3-1-13	3-1-13	
Lube Oil Range Organics	<b>ND</b>	0.27	NWTPH-Dx	3-1-13	3-1-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	108	50-150				

Date of Report: March 6, 2013  
 Samples Submitted: February 28, 2013  
 Laboratory Reference: 1302-227  
 Project: 62401.6

**NWTPH-Dx  
 QUALITY CONTROL  
 (with acid/silica gel clean-up)**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0301W1					
Diesel Range Organics	<b>ND</b>	0.13	NWTPH-Dx	3-1-13	3-1-13	
Lube Oil Range Organics	<b>ND</b>	0.20	NWTPH-Dx	3-1-13	3-1-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	88	50-150				

Analyte	Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>						
Laboratory ID:	02-230-01					
	ORIG	DUP				
Diesel Range Organics	<b>ND</b>	<b>ND</b>		NA	NA	
Lube Oil Range Organics	<b>ND</b>	<b>ND</b>		NA	NA	
<i>Surrogate:</i>						
<i>o-Terphenyl</i>			99 98	50-150		



### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference





14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 • (425) 883-3881

May 22, 2013

Greg McCormick  
Environmental Partners, Inc.  
295 NE Gilman Blvd, Suite 201  
Issaquah, WA 98027

Re: Analytical Data for Project 62401.1  
Laboratory Reference No. 1305-177

Dear Greg:

Enclosed are the analytical results and associated quality control data for samples submitted on May 20, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal stroke extending to the right.

David Baumeister  
Project Manager

Enclosures

Date of Report: May 22, 2013  
Samples Submitted: May 20, 2013  
Laboratory Reference: 1305-177  
Project: 62401.1

### **Case Narrative**

Samples were collected on May 20, 2013 and received by the laboratory on May 20, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

### NWTPH-Dx

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-4</b>					
Laboratory ID:	05-177-01					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	5-20-13	5-23-13	X1
Lube Oil Range Organics	<b>ND</b>	0.41	NWTPH-Dx	5-20-13	5-23-13	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	101	50-150				
<b>Client ID:</b>	<b>MW-5</b>					
Laboratory ID:	05-177-02					
Diesel Range Organics	<b>ND</b>	0.26	NWTPH-Dx	5-20-13	5-23-13	X1
Lube Oil Range Organics	<b>ND</b>	0.41	NWTPH-Dx	5-20-13	5-23-13	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	102	50-150				

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0520W1					
Diesel Range Organics	<b>ND</b>	0.25	NWTPH-Dx	5-20-13	5-23-13	X1
Lube Oil Range Organics	<b>ND</b>	0.40	NWTPH-Dx	5-20-13	5-23-13	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>87</i>	<i>50-150</i>				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>							
Laboratory ID:	05-177-01						
	ORIG	DUP					
Diesel Range Organics	<b>ND</b>	<b>ND</b>			NA	NA	X1
Lube Oil Range Organics	<b>ND</b>	<b>ND</b>			NA	NA	X1
<i>Surrogate:</i>							
<i>o-Terphenyl</i>			<i>101</i>	<i>103</i>	<i>50-150</i>		

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**TOTAL METALS  
 EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>EPA Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
Lab ID:	05-177-01					
<b>Client ID:</b>	<b>MW-4</b>					
Arsenic	<b>12</b>	3.3	200.8	5-21-13	5-21-13	
Cadmium	<b>ND</b>	4.4	200.8	5-21-13	5-21-13	
Chromium	<b>ND</b>	11	200.8	5-21-13	5-21-13	
Lead	<b>ND</b>	1.1	200.8	5-21-13	5-21-13	
Mercury	<b>ND</b>	0.50	7470A	5-21-13	5-21-13	

Lab ID:	05-177-02					
<b>Client ID:</b>	<b>MW-5</b>					
Arsenic	<b>8.2</b>	3.3	200.8	5-21-13	5-21-13	
Cadmium	<b>ND</b>	4.4	200.8	5-21-13	5-21-13	
Chromium	<b>ND</b>	11	200.8	5-21-13	5-21-13	
Lead	<b>ND</b>	1.1	200.8	5-21-13	5-21-13	
Mercury	<b>ND</b>	0.50	7470A	5-21-13	5-21-13	

Date of Report: May 22, 2013  
Samples Submitted: May 20, 2013  
Laboratory Reference: 1305-177  
Project: 62401.1

**TOTAL METALS  
EPA 200.8/7470A  
METHOD BLANK QUALITY CONTROL**

Date Extracted: 5-21-13  
Date Analyzed: 5-21-13  
  
Matrix: Water  
Units: ug/L (ppb)  
  
Lab ID: MB0521WM1&MB0521W1

Analyte	Method	Result	PQL
Arsenic	200.8	<b>ND</b>	3.3
Cadmium	200.8	<b>ND</b>	4.4
Chromium	200.8	<b>ND</b>	11
Lead	200.8	<b>ND</b>	1.1
Mercury	7470A	<b>ND</b>	0.50

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**TOTAL METALS  
 EPA 200.8/7470A  
 DUPLICATE QUALITY CONTROL**

Date Extracted: 5-21-13

Date Analyzed: 5-21-13

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-177-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	12.4	11.7	6	3.3	
Cadmium	ND	ND	NA	4.4	
Chromium	ND	ND	NA	11	
Lead	ND	ND	NA	1.1	
Mercury	ND	ND	NA	0.50	

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**TOTAL METALS  
 EPA 200.8/7470A  
 MS/MSD QUALITY CONTROL**

Date Extracted: 5-21-13

Date Analyzed: 5-21-13

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-177-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	111	<b>116</b>	93	<b>116</b>	93	0	
Cadmium	111	<b>106</b>	96	<b>104</b>	93	2	
Chromium	111	<b>108</b>	98	<b>106</b>	96	2	
Lead	111	<b>109</b>	98	<b>109</b>	99	1	
Mercury	12.5	<b>12.7</b>	101	<b>13.0</b>	104	2	

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**DISSOLVED METALS**  
**EPA 200.8/7470A**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date	Date	Flags
				Prepared	Analyzed	
Lab ID:	05-177-01					
<b>Client ID:</b>	<b>MW-4</b>					
Arsenic	<b>12</b>	3.0	200.8		5-21-13	
Cadmium	<b>ND</b>	4.0	200.8		5-21-13	
Chromium	<b>ND</b>	10	200.8		5-21-13	
Lead	<b>ND</b>	1.0	200.8		5-21-13	
Mercury	<b>ND</b>	0.50	7470A		5-21-13	

Lab ID:	05-177-02					
<b>Client ID:</b>	<b>MW-5</b>					
Arsenic	<b>8.6</b>	3.0	200.8		5-21-13	
Cadmium	<b>ND</b>	4.0	200.8		5-21-13	
Chromium	<b>ND</b>	10.0	200.8		5-21-13	
Lead	<b>ND</b>	1.0	200.8		5-21-13	
Mercury	<b>ND</b>	0.50	7470A		5-21-13	

Date of Report: May 22, 2013  
Samples Submitted: May 20, 2013  
Laboratory Reference: 1305-177  
Project: 62401.1

**DISSOLVED METALS  
EPA 200.8/7470A  
METHOD BLANK QUALITY CONTROL**

Date Analyzed: 5-21-13  
Matrix: Water  
Units: ug/L (ppb)  
Lab ID: MB0521D1&MB0521D2

Analyte	Method	Result	PQL
Arsenic	200.8	<b>ND</b>	3.0
Cadmium	200.8	<b>ND</b>	4.0
Chromium	200.8	<b>ND</b>	10
Lead	200.8	<b>ND</b>	1.0
Mercury	7470A	<b>ND</b>	0.50

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**DISSOLVED METALS  
 EPA 200.8/7470A  
 DUPLICATE QUALITY CONTROL**

Date Analyzed: 5-21-13

Matrix: Water  
 Units: ug/L (ppb)

Lab ID: 05-177-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	12.4	12.4	0	3.0	
Cadmium	ND	ND	NA	4.0	
Chromium	ND	ND	NA	10	
Lead	ND	ND	NA	1.0	
Mercury	ND	ND	NA	0.50	

Date of Report: May 22, 2013  
 Samples Submitted: May 20, 2013  
 Laboratory Reference: 1305-177  
 Project: 62401.1

**DISSOLVED METALS  
 EPA 200.8/7470A  
 MS/MSD QUALITY CONTROL**

Date Analyzed: 5-21-13

Matrix: Water  
 Units: ug/L (ppb)

Lab ID: 05-177-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	200	<b>219</b>	103	<b>220</b>	104	1	
Cadmium	200	<b>200</b>	100	<b>197</b>	98	2	
Chromium	200	<b>200</b>	100	<b>200</b>	100	0	
Lead	200	<b>200</b>	100	<b>200</b>	100	0	
Mercury	12.5	<b>12.4</b>	99	<b>12.3</b>	98	1	



### Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
  - B - The analyte indicated was also found in the blank sample.
  - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
  - E - The value reported exceeds the quantitation range and is an estimate.
  - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
  - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
  - I - Compound recovery is outside of the control limits.
  - J - The value reported was below the practical quantitation limit. The value is an estimate.
  - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
  - L - The RPD is outside of the control limits.
  - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
  - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
  - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
  - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
  - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
  - P - The RPD of the detected concentrations between the two columns is greater than 40.
  - Q - Surrogate recovery is outside of the control limits.
  - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
  - T - The sample chromatogram is not similar to a typical \_\_\_\_\_.
  - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
  - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
  - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
  - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
  - X - Sample extract treated with a mercury cleanup procedure.
  - X1 - Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
  - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
  - Z -
- ND - Not Detected at PQL  
 PQL - Practical Quantitation Limit  
 RPD - Relative Percent Difference

