

**GROUNDWATER SAMPLING EVENT  
REPORT**

**OCTOBER 27, 2012**

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

**RECEIVED**  
MAR 25 2013  
WA State Department  
of Ecology (SWRO)

# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

January 28, 2012

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER SAMPLING REPORT FOR THE PHOENIX INN SITE LOCATED  
AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of the groundwater sampling event performed on the Phoenix Inn Site on October 27, 2012. The purpose of this groundwater sampling event was to measure the current levels of petroleum range contaminants in the groundwater at selected locations on the subject property and the adjacent public right of ways.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## 2.2 Site Background

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater is typically present at depths ranging between 4.00 and 7.50 feet b.g.s. in the monitoring wells associated with the subject property.

## 3.0 MONITORING WELLS

### 3.1 Monitoring Well Installations

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the south central, and southwestern portions of the site. The two (2) inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells #PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells #PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s. to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were

installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s. and screened from 3 feet b.g.s. to 8 feet b.g.s.

### 3.2 Existing Monitoring Wells

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Monitoring Well Installation - Notice of Intent Forms were filed with Ecology.

## 4.0 GROUNDWATER MONITORING

### 4.1 Groundwater Elevations

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### 4.2 Groundwater Sampling

On October 27, 2012, I obtained representative samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17, and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and were analyzed for the presence of gasoline range T.P.H., diesel fuel range T.P.H., oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses was not performed on the water samples obtained from off-site monitoring well MW-10. The sample containers were damaged in transport to the laboratory.

Laboratory analyses results for water samples obtained from extended perimeter monitoring well samples, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring well samples # PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-15, PMW-15, PMW-17, PMW-17 and PMW-18

reported no presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well water sample # PMW-14 reported the presence of diesel fuel range T.P.H. at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

The laboratory analyses results for this groundwater sampling event indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## **7.0 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H. using method NWTPH-Dx and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8260.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

The laboratory analyses results of this groundwater sampling event document the presence of diesel fuel range T.P.H., at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use, in the groundwater present in on-site monitoring well #MW-14.

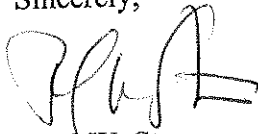
The laboratory analyses results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

Based on these laboratory analyses results, additional quantities of nutritionally enhanced microbes and oxygen releasing solutions will be applied to the on-site subsurface soils and groundwater.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

If you have any questions or need further information please feel free to contact us at the above phone number.

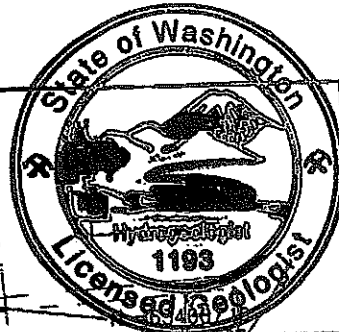
Sincerely,



Paul W. Stemen  
Vice President

PHOENIX INN

ANALYSIS OF GASOLINE RANGE ORGANICS & BTEX IN WATER BY METHOD NWTPH-Gx/8260										ANALYSIS OF DIESEL RANGE ORGANICS IN WATER BY METHOD NWTPH-Dx WITH SILICA GEL CLEANUP									
SAMPLE NUMBER	SAMPLE DATE	TIME	TOC ELEVATION	GROUND WATER DEPTH	GW ELEVATION	BTEX COMPOUNDS			ETHYL-BENZENE			TOTAL XYLENES			TOTAL PETROLEUM HYDROCARBONS				
						BENZENE	TOLUENE	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
		AM																	
PMW-1	10/27/12	10:25	11.37	5.72	5.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-2	10/27/12	10:54	11.41	6.34	5.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	460	ND	ND	ND	
PMW-3	10/27/12	11:10	11.23	6.56	4.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-4	10/27/12	10:21	10.56	5.52	5.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-5	10/27/12	11:00	11.34	6.19	5.15	2	ND	ND	3	ND	ND	ND	ND	ND	450	ND	ND	ND	
PMW-6	10/27/12	11:30	11.46	6.41	5.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-7	10/27/12	10:57	10.93	5.81	5.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-8	10/27/12	10:50	11.60	6.48	5.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-9	10/27/12	10:45	11.56	6.45	5.11	4	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-10	10/27/12	10:40	12.32	7.31	5.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-11	10/27/12	10:38	12.33	7.28	5.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-12	10/27/12	10:35	12.35	7.29	5.06	3	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-13	10/27/12	11:25	11.13	5.97	5.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-14	10/27/12	11:22	10.80	5.59	5.21	1	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	900	
PMW-15	10/27/12	11:18	11.26	6.07	4.98	ND	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	490	
PMW-16	10/27/12	11:15	10.16	5.18	5.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-17	10/27/12	11:06	10.28	5.23	5.05	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	370	
PMW-18	10/27/12	11:03	11.80	6.74	5.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-1	10/27/12	10:30	10.52	5.12	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-2	10/27/12	10:34	10.69	4.22	6.47	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-6	10/27/12	10:10	10.76	5.64	5.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-10	10/27/12	10:14	10.73	5.66	5.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
METHOD A CLEAN UP LEVELS						5	1000	700	1000	1000	800	500							
METHOD DETECTION LIMITS						1	1	1	1	3	100	250							
NA = NOT ANALYZED																			



N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

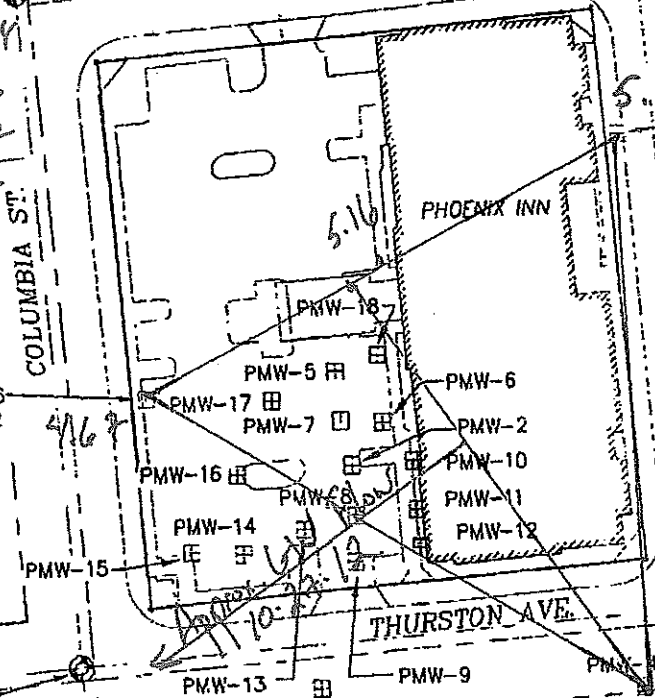
PMW-1 11.37 5.72 5.65  
PMW-3 11.23 6.56 4.67  
PMW-4 10.56 5.52 5.04

JOHN R. KANE  
Hydrogeologist  
1193

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-1 5.65  
PMW-3 4.67  
PMW-4 5.04

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23



N: =634276.33  
E: =401340.91  
EL: =10.63

N: =634297.89  
E: =401640.50

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

LEGEND

- FOUND CASSED MONUMENT
- MONITOR WELL



VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

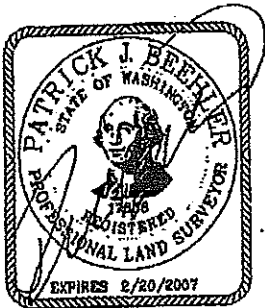
FOUND CASSED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:

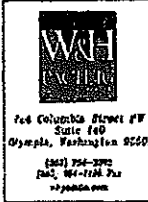
PER CITY OF OLYMPIA HELD N64°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

Office: Olympia / Station: WHP-04 / Date: 03/14/2006 13:33:50

DESIGNED BY: JAH	CHECKED BY: PJB
DRAWN BY: JAH	APPROVED BY: PJB
LAST EDIT: 3/14/06	PLOT DATE: 03/14/06
DATE: 3/14/06	BY: JAH
REASON: ADJUTANT WELLS	CC: JAH



**STEM ENVIRONMENTAL**  
**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	PROJECT NO: 034507	DRAWING FILE NAME: 34507-SURV-SB01	1	1
SCALE: 1"=80'				



Environmental  
Services Network

November 13, 2012

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended with Silica Gel Clean-up, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on November 6 - 8, 2012.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

A handwritten signature in cursive script that reads "Michael A. Korosec".

Michael A. Korosec  
*President*

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analysis of Diesel Range Organics in Water  
 by Method NWTPH-Dx with Silica Gel Cleanup**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)
Method Blank	11/5/2012	11/5/2012	86	nd
PMW-1	11/5/2012	11/5/2012	70	nd
PMW-2	11/5/2012	11/5/2012	91	nd
PMW-3	11/5/2012	11/5/2012	117	nd
PMW-4	11/5/2012	11/5/2012	99	nd
PMW-5	11/5/2012	11/5/2012	73	nd
PMW-6	11/5/2012	11/5/2012	102	nd
PMW-7	11/5/2012	11/5/2012	87	nd
PMW-8	11/5/2012	11/5/2012	117	nd
PMW-9	11/5/2012	11/5/2012	103	nd
PMW-10	11/5/2012	11/5/2012	98	nd
PMW-11	11/5/2012	11/5/2012	70	nd
PMW-12	11/5/2012	11/5/2012	95	nd
PMW-13	11/5/2012	11/5/2012	72	nd
PMW-14	11/5/2012	11/6/2012	84	<b>900</b>
PMW-15	11/5/2012	11/6/2012	83	<b>490</b>
PMW-16	11/5/2012	11/5/2012	98	nd
PMW-17	11/5/2012	11/6/2012	81	<b>370</b>
PMW-18	11/5/2012	11/5/2012	64	nd
MW-1	11/5/2012	11/5/2012	124	nd
MW-2	11/5/2012	11/5/2012	91	nd
MW-6	11/5/2012	11/5/2012	69	nd
<b>Reporting Limits</b>				<b>250</b>

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	11/5/2012	nd	nd	nd	nd	nd	109
LCS	11/5/2012	97%	83%	83%	78%	---	95
LCSD	11/5/2012	120%	116%	116%	111%	---	107
PMW-1	11/5/2012	nd	nd	nd	nd	nd	112
PMW-2	11/5/2012	nd	nd	nd	nd	460	118
PMW-3	11/5/2012	nd	nd	nd	nd	nd	95
PMW-4	11/5/2012	nd	nd	nd	nd	nd	94
PMW-5	11/5/2012	2.0	nd	3.0	nd	450	106
PMW-6	11/5/2012	nd	nd	nd	nd	nd	121
PMW-7	11/5/2012	nd	nd	nd	nd	nd	109
PMW-8	11/5/2012	nd	nd	nd	nd	nd	116
PMW-9	11/5/2012	4.0	1.0	nd	nd	nd	99
PMW-10	11/5/2012	nd	nd	nd	nd	nd	100
PMW-10 Dup	11/5/2012	nd	nd	nd	nd	nd	106
PMW-11	11/5/2012	nd	nd	nd	nd	nd	109
PMW-12	11/7/2012	3.0	20	nd	nd	nd	104
PMW-13	11/7/2012	nd	nd	nd	nd	nd	123
PMW-14	11/7/2012	1.0	7.0	nd	nd	nd	116
PMW-15	11/7/2012	nd	1.0	nd	nd	nd	103
PMW-16	11/7/2012	nd	nd	nd	nd	nd	113
PMW-17	11/7/2012	1.1	nd	nd	nd	nd	110
PMW-18	11/7/2012	nd	nd	nd	nd	nd	108
MW-1	11/7/2012	nd	nd	nd	nd	nd	114
MW-2	11/7/2012	nd	nd	nd	nd	nd	103
MW-6	11/7/2012	nd	nd	nd	nd	nd	120
MW-6 Dup	11/7/2012	nd	nd	nd	nd	nd	116
<b>Reporting Limits</b>		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

CLIENT: STANED ENVIRONMENTAL INC. DATE: 11/2/2012 PAGE 2 OF 2  
 ADDRESS: PO Box 3144 PROJECT NAME: Albermarle  
 PHONE: 360 436 5521 FAX: \_\_\_\_\_ LOCATION: olympia, wa  
 CLIENT PROJECT #: 14251111 PROJECT MANAGER: Paul Stevens COLLECTOR: Paul Stevens DATE OF COLLECTION: 11/2/12

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES		NOTES	Total Number of Containers	Laboratory Note Number
					TPH - DIESEL	TPH - GASOLINE			
1. MW-1			no	glass	X	X			
2. MW-2					X	X			
3. MW-6					X	X			
4. MW-10					X	X			
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									

ANALYSES: TPH - DIESEL, TPH - GASOLINE, VOC B260, VOC B270, Semivol B270, PCB's B032, PCB's B032, PCPA 8 Metals, MTCA 8 Metals, Pb, Asbestos-PLM, GFO Suite, DRO Suite, WQ Suite  
 RECEIVED BY (Signature): [Signature] DATE/TIME: 11-2-12 1530  
 RELINQUISHED BY (Signature): [Signature] DATE/TIME: 11/2/2012  
 RECEIVED BY (Signature): [Signature] DATE/TIME: \_\_\_\_\_  
 RELINQUISHED BY (Signature): \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

SAMPLE RECEIPT  
 TOTAL NUMBER OF CONTAINERS: \_\_\_\_\_  
 CHAIN OF CUSTODY SEALS Y/N/A: \_\_\_\_\_  
 SEALS INTACT? Y/N/A: \_\_\_\_\_  
 RECEIVED GOOD COND./COLD: \_\_\_\_\_  
 NOTES: \_\_\_\_\_

LABORATORY NOTES: DIESEL ONLY  
 Turn Around Time: 24 HR 48 HR 5 DAY

ESN DISPOSAL @ \$2.00 each  Return  Pickup  
**SAMPLE DISPOSAL INSTRUCTIONS**

**GROUNDWATER SAMPLING EVENT  
REPORT**

RECEIVED

**FEBRUARY 2010**

'10 APR -6 P2:14

STATE  
DEPARTMENT OF ECOLOGY  
SW REGIONAL OFFICE

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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Telephone 360-438-9521 Fax 360-412-1225

February 25, 2010

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER SAMPLING REPORT FOR THE PHOENIX INN SITE LOCATED  
AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of the groundwater sampling event performed on the Phoenix Inn Site on February 14, 2010. The purpose of this groundwater sampling event was to measure the current levels of petroleum range contaminants in the groundwater at selected locations on the subject property and the adjacent public right of ways.

Due to logistical reasons, groundwater elevation and gradient information was not interpreted as part of this event.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and/or groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater is typically present at depths ranging between 4.00 and 7.50 feet b.g.s. in the monitoring wells associated with the subject property.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the south central, and southwestern portions of the site. The two (2) inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Monitoring Well Installation - Notice of Intent Forms were filed with Ecology.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

Due to the fact that the vehicles were parked over selected monitoring wells on selected days, the groundwater sampling was performed on two (2) separate days. Groundwater elevation data obtained during this sampling event was not suitable for determining groundwater gradients.

On February 14, and February 16, 2010, I obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17, and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and were analyzed for the presence of gasoline range T.P.H., diesel fuel range T.P.H., oil range T.P.H., and B.T.E.X.'s.

**Laboratory analyses results for water samples obtained from extended perimeter monitoring well samples #MW-10, 6-MW, PMW-1, PMW-4, MW-1, and MW-2, and on-site monitoring well samples, PMW-2, PMW-3, PMW-5, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17, and PMW-18 reported no presence of gasoline range T.P.H., diesel fuel range T.P.H., oil range T.P.H., and/or B.T.E.X.'s at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.**

**Laboratory analyses results for on-site monitoring well water samples # PMW-6 PMW-7 and PMW-11 reported the presence of lube oil range T.P.H. at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.**

**Laboratory analyses results for on-site monitoring well water samples #PMW-8, reported the presence of Benzene at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.**

The laboratory analyses results for this groundwater sampling event indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## 7.0 Laboratory Analyses

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8260.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.
2. All on-site workers were 40 hour Hazmat certified.
3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.
4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

The laboratory analyses results of this groundwater sampling event document the presence of Lube Oil range T.P.H., and Benzene at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use, in the groundwater present at selected locations on the subject property. Lube Oil T.P.H. has not previously/historically been identified as a contaminant of concern associated with the subsurface soils and waters on the subject property.

The laboratory analyses results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

Additional quantities of blended microbes, nutrients, and oxygen releasing solutions will be applied to the on-site subsurface soils and groundwater. Greater quantities of

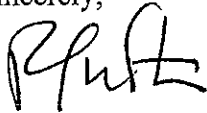
microbes will be introduced to the portions of the site where elevated levels of petroleum range contaminants remain in the subsurface soils and groundwater.

The direction of groundwater flow was not determined as part of this groundwater sampling event.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,

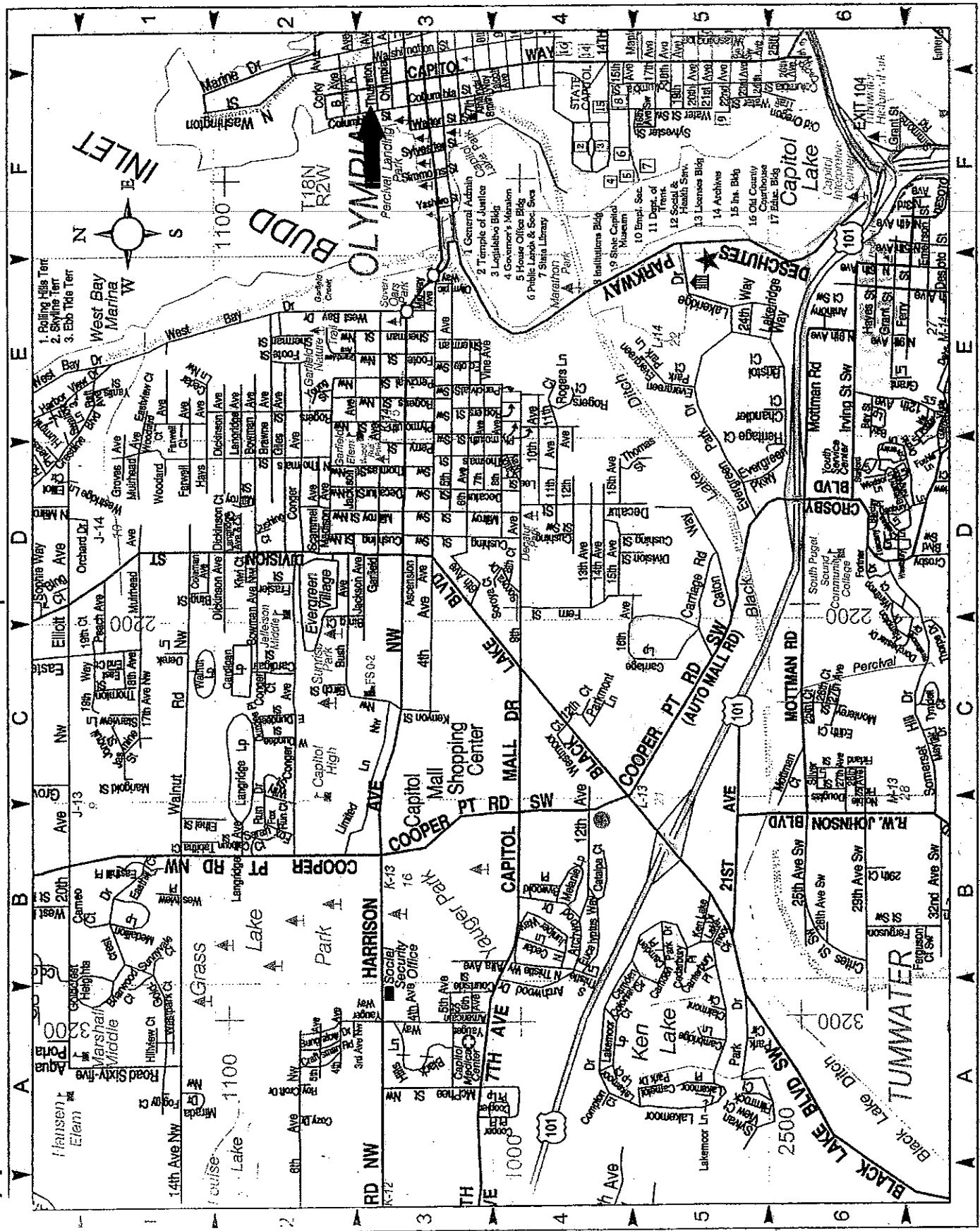
A handwritten signature in black ink, appearing to read 'P. Stemen', written over a horizontal line.

Paul W. Stemen  
Vice President

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# **APPENDIX A**

**SITE MAP  
MONITORING WELL LOCATION MAP  
LABORATORY ANALYSES TABLES  
LABORATORY ANALYSES DATA**



N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

N: =634297.89  
E: =401640.50

COLUMBIA ST.



"A" AVE.

PHOENIX INN

CAPITOL WAY

THURSTON AVE.

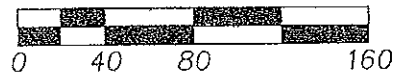
LEGEND

-  FOUND CASED MONUMENT
-  MONITOR WELL

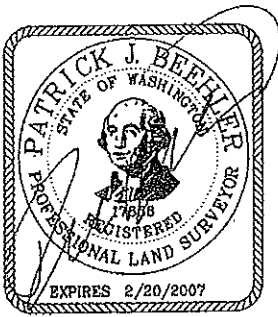
VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

Office: OLYMPIA / System: WFP-DLY-3C7KCB1 / User: J-JANZEE / Time: 03/14/2006 13:33:50

DESIGNED BY: JMM	CHECKED BY: PJB				
DRAWN BY: JMM	APPROVED BY: PJB				
LAST EDIT: _____	PLOT DATE: 03/14/06				
DATE	BY	REVZ	REVISION	CK'D	APPR
3/14/06	JMM	1	ADDITIONAL WELLS		



724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3972  
(360) 754-1188 Fax  
wfp140a.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	WASHINGTON
SCALE: 1"=80'	PROJECT NO. 034507
DRAWING FILE NAME: 34507-SURV-SB01	
1 SHEET 1	





PHOENIX INN LABORATORY ANALYSES CHARTS FOR MONITORING WELL WATERS

SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BTX COMPOUNDS			TOTAL PETROLEUM HYDROCARBONS				MINERAL OIL	LEAD
				BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL		
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PMW-5	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ug/L
PMW-5	12/28/06	6.2'	5:08 AM	ND	2.7	1.5	12	330	710	NA	NA	
PMW-5	10/22/07	5.85	8:31 AM	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-5	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-5	1/9/09	5.31'	12:05 PM	ND	ND	ND	ND	ND	ND	ND	NA	
PMW-5	5/22/09	6.03'	12:10 PM	ND	ND	ND	ND	ND	570	ND	NA	
PMW-5	2/14/10	5.32	1:00PM	ND	ND	ND	ND	ND	ND	ND	NA	
PMW-6	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-6	12/28/06	6.41'	5:11 AM	ND	ND	ND	ND	ND	350	NA	NA	
PMW-6	10/22/07	NM	9:10 AM	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-6	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-6	1/9/09	5.22'	11:40 AM	ND	2.4	ND	ND	ND	ND	ND	NA	
PMW-6	5/22/09	5.88	11:03 AM	ND	740	1.4	ND	200	ND	ND	NA	
PMW-6	2/14/10	5.31	1:48PM	ND	ND	ND	ND	290	ND	78000	NA	
PMW-7	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-7	12/28/06	5.8'	5:14 AM	ND	ND	ND	ND	ND	ND	NA	NA	
PMW-7	10/22/07	NM	9:35 AM	ND	ND	ND	ND	ND	ND	ND	ND	
PMW-7	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-7	1/9/09	5.19'	12:25 PM	ND	ND	ND	ND	ND	ND	ND	NA	
PMW-7	5/23/09	5.47'	10:29 AM	ND	27	ND	ND	100	ND	ND	NA	
PMW-7	2/14/10	5.26	2:06PM	ND	ND	ND	ND	ND	ND	550	NA	
PMW-8	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-8	12/28/06	6.49'	5:16 AM	170	6.5	4.4	87	1200	ND	NA	NA	<1
PMW-8	10/22/07	NM	9:04AM	3.1	4.7	ND	ND	ND	ND	ND	ND	
PMW-8	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
PMW-8	1/9/09	5.27'	1:05 PM	ND	ND	ND	ND	ND	ND	ND	NA	
PMW-8	5/22/09	6.11'	11:26 AM	52	600	13	11	970	400	ND	NA	
PMW-8	2/14/10	5.33	2:20PM	6.4	ND	1.8	ND	100	ND	ND	NA	



PHOENIX INN LABORATORY ANALYSES CHARTS FOR MONITORING WELL WATERS

SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BTEX COMPOUNDS			TOTAL PETROLEUM HYDROCARBONS				MINERAL OIL	EPA 239.2 LEAD
				BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL		
PMW-13	7/16/06	NT	NT	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PMW-13	12/28/06	5.99'	5:31 AM	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-13	10/22/07	NM	11:35AM	0.66	21	ND	ND	200	ND	ND	ND	ND
PMW-13	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-13	1/10/09	5.27'	9:00 AM	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-13	5/22/09	5.68'	1:20 PM	1.2	2500	1.7	6.1	510	620	ND	NA	NA
PMW-13	2/14/10	5.38	2:47PM	ND	ND	ND	ND	160	ND	ND	NA	NA
PMW-14	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-14	12/28/06	5.6'	5:33 AM	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-14	10/22/07	5.19	8:26 AM	ND	3.3	ND	ND	110	ND	ND	ND	ND
PMW-14	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-14	1/10/09	5.24'	9:20 AM	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-14	5/23/09	5.36'	10:43 AM	1.1	1400	1.2	7.6	730	1200	ND	NA	NA
PMW-14	2/14/10	5.37	3:01PM	1.2	2.1	ND	3.1	700	ND	ND	NA	NA
PMW-15	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-15	12/28/06	6.07'	5:36 AM	ND	450	ND	ND	ND	ND	ND	NA	NA
PMW-15	10/22/07	5.51	8:24 AM	ND	ND	ND	ND	ND	1700	ND	ND	ND
PMW-15	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-15	1/10/09	5.26'	9:45 AM	ND	450	ND	ND	1620	ND	ND	NA	NA
PMW-15	5/23/09	5.84'	10:59 AM	ND	410	ND	3	710	1500	ND	NA	NA
PMW-15	2/14/10	5.38	3:16PM	ND	2	ND	14	450	350	ND	NA	NA
PMW-16	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-16	12/28/06	5.19'	5:39 AM	ND	890	ND	ND	ND	ND	ND	NA	NA
PMW-16	10/22/07	4.75	8:14 AM	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-16	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-16	1/10/09	4.92'	10:10 AM	ND	890	ND	ND	3000	ND	ND	NA	NA
PMW-16	5/23/09	4.49'	11:21 AM	ND	240	ND	ND	360	530	ND	NA	NA
PMW-16	2/14/10	5.11	3:31PM	ND	ND	ND	6.6	330	ND	ND	NA	NA

PHOENIX INN LABORATORY ANALYSES CHARTS FOR MONITORING WELL WATERS

SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BTEX COMPOUNDS				TOTAL PETROLEUM HYDROCARBONS				MINERAL OIL	EPA 239.2 LEAD
				BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL OIL	MINERAL OIL	LEAD		
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PMW-17	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ug/L
PMW-17	12/28/06	5.22'	5:42 AM	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-17	10/22/07	NM	12:10 PM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-17	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-17	1/10/09	5.15'	11:05 AM	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
PMW-17	5/23/09	4.69'	11:43 AM	ND	ND	4.6	5.6	260	260	ND	ND	NA	NA
PMW-17	2/16/10	5.22	1:00PM	ND	230	ND	8.3	260	260	ND	ND	NA	NA
PMW-18	7/16/06	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-18	12/28/06	6.72'	5:45 AM	ND	1.6	ND	ND	ND	ND	ND	ND	NA	NA
PMW-18	10/22/07	6.32	8:33 AM	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-18	4/8/08	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
PMW-18	1/10/09	5.13'	10:30 AM	ND	1.6	ND	ND	ND	ND	ND	ND	NA	NA
PMW-18	5/23/09	6.43'	11:04 AM	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
PMW-18	2/14/10	5.17	3:44PM	ND	ND	3.5	ND	440	440	ND	ND	NA	NA
METHOD DETECTION LIMITS				1	1	1	3	100	250	40	40		
METHOD "A" CLEAN UP LEVELS				5	1000	700	1000	*800	500	500	500		
BTEX'S BY EPA METHOD 8260				GASOLINE TPH BY METHOD NWTPH-Gx				DIESEL/HEAVY OIL RANGE TPH BY METHOD NWTPH-Dx/Dx EXTENDED					
*BENZENE PRESENT IN WATERS				NT - NOT TESTED				NA - NOT ANALYZED					
<b>BOLD RESULTS ARE ABOVE MTCA METHOD A CLEAN UP LEVELS</b>				<b>NT - NOT TESTED</b>				<b>NM - NOT MEASURED</b>					

February 25, 2010

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

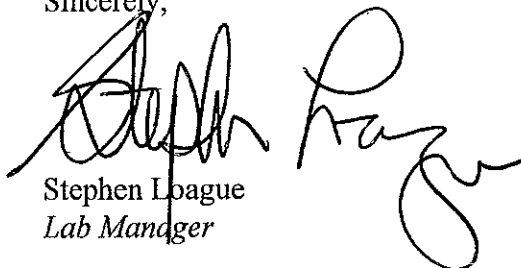
Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended with Silica Gel Clean-up, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on February 17 – 24, 2010.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weigh basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

  
Stephen Loague  
Lab Manager

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx with Silica Gel Clean Up**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	2/16/2010	2/16/2010	82	nd	nd
PMW-1	2/16/2010	2/16/2010	104	nd	nd
PMW-2	2/16/2010	2/16/2010	101	nd	nd
PMW-4	2/16/2010	2/17/2010	105	nd	nd
PMW-5	2/16/2010	2/17/2010	96	nd	nd
PMW-6	2/16/2010	2/17/2010	130	nd	<b>78000</b>
PMW-7	2/16/2010	2/17/2010	79	nd	<b>550</b>
PMW-8	2/16/2010	2/16/2010	104	nd	nd
PMW-9	2/16/2010	2/17/2010	63	nd	nd
PMW-13	2/16/2010	2/17/2010	80	nd	nd
PMW-14	2/16/2010	2/17/2010	81	nd	nd
PMW-15	2/16/2010	2/17/2010	145	<b>350</b>	nd
PMW-16	2/16/2010	2/17/2010	138	nd	nd
PMW-18	2/16/2010	2/17/2010	89	nd	nd
MW-1	2/16/2010	2/16/2010	61	nd	nd
MW-2	2/16/2010	2/16/2010	121	nd	nd
MW-6	2/16/2010	2/16/2010	52	nd	nd
MW-10	2/16/2010	2/17/2010	89	nd	nd
<b>Reporting Limits</b>				<b>250</b>	<b>500</b>

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
 PHOENIX INN PROJECT  
 Olympia, Washington

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 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analysis of Gasoline Range Organics, BTEX in Water by Method NWTPH-Gx/8260**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	2/22/2010	nd	nd	nd	nd	nd	111
LCS	2/22/2010	104%	99%	101%	101%	100%	99
PMW-1	2/22/2010	nd	nd	nd	nd	nd	110
PMW-2	2/22/2010	nd	nd	nd	nd	nd	109
PMW-2 Dup	2/22/2010	nd	nd	nd	nd	nd	114
PMW-4	2/22/2010	nd	nd	nd	nd	nd	110
PMW-5	2/22/2010	nd	nd	nd	nd	nd	110
PMW-6	2/22/2010	nd	nd	nd	nd	<b>290</b>	110
PMW-7	2/22/2010	nd	nd	nd	nd	nd	110
PMW-8	2/22/2010	<b>6.4</b>	nd	<b>1.8</b>	nd	<b>100</b>	109
PMW-9	2/22/2010	nd	nd	nd	nd	nd	112
PMW-13	2/22/2010	nd	nd	nd	nd	<b>160</b>	111
PMW-14	2/22/2010	<b>1.2</b>	<b>2.1</b>	nd	<b>3.1</b>	<b>700</b>	112
PMW-15	2/22/2010	nd	<b>2.0</b>	nd	<b>14</b>	<b>450</b>	110
PMW-16	2/22/2010	nd	nd	nd	<b>6.6</b>	<b>330</b>	111
PMW-18	2/22/2010	nd	nd	<b>3.5</b>	nd	<b>440</b>	112
MW-1	2/22/2010	nd	nd	nd	nd	nd	113
MW-1 Dup	2/22/2010	nd	nd	nd	nd	nd	115
MW-2	2/22/2010	nd	nd	nd	nd	nd	111
MW-6	2/22/2010	nd	nd	nd	nd	nd	110
MW-10	2/22/2010	nd	nd	nd	nd	nd	110
MW-1 MS	2/22/2010	111%	103%	105%	106%	---	100
MW-1 MSD	2/22/2010	111%	104%	107%	107%	---	102
Method Detection Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnsw.com

**Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	2/17/2010	2/17/2010	75	nd	nd
PMW-3	2/17/2010	2/17/2010	96	nd	nd
PMW-17	2/17/2010	2/17/2010	129	nd	nd
PMW-10	2/17/2010	2/17/2010	88	nd	nd
PMW-11	2/17/2010	2/17/2010	95	nd	<b>4300</b>
PMW-12	2/17/2010	2/17/2010	116	nd	nd
<b>Reporting Limits</b>				<b>250</b>	<b>500</b>

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
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 Olympia, Washington

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 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analysis of Gasoline Range Organics, BTEX in Water by Method NWTPH-Gx/8260**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	2/24/2010	nd	nd	nd	nd	nd	113
LCS	2/24/2010	93%	88%	87%	89%	100%	102
PMW-3	2/24/2010	nd	nd	nd	nd	nd	117
PMW-3 DUP	2/24/2010	nd	nd	nd	nd	nd	115
PMW-17	2/24/2010	nd	230	nd	8.3	260	113
PMW-10	2/24/2010	nd	nd	nd	nd	nd	116
PMW-11	2/24/2010	3.4	nd	nd	nd	nd	116
PMW-12	2/24/2010	nd	nd	nd	nd	nd	114
MS	2/24/2010	102%	95%	97%	97%	---	104
MSD	2/24/2010	104%	98%	97%	98%	---	105

Method Detection Limits                      1.0                      1.0                      1.0                      3.0                      100

"nd" Indicates not detected at the listed detection limits.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%



Environmental Services Network

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEMEN ENVIRONMENTAL INC. DATE: 2/15/10 PAGE 1 OF 1

ADDRESS: \_\_\_\_\_ PROJECT NAME: PHENIX IND

PHONE: 360 4387524 FAX: \_\_\_\_\_ LOCATION: Chymha, WA

CLIENT PROJECT #: PHENIX IND PROJECT MANAGER: Paul Steimen COLLECTOR: Paul Steimen DATE OF COLLECTION: 2/15/10

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number		
					TRH-HD	TRH-DIESEL & OIL	VOC 8260CL	VOC 8260	Semivol 8270	PCB's 8062	PCB's 8270	CL Particles 8081	MTC's 8 Meals	Asbestos-PLM				GRO Suite	DRO Suite
1. PmW-1				Clear	X	X													
2. PmW-2					X	X													
3. PmW-4					X	X													
4. PmW-5					X	X													
5. PmW-6					X	X													
6. PmW-7					X	X													
7. PmW-8					X	X													
8. PmW-5					X	X													
9. PmW-13					X	X													
10. PmW-14					X	X													
11. PmW-15					X	X													
12. PmW-16					X	X													
13. PmW-18					X	X													
14. PmW-1					X	X													
15. PmW-2					X	X													
16. PmW-6					X	X													
17. PmW-10					X	X													
18.																			

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_

SEALS INTACT? Y/N/A \_\_\_\_\_

RECEIVED GOOD COND./COLD \_\_\_\_\_

NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

### SAMPLE DISPOSAL INSTRUCTIONS

ESN DISPOSAL @ \$2.00 each  Return  Pickup

# CHAIN-OF-CUSTODY RECORD

CLIENT: Stank's Construction Inc DATE: 2/14/10 PAGE 1 OF 1

ADDRESS: \_\_\_\_\_ PROJECT NAME: Phoenix

PHONE: 3604389524 FAX: \_\_\_\_\_ LOCATION: Chrysalis, WA

CLIENT PROJECT #: Phoenix Inc PROJECT MANAGER: \_\_\_\_\_ COLLECTOR: April Stevens DATE OF COLLECTION: 2/14

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number		
					TPH - ACID & OIL	TPH - DIESEL & OIL	BTEX	VOC 8260CL	VOC 8280	Semivol 8270	PAH* 8270	PCB* 8082	CL pesticides 8081	PCRA 8 Metals				MTCA 5 Metals	Pb
1. Pmw-3			120	glass	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. Pmw-17			1		X	X	X	X	X	X	X	X	X	X	X	X	X		
3. Pmw-10			1		X	X	X	X	X	X	X	X	X	X	X	X	X		
4. Pmw-11					X	X	X	X	X	X	X	X	X	X	X	X	X		
5. Pmw-14					X	X	X	X	X	X	X	X	X	X	X	X	X		ONLY INDA
6.																			
7.																			
8.																			
9.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.																			
18.																			

REINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

REINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

**SAMPLE DISPOSAL INSTRUCTIONS**

ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_

SEALS INTACT? Y/N/A \_\_\_\_\_

RECEIVED GOOD COND./COLD \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY

**GROUNDWATER SAMPLING EVENT  
REPORT**

**MAY 2009**

**RECEIVED**

**AUG 26 2009**

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

June 25, 2009

Mr. Scott Rose

Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER SAMPLING REPORT FOR THE PHOENIX INN SITE LOCATED  
AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of the groundwater sampling event performed on the Phoenix Inn Site on May 22 & 23, 2009. The purpose of this groundwater sampling event was to measure the current levels of petroleum range contaminants in the groundwater at selected locations on the subject property and the adjacent public right of ways.

Due to logistical reasons, groundwater elevation and gradient information was not interpreted as part of this event.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater is typically present at depths ranging between 4.00 and 7.50 feet b.g.s. in the monitoring wells associated with the subject property.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the south central, and southwestern portions of the site. The two (2) inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Monitoring Well Installation - Notice of Intent Forms were filed with Ecology.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

Due to the fact that the vehicles were parked over selected monitoring wells on selected days, the groundwater sampling was performed on two (2) consecutive days. Groundwater elevation data obtained during this sampling event was not suitable for determining groundwater gradients.

On May 22, and May 23, 2009, I obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17, and PMW-18.

Monitoring well #PMW -11 did not contain recoverable quantities of water for proper purging and sampling.

Groundwater samples were immediately submitted for appropriate laboratory analyses and were analyzed for the presence of gasoline range T.P.H., diesel fuel range T.P.H., oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses results for water samples obtained from extended perimeter monitoring well samples #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring well samples # PMW-3, PMW-6, PMW-7, PMW-10, PMW-17 and PMW-18 reported no presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well water samples # PMW-2, PMW-5, , PMW-9, PMW-12, PMW-13, PMW-14, PMW-15, and PMW-16 reported the presence of diesel fuel range T.P.H. at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well water samples #PMW-2, and PMW-8, reported the presence of gasoline range T.P.H. at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well water samples #PMW-8, reported the presence of Benzene at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well water samples #PMW-14, reported the presence of Toluene at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

The laboratory analyses results for this groundwater sampling event indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

### **6.1 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8260.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## **7.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.
2. All on-site workers were 40 hour Hazmat certified.
3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.
4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 8.0 SUMMARY

The laboratory analyses results of this groundwater sampling event document the presence of gasoline range T.P.H., at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use, in the groundwater present at selected locations on the subject property.

The laboratory analyses results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

Based on these laboratory analyses results, additional quantities of nutritionally enhanced microbes and oxygen releasing solutions will be applied to the on-site subsurface soils and groundwater.

The direction of groundwater flow was not determined as part of this event.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,

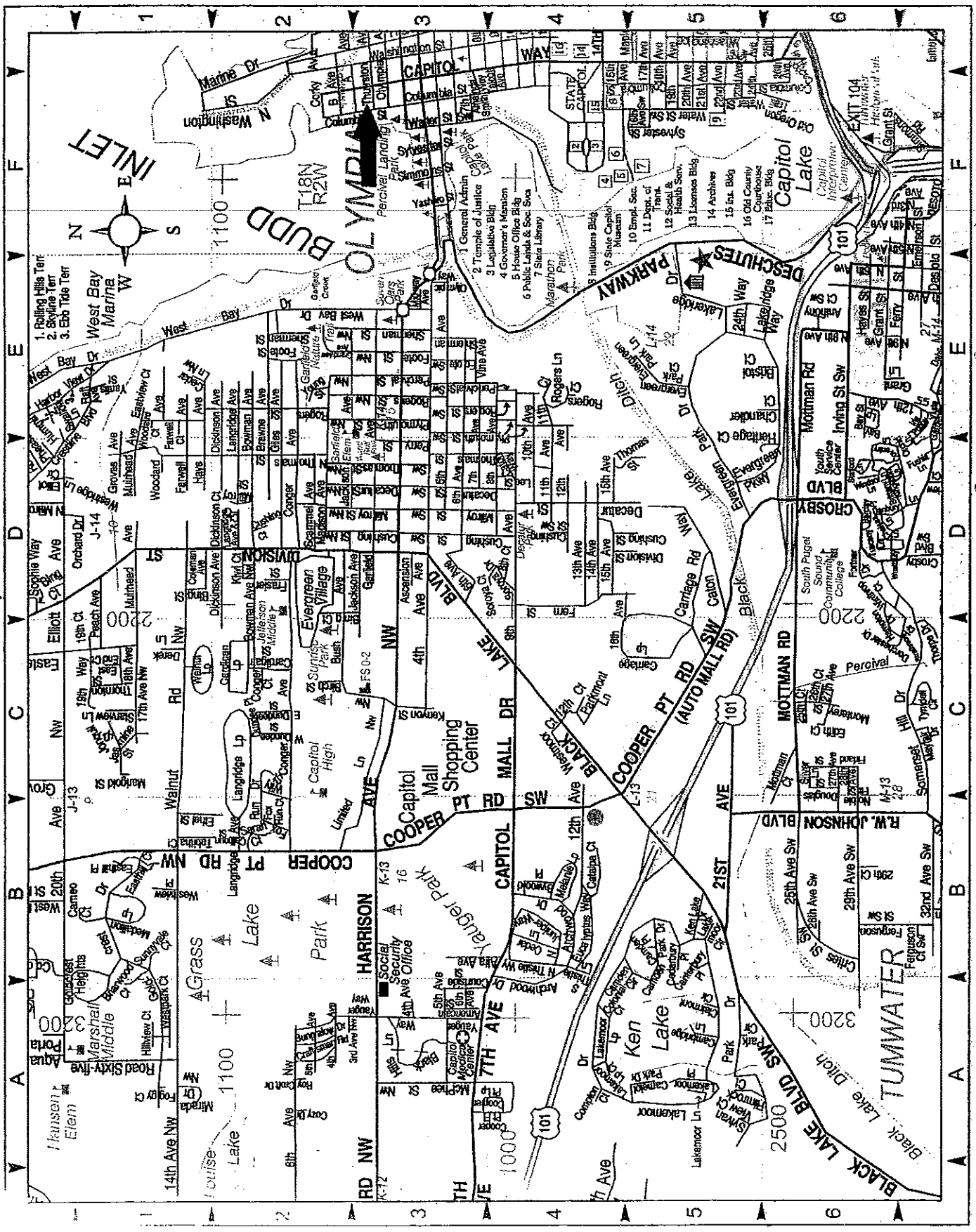


Paul W. Stemen  
Vice President

---

## **APPENDIX A**

# **LABORATORY CHARTS, ANALYSES, MONITORING WELL LOCATION MAP AND SITE MAP**



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N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

N: =634297.89  
E: =401640.50

COLUMBIA ST.

"A" AVE.

CAPITOL WAY



THURSTON AVE.

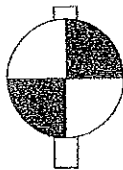
PHOENIX INN

PMW-18  
PMW-5  
PMW-7  
PMW-6  
PMW-2  
PMW-10  
PMW-11  
PMW-12  
PMW-16  
PMW-8  
PMW-14  
PMW-15

PMW-13  
PMW-9  
PMW-4

LEGEND

-  FOUND CASED MONUMENT
-  MONITOR WELL

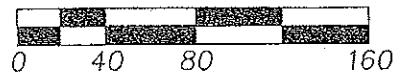


VERTICAL DATUM  
MEAN SEA LEVEL (MSL)

EL. =10.63

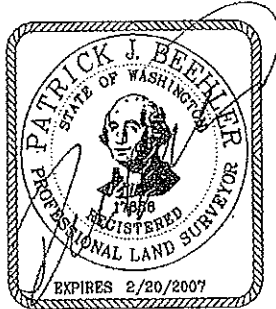
FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:

PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

Office: OLYMPIA | System: WSP-OLY-3C7KCB91 | User: JUNZEE | Time: 03/14/2006 13:33:50

DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/06		
DATE	BY	REV#	REVISION	CK'D	APPR.
3/14/06	JMM	1	ADDITIONAL WELLS		



724 Columbia Street NW  
Suite 140  
Olympia, Washington 98504  
(253) 254-5575  
(253) 754-1106 Fax  
w&hinc.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	PROJECT NO.	DRAWING FILE NAME:	WASHINGTON
SCALE: 1"=80'	034507	34507-SURV-SBO1	1 SHEET 1

PHOENIX INN

LABORATORY ANALYSES CHARTS FOR MONITORING WELL WATER SAMPLES													
BTEX COMPOUNDS													
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE			TOLUENE			ETHYL-BENZENE		TOTAL XYLENES	TOTAL PETROLEUM HYDROCARBONS
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
PMW-1	5/22/09	6.22'	10:23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-2	5/22/09	6.08	10:38	ND	94	5.7	8.4	820	960	ND	ND	ND	ND
PMW-3	5/23/09	5.72'	10:11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-4	5/22/09	5.16'	9:58	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-5	5/22/09	6.03'	12:10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PMW-6	5/22/09	5.88	11:03	ND	740	1.4	ND	200	ND	ND	ND	570	ND
PMW-7	5/23/09	5.47'	10:29	ND	27	ND	ND	100	ND	ND	ND	ND	ND
PMW-8	5/22/09	6.11'	11:26	52	600	13	11	970	400	ND	ND	ND	ND
PMW-9	5/22/09	6.14'	11:45	4.4	220	11	7.8	730	2000	ND	ND	ND	ND
PMW-10	5/22/09	7.03'	12:31										ND
PMW-12	5/22/09	6.88	12:00	2.1	36	1	8.2	370	2400	ND	ND	ND	ND
PMW-13	5/22/09	5.68'	13:20	1.2	2500	1.7	6.1	510	620	ND	ND	ND	ND
PMW-14	5/23/09	5.36'	10:43	1.1	1400	1.2	7.6	730	1200	ND	ND	ND	ND
PMW-15	5/23/09	5.84'	10:59	ND	410	ND	3	710	1500	ND	ND	ND	ND
PMW-16	5/23/09	4.49'	11:21	ND	240	ND	ND	360	530	ND	ND	ND	ND
PMW-17	5/23/09	4.69'	11:43	ND	ND	4.6	5.6	260	ND	ND	ND	ND	ND
PMW-18	5/23/09	6.43'	11:04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	5/23/09	5.09'	9:30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	5/22/09	5.37'	9:36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	5/23/09	5.54'	9:48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	5/22/09	4.38'	13:49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
METHOD DETECTION LIMITS				1	1	1	3	100	250	500			
METHOD "A" CLEAN UP LEVELS				5	1000	700	1000	*800	500	500			
*BENZENE PRESENT IN WATERS													
BTEX'S BY EPA METHOD 8260 GASOLINE TPH BY METHOD NWTPH-Gx DIESEL BY METHOD TPH Dx/Dx EXTENDED													

June 2, 2009

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on May 27 – June 1, 2009.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
*President*

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/L)	Oil (ug/L)
Method Blank	5/27/2009	101	nd	nd
PMW-1	5/27/2009	102	nd	nd
PMW-2	5/27/2009	95	<b>960</b>	nd
PMW-3	5/27/2009	107	nd	nd
PMW-4	5/27/2009	89	nd	nd
PMW-5	5/27/2009	98	<b>570</b>	nd
PMW-6	5/27/2009	84	nd	nd
PMW-7	5/28/2009	103	nd	nd
PMW-8	5/27/2009	97	<b>400</b>	nd
PMW-9	5/27/2009	130	<b>2000</b>	nd
PMW-10	5/28/2009	93	nd	nd
PMW-12	5/28/2009	106	<b>2400</b>	nd
PMW-13	5/27/2009	99	<b>620</b>	nd
PMW-14	5/27/2009	84	<b>1200</b>	nd
PMW-15	5/27/2009	106	<b>1500</b>	nd
PMW-16	5/28/2009	94	<b>530</b>	nd
PMW-17	5/27/2009	105	nd	nd
MW-1	5/28/2009	91	nd	nd
MW-2	5/27/2009	90	nd	nd
MW-6	5/27/2009	96	nd	nd
MW-10	5/27/2009	113	nd	nd
Method Detection Limits			250	500

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnmw.com

**Analyses of Gasoline & BTEX in Water by Method NWTPH-Gx/8260**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline (ug/L)	Surrogate Recovery (%)
Method Blank	5/28/2009	nd	nd	nd	nd	nd	86
LCS	5/28/2009	109%	115%	100%	98%	---	86
LCSD	5/28/2009	107%	112%	101%	97%	---	86
PMW-1	5/28/2009	nd	nd	nd	nd	nd	89
PMW-2	6/1/2009	nd	94	5.7	8.4	820	91
PMW-3	6/1/2009	nd	nd	nd	nd	nd	82
PMW-4	6/1/2009	nd	nd	nd	nd	nd	87
PMW-5	6/1/2009	nd	nd	nd	nd	nd	89
PMW-6	6/1/2009	nd	740	1.4	nd	200	88
PMW-7	6/1/2009	nd	27	nd	nd	100	89
PMW-8	6/1/2009	52	600	13	11	970	90
PMW-9	6/1/2009	4.4	220	11	7.8	730	88
PWM-9 DUP	6/1/2009	4.4	220	11	7.6	830	89
PMW-12	6/1/2009	2.1	36	1.0	8.2	370	87
PMW-13	6/1/2009	1.2	2500	1.7	6.1	510	89
PMW-14	6/1/2009	1.1	1400	1.2	7.6	730	90
PMW-15	6/1/2009	nd	410	nd	3.0	710	88
PMW-16	6/1/2009	nd	240	nd	nd	360	91
PMW-17	6/1/2009	nd	nd	4.6	5.6	260	91
MW-1	6/1/2009	nd	nd	nd	nd	nd	89
MW-2	6/1/2009	nd	nd	nd	nd	nd	89
MW-6	6/1/2009	nd	nd	nd	nd	nd	88
MW-10	6/1/2009	nd	nd	nd	nd	nd	86
MW-10 DUP	6/1/2009	nd	nd	nd	nd	nd	87
Method Detection Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%

**CHAIN-OF-CUSTODY RECORD**

CLIENT: STEMEN ENVIRONMENTAL INC.  
 ADDRESS: PO BOX 3644, WHELY, WA  
 PHONE: 360 438 9574 FAX: \_\_\_\_\_  
 CLIENT PROJECT #: PHENIX 1W PROJECT MANAGER: PAUL STEWARD

DATE: 5/16/09 PAGE 1 OF 1  
 PROJECT NAME: PHENIX FOOD  
 LOCATION: OLYMPIA, WA.  
 COLLECTOR: PAUL STEWARD DATE OF COLLECTION: 5/16/09

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														Total Number of Containers	Laboratory Note Number		
					VOA 8021B	VOA 8021B BTEX Only	VOA 8280	SEM VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (G & O)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH			Methamphetamine	Pb
1. MW-1			H2O	VIAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. MW-2				AMBER	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3. MW-6					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4. MW-10					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
13.																						
14.																						
15.																						
16.																						
17.																						
18.																						

RELINQUISHED BY (Signature) [Signature] DATE/TIME 5/26/09  
 RECEIVED BY (Signature) [Signature] DATE/TIME 5.26.09

SAMPLE RECEIPT  
 TOTAL NUMBER OF CONTAINERS \_\_\_\_\_  
 CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_  
 SEALS INTACT? Y/N/A \_\_\_\_\_  
 RECEIVED GOOD COND./COLD \_\_\_\_\_  
 LABORATORY NOTES: \_\_\_\_\_

SAMPLE DISPOSAL INSTRUCTIONS  
 ESN DISPOSAL @ \$2.00 each  Return  Pickup  
 NOTES: Turn Around Time: 24 HR 48 HR 5 DAY

**CHAIN-OF-CUSTODY RECORD**

CLIENT: STEMER Environmental Services Inc

DATE: Feb 10 9 PAGE 1 OF 1

ADDRESS: 20800 2644, WELY, BC

PROJECT NAME: Phenix Env

PHONE: 360 438 9324 FAX: \_\_\_\_\_

LOCATION: Colony Bay BC

CLIENT PROJECT #: Phenix PROJECT MANAGER: Paul Stemer

COLLECTOR: Paul Stemer DATE OF COLLECTION: 5/28/15

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														Total Number of Containers	Laboratory Note Number					
					VOA 8021B	VOA 8021B BTEX Only	VOA 8280	SEMI VOL 8270	TPH - HC10	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (o & o)	PAH 6100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH			Methamphetamine	Pb	Hex Chrome		
1. PMW-1			H2O	W/BS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. PMW-2					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-3				AM BSW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
5. PMW-5					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
6. PMW-6					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
7. PMW-7					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
8. PMW-8					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
9. PMW-9					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
10. PMW-9					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
11. PMW-10					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		empty VOA's
12. PMW-11					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		NO NUMBER
13. PMW-12					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14. PMW-13					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
15. PMW-14					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
16. PMW-15					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17. PMW-16					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18. PMW-17					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

RELINQUISHED BY (Signature) [Signature] DATE/TIME 5/26/09 RECEIVED BY (Signature) [Signature] DATE/TIME 5/26/09

SAMPLE RECEIPT  
TOTAL NUMBER OF CONTAINERS \_\_\_\_\_  
CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_  
SEALS INTACT? Y/N/A \_\_\_\_\_  
RECEIVED GOOD COND./COLD \_\_\_\_\_  
LABORATORY NOTES: [Signature]

REINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_  
SAMPLE DISPOSAL INSTRUCTIONS  
 ESN DISPOSAL @ \$2.00 each  Return  Pickup  
NOTES: Turn Around Time: 24 HR 48 HR 5 DAY

**GROUNDWATER SAMPLING EVENT  
REPORT**

**JANUARY, 2009**

**RECEIVED**  
AUG 26 2009  
Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

March 1, 2009

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER SAMPLING REPORT FOR THE PHOENIX INN SITE LOCATED  
AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of the groundwater sampling event performed on the Phoenix Inn Site on January 9, 2009. The purpose of this groundwater sampling event was to measure the current levels of petroleum range contaminants in the groundwater at selected locations on the subject property and the adjacent public right of ways.

Due to logistical reasons, groundwater elevation and gradient information was not interpreted as part of this event.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater is typically present at depths ranging between 4.00 and 7.50 feet b.g.s. in the monitoring wells associated with the subject property.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the south central and southwestern portions of the site. The two (2) inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Monitoring Well Installation - Notice of Intent Forms were filed with Ecology.

## **4.0 GROUNDWATER MONITORING**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

Due to the fact that the vehicles were parked over selected monitoring wells on selected days, the groundwater sampling was performed on two (2) consecutive days. Groundwater elevation data obtained during this sampling event was not suitable for determining groundwater gradients.

On January 9, and January 10, 2009, I obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17, and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and were analyzed for the presence of gasoline range T.P.H., diesel fuel range T.P.H., oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses results for water samples obtained from extended perimeter monitoring well samples #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring well samples # PMW-3, PMW-6, PMW-7, PMW-9, PMW-10, PMW-12, PMW-13, PMW-14, PMW-17 and PMW-18 reported no presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for on-site monitoring well samples #PMW-2, PMW-11, PMW-15, and PMW-16 reported the presence of gasoline range T.P.H. at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

Laboratory analyses results for monitoring well water samples #PMW-2, PMW-6, PMW-11, PMW-15, PMW-16, and PMW-18 reported the detectable presence of B.T.E.X.'s at levels that do not exceed MTCA Method A Clean Up Levels for Unrestricted Land Use.

The results of this groundwater sampling event indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## 7.0 Laboratory Analyses

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8260.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

The laboratory analyses results for this groundwater sampling event document the presence of gasoline range T.P.H., at levels that exceed MTCA Method A Clean Up Levels for Unrestricted Land Use, in the groundwater present at selected locations on the subject property.

The results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

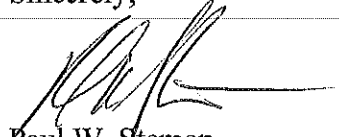
Based on these laboratory analyses results, additional quantities of nutritionally enhanced microbes and oxygen releasing solutions will be applied to the on-site subsurface soils and groundwater.

The direction of groundwater flow was not determined as part of this event.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,

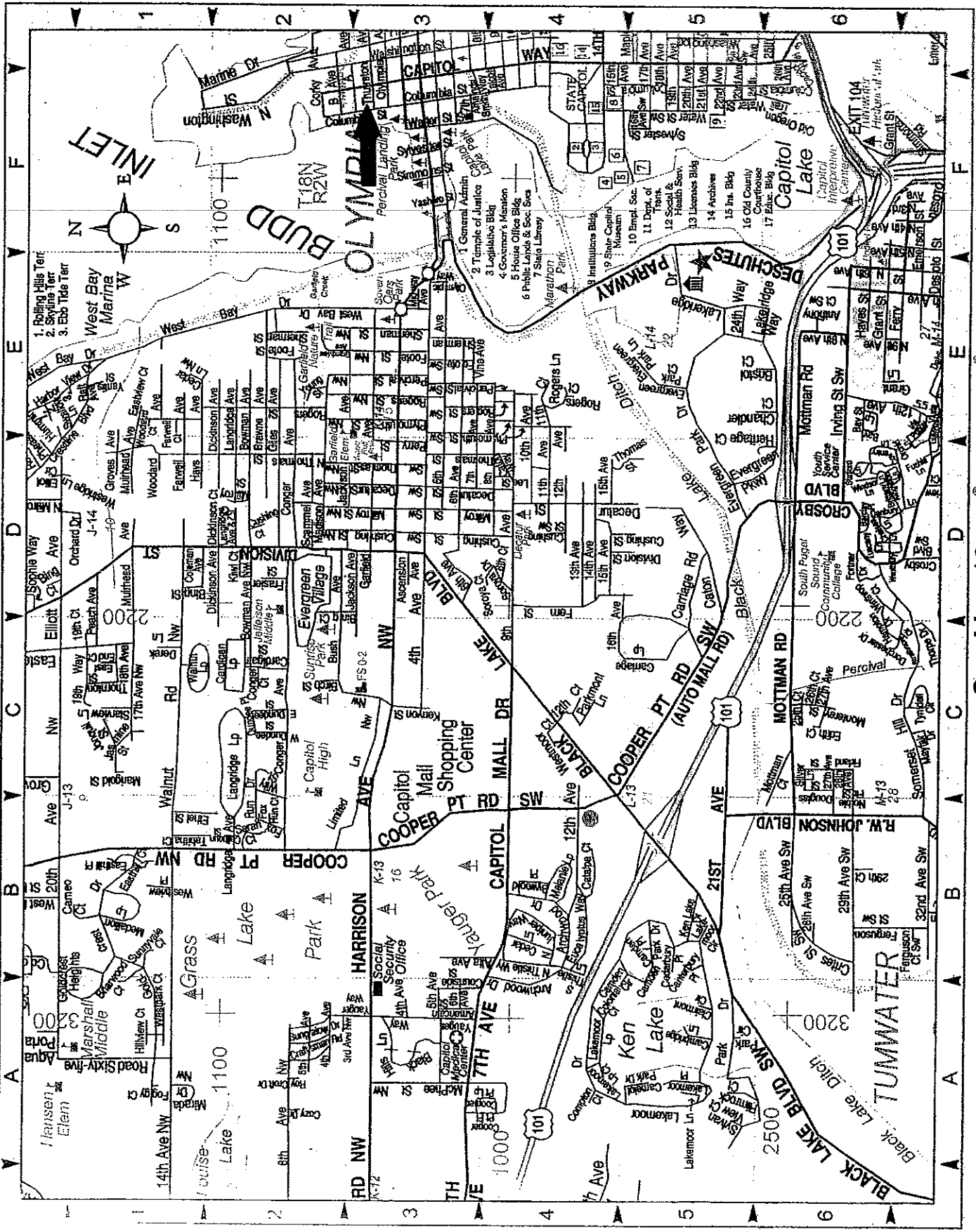
A handwritten signature in black ink, appearing to read 'Paul W. Stemen', with a long horizontal line extending to the right.

Paul W. Stemen  
Vice President

---

## **APPENDIX A**

# **LABORATORY CHARTS, ANALYSES, MONITORING WELL LOCATION MAP AND SITE MAP**



N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

N: =634297.89  
E: =401640.50

COLUMBIA ST.



"A" AVE.

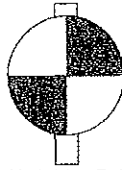
PHOENIX INN

CAPITOL WAY

THURSTON AVE.

LEGEND

-  FOUND CASED MONUMENT
-  MONITOR WELL



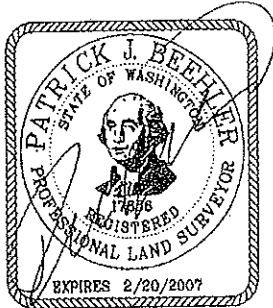
VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET




BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

Office: OLYMPIA / System: WHP-OLY-307KCS91 / User: JUNZEE / Time: 03/14/2006 13:33:50

DESIGNED BY:	JMM	CHECKED BY:	PJB
DRAWN BY:	JMM	APPROVED BY:	PJB
LAST EDIT:		PLOT DATE:	03/14/06
DATE	BY (REV)	REVISION	CK'D/APPR
3/14/06	JHL 1	ADDITIONAL WELLS	



224 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3273  
(360) 754-1158 Fax  
wajac@aol.com

**STEMEN ENVIRONMENTAL**  
**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	PROJECT NO. 034507	DRAWING FILE NAME: 34507-SURV-SB01	WASHINGTON 1 SHEET 1
SCALE: 1"=80'			

PHOENIX INN

LABORATORY ANALYSES CHARTS FOR MONITORING WELL WATER SAMPLES											
BTEX COMPOUNDS											
TOTAL PETROLEUM HYDROCARBONS											
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL	
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-6	1/9/09	5.21'	8:30	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	1/10/09	5.11'	8:15	ND	ND	ND	ND	ND	ND	ND	ND
MW-1	1/10/09	5.48'	7:10	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	1/10/09	6.61'	7:30	ND	ND	ND	ND	ND	ND	ND	ND
PMW-1	1/9/09	5.72'	9:30	ND	ND	ND	ND	ND	ND	ND	ND
PMW-2	1/9/09	5.18'	9:50	ND	390	1.6	3.9	2300	ND	ND	ND
PMW-3	1/10/09	4.81'	7:50	ND	ND	ND	ND	ND	ND	ND	ND
PMW-4	1/9/09	5.11'	8:50	ND	ND	ND	ND	ND	ND	ND	ND
PMW-5	1/9/09	5.31'	12:05	ND	ND	ND	ND	ND	ND	ND	ND
PMW-6	1/9/09	5.22'	11:40	ND	2.4	ND	ND	ND	ND	ND	ND
PMW-7	1/9/09	5.19'	12:25	ND	ND	ND	ND	ND	ND	ND	ND
PMW-8	1/9/09	5.27'	13:05	ND	ND	ND	ND	ND	ND	ND	ND
PMW-9	1/10/09	5.18'	8:35	ND	ND	ND	ND	ND	ND	ND	ND
PMW-10	1/9/09	5.12'	10:25	ND	ND	ND	ND	ND	ND	ND	ND
PMW-11	1/9/09	8.15'	10:45	2.8	690	ND	ND	2000	ND	ND	ND
PMW-12	1/9/09	5.13'	11:15	ND	ND	ND	ND	ND	ND	ND	ND
PMW-13	1/10/09	5.27'	9:00	ND	ND	ND	ND	ND	ND	ND	ND
PMW-14	1/10/09	5.24'	9:20	ND	ND	ND	ND	ND	ND	ND	ND
PMW-15	1/10/09	5.26'	9:45	ND	450	ND	ND	1520	ND	ND	ND
PMW-16	1/10/09	4.92'	10:10	ND	890	ND	ND	3000	ND	ND	ND
PMW-17	1/10/09	5.15'	11:05	ND	ND	ND	ND	ND	ND	ND	ND
PMW-18	1/10/09	5.13'	10:30	ND	1.6	ND	ND	ND	ND	ND	ND
METHOD DETECTION LIMITS				1	1	1	3	100	250	500	
METHOD "A" CLEAN UP LEVELS				5	1000	700	1000	*800	500	500	
*BENZENE PRESENT IN WATERS											
BTEX'S BY EPA METHOD 8260 GASOLINE TPH BY METHOD NWTPH-Gx DIESEL BY METHOD DxDx EXTENDED											



Environmental  
Services Network

January 15, 2009

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on January 13-15, 2009.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

A handwritten signature in cursive script that reads "Michael A. Korosec".

Michael A. Korosec  
*President*

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PHOENIX INN PROJECT  
Olympia, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/L)	Oil (ug/L)
Method Blank	1/13/2009	85	nd	nd
Method Blank	1/14/2009	104	nd	nd
MW-1	1/14/2009	115	nd	nd
MW-2	1/13/2009	90	nd	nd
MW-6	1/14/2009	99	nd	nd
MW-10	1/14/2009	70	nd	nd
PMW-1	1/13/2009	110	nd	nd
PMW-2	1/14/2009	84	nd	nd
PMW-3	1/13/2009	115	nd	nd
PMW-4	1/13/2009	110	nd	nd
PMW-4 Dup.	1/14/2009	110	nd	nd
PMW-5	1/14/2009	101	nd	nd
PMW-6	1/13/2009	110	nd	nd
PMW-7	1/14/2009	90	nd	nd
PMW-8	1/13/2009	100	nd	nd
PMW-9	1/13/2009	116	nd	nd
PMW-10	1/13/2009	120	nd	nd
PMW-11	1/14/2009	117	nd	nd
PMW-12	1/13/2009	100	nd	nd
PMW-13	1/14/2009	107	nd	nd
PMW-14	1/14/2009	97	nd	nd
PMW-15	1/13/2009	96	nd	nd
PMW-16	1/13/2009	105	nd	nd
PMW-17	1/13/2009	75	nd	nd
PMW-18	1/14/2009	77	nd	nd
Method Detection Limits			250	500

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc.  
 PHOENIX INN PROJECT  
 Olympia, Washington

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analyses of Gasoline & BTEX in Water by Method NWTPH-Gx/8260**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline (ug/L)	Surrogate Recovery (%)
Method Blank	1/15/2009	nd	nd	nd	nd	nd	121
LCS	1/15/2009	108%	120%	113%	115%	---	112
MW-1	1/15/2009	nd	nd	nd	nd	nd	121
MW-2	1/15/2009	nd	nd	nd	nd	nd	124
MW-6	1/15/2009	nd	nd	nd	nd	nd	122
MW-6 Dup.	1/15/2009	nd	nd	nd	nd	nd	119
MW-10	1/15/2009	nd	nd	nd	nd	nd	124
PMW-1	1/15/2009	nd	nd	nd	nd	nd	120
PMW-2	1/15/2009	nd	<b>390</b>	<b>1.6</b>	<b>3.9</b>	<b>2300</b>	121
PMW-3	1/15/2009	nd	nd	nd	nd	nd	121
PMW-4	1/15/2009	nd	nd	nd	nd	nd	119
PMW-5	1/15/2009	nd	nd	nd	nd	nd	119
PMW-6	1/15/2009	nd	<b>2.4</b>	nd	nd	nd	120
PMW-7	1/15/2009	nd	nd	nd	nd	nd	120
PMW-8	1/15/2009	nd	nd	nd	nd	nd	122
PMW-9	1/15/2009	nd	nd	nd	nd	nd	122
PMW-10	1/15/2009	nd	nd	nd	nd	nd	122
PMW-11	1/15/2009	<b>2.8</b>	<b>690</b>	nd	nd	<b>2000</b>	116
PMW-12	1/15/2009	nd	nd	nd	nd	nd	121
PMW-13	1/15/2009	nd	nd	nd	nd	nd	121
PMW-14	1/15/2009	nd	nd	nd	nd	nd	121
PMW-15	1/15/2009	nd	<b>450</b>	nd	nd	<b>1520</b>	120
PMW-16	1/15/2009	nd	<b>890</b>	nd	nd	<b>3000</b>	120
PMW-17	1/15/2009	nd	nd	nd	nd	nd	122
PMW-18	1/15/2009	nd	<b>1.6</b>	nd	nd	nd	120
Method Detection Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%



Environmental Services Network

Olympia: (360) 459-4670  
Bellevue: (360) 957-9872

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEMEN Environmental Inc

ADDRESS: \_\_\_\_\_

PHONE: 360 438 5521 FAX: \_\_\_\_\_

CLIENT PROJECT #: PHOENIX DAW PROJECT MANAGER: PAUL STEWART

DATE: 1/18/07 PAGE 1 OF 1

PROJECT NAME: PHOENIX DAW

LOCATION: Olympia, WA

COLLECTOR: PAUL STEWART DATE OF COLLECTION: 1/18/07

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES		NOTES	Total Number of Containers	Laboratory Note Number
					TPH-Diesel & Oil	TPH-Diesel			
1. Pmw-1			H2O	Vinyl	9	6			
2. Pmw-2									
3. Pmw-3									
4. Pmw-4									
5. Pmw-5									
6. Pmw-6									
7. Pmw-7									
8. Pmw-8									
9. Pmw-9									
10. Pmw-10									
11. Pmw-11									
12. Pmw-12									
13. Pmw-13									
14. Pmw-14									
15. Pmw-15									
16. Pmw-16									
17. Pmw-17									
18. Pmw-18									

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

**SAMPLE DISPOSAL INSTRUCTIONS**

ESN DISPOSAL @ \$2.00 each  Return  Pickup

**LABORATORY NOTES:**

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_

SEALS INTACT? Y/N/A \_\_\_\_\_

RECEIVED GOOD COND./COLD \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY



Environmental Services Network

Olympia: (360) 459-4670  
Bellevue: (360) 957-9872

# CHAIN-OF-CUSTODY RECORD

CLIENT: STERN Environmental Inc. DATE: 1/12/09 PAGE 1 OF 1

ADDRESS: \_\_\_\_\_ PROJECT NAME: Stemix Fund

PHONE: 360 438 9324 FAX: \_\_\_\_\_ LOCATION: Stemix Fund

CLIENT PROJECT #: PHENIX FUND PROJECT MANAGER: Paul Stern COLLECTOR: Paul Stern DATE OF COLLECTION: 1/3-1/12

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES		NOTES	Total Number of Containers	Laboratory Note Number
					TPH-HCD BTEX	TPH-Gasoline			
1. MW-1			170	Vinyl	X	X			
2. MW-2					X	X			
3. MW-6					X	X			
4. MW-10					X	X			
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME 1/12/09 RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME 1/12/09

SAMPLE DISPOSAL INSTRUCTIONS

ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/N/A \_\_\_\_\_

SEALS INTACT Y/N/A \_\_\_\_\_

RECEIVED GOOD COND./COLD \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY

**GROUNDWATER MONITORING  
REPORT**

**APRIL, 2008**

**RECEIVED**

AUG 26 2009

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

May 15, 2008

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER MONITORING REPORT FOR THE PHOENIX INN PROPERTY  
LOCATED AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of a limited groundwater monitoring event performed on the Phoenix Inn Site. The results of this groundwater monitoring event were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and/or groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.53 and 6.38 feet b.g.s. in the monitoring wells associated with this site on the date of these on-site groundwater monitoring activities.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s. to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s. and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Groundwater elevations were obtained from a total of fourteen (14) selected monitoring wells for the purposes determining groundwater gradient information.

The level of water was measured in all of the monitoring wells at the time representative water samples were obtained.

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

On April 8, 2008, a representative of Environmental Services Network Northwest, Inc. obtained samples of the waters present in the extended perimeter monitoring wells, #MW-6, PMW-1 PMW-4, and MW-2, and on-site monitoring wells # PMW-3, and PMW-9.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., and B.T.E.X.'s.

Due to an error on the part of the sampler, water samples were not submitted for analyses for the presence of diesel and oil range T.P.H.

The pH, Conductivity, Turbidity, Dissolved Oxygen, and Temperature levels of the sampled waters were measured as part of this event.

Laboratory analyses results for extended perimeter monitoring wells, #MW-6, PMW-1, PMW-4, and MW-2, and on-site monitoring wells # PMW-3, and PMW-9 reported no presence of gasoline range T.P.H. and/or B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

The pH, Conductivity, Turbidity, Dissolved Oxygen, and Temperature levels of the sampled waters were measured in the field using properly calibrated field meters.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the variable speed peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## 7.0 Laboratory Analyses

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8260.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

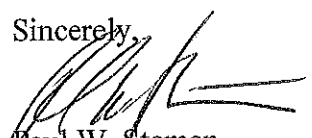
Laboratory analyses results for water samples obtained from extended perimeter monitoring wells MW-6, PMW-1 PMW-4, and MW-2, and on-site monitoring wells PMW-3, and PMW-9, reported no presence of gasoline range T.P.H., and/or B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well PMW-15 reported the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

The results of this groundwater monitoring event indicate that the in-situ bioremediation process is having a positive impact on the groundwater beneath the subject site.

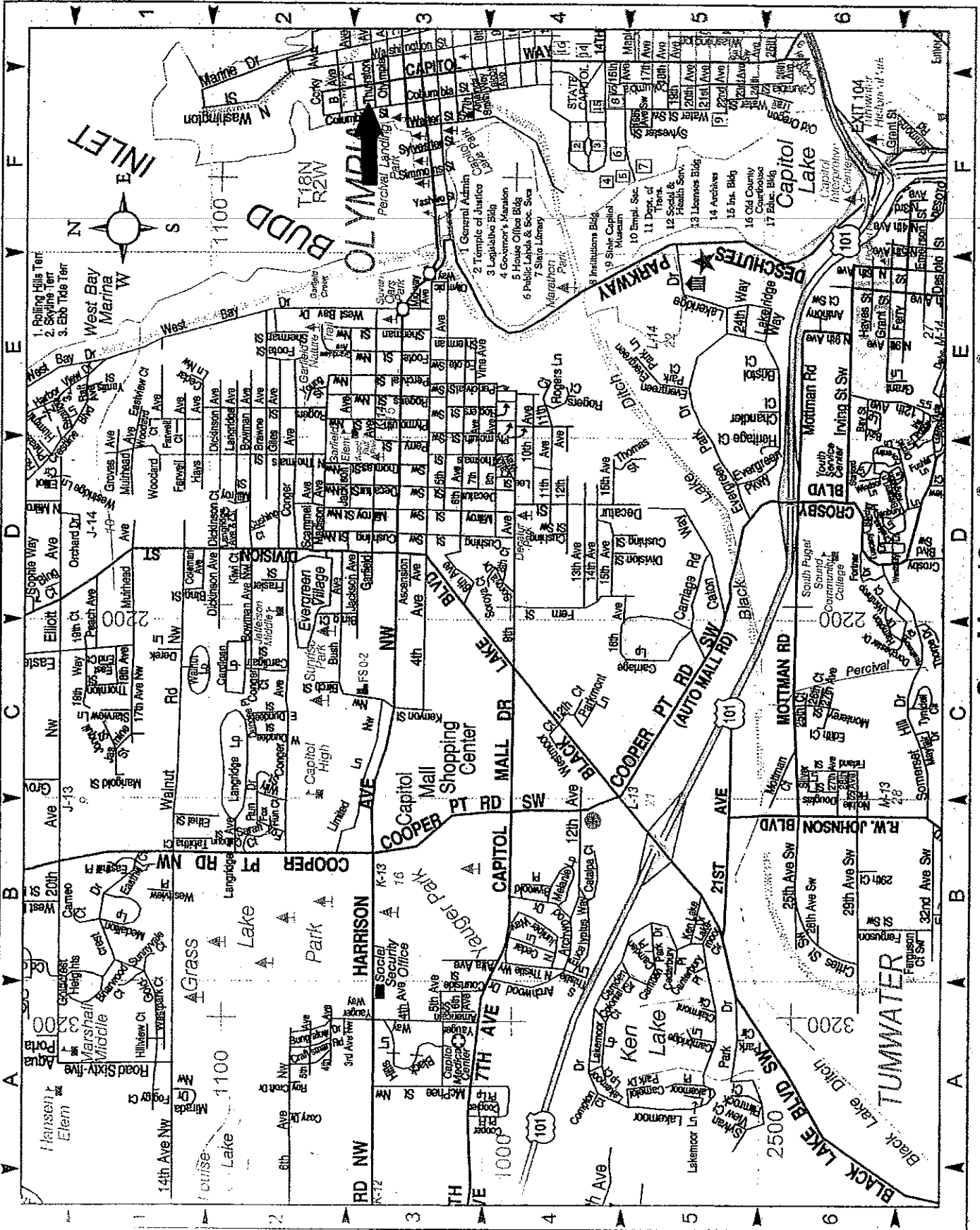
Due to length of time between groundwater elevation measurements, the direction of groundwater flow across the subject property was not determined. The varying times for water elevation measurements were caused by access limitations, to the various wells, at selected times.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,  
  
Paul W. Stemen  
Vice President

**APPENDIX A**

**LABORATORY CHARTS,  
ANALYSES, MONITORING  
WELL LOCATION MAP AND  
SITE MAP**



Copyright 2003 by the State of Washington, Department of Transportation. This map is a reproduction of the original map. All rights reserved. It is intended to reproduce, in whole or in part, the original map. It is not to be used for any other purpose without the written permission of the copyright owner.

N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

N: =634297.89  
E: =401640.50

COLUMBIA ST.



"A" AVE.

PHOENIX INN

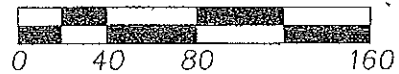
CAPITOL WAY

THURSTON AVE.

LEGEND

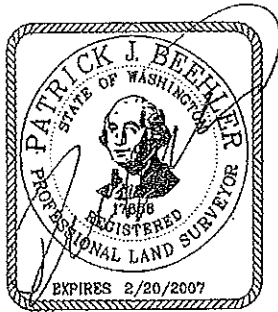
-  FOUND CASED MONUMENT
-  MONITOR WELL

SCALE: 1"=80 FEET



BASIS OF BEARING:

PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL: =10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

Office: OLYMPIA / System: WHP-OLY-3C7KCB9 / User: JINZEE / Time: 03/14/2006 13:33:50

DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/06		
DATE	BY	REV#	REVISION	CK'D	APPR.
3/14/06	JRL	1	ADDITIONAL WELLS		



224 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3375  
(360) 754-1198 Fax  
whe@whe.com

**STEMEN ENVIRONMENTAL**  
**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA SCALE: 1"=80'	PROJECT NO. 034507	DRAWING FILE NAME: 34507-SURV-SB01	WASHINGTON 1 SHEET 1
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PHOENIX INN

WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES										
BTEX COMPOUNDS										
TOTAL PETROLEUM HYDROCARBONS										
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE		
				ug/L	ug/L	ug/L	ug/L	ug/L		
PMW-1	4/8/08	6.14	VARIING	ND	ND	ND	ND	ND		
PMW-3	4/8/08	5.49	VARIING	ND	ND	ND	ND	ND		
PMW-4	4/8/08	5.03	VARIING	ND	ND	ND	ND	ND		
PMW-9	4/8/08	5.22	VARIING	ND	ND	ND	ND	ND		
MW-6	4/8/08	5.02	VARIING	ND	ND	ND	ND	ND		
MW-2	4/8/08	5.21	VARIING	ND	ND	ND	ND	ND		
METHOD DETECTION LIMITS				1	1	1	3	100		
METHOD "A" CLEAN UP LEVELS				5	1000	700	1000	*800		
*BENZENE PRESENT IN WATERS										
BTEX'S BY EPA METHOD 8260 GASOLINE TPH BY METHOD NWTPH-Gx DIESEL BY METHOD Dx/Dx EXTENDED										

April 23, 2008

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical report for the Phoenix Inn Project in Olympia, Washington. Water-sampling was conducted on April 8, 2008. Water samples were analyzed for Gasoline by NWTPH-Gx and BTEX by Method 8260 on April 15, 2008.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
*President*

## ESN NORTHWEST WELL SAMPLING

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

### Well Sampling Data

Well Number	Date Collected	Time Collected	Well Depth (feet)	Depth to Water (feet)	pH (units)	Conductivity (mS/cm)	Turbidity (ntu)	DO mg/L	Temperature (Celsius)
MW-2	4/8/2008	13:23-14:01	18.16	5.21	7.53	0.17	200	0.3	12.7
MW-6	4/8/2008	15:40-16:03	15.81	5.02	7.50	1.26	0.0	0.5	12.1
PMW-1	4/8/2008	12:25-13:05	12.15	6.14	7.78	0.19	2.0	0.1	13.6
PMW-3	4/8/2008	16:11-16:40	11.95	5.49	7.27	0.59	44	0.3	11.2
PMW-4	4/8/2008	14:15-14:55	12.18	5.03	6.73	0.42	300	0.5	11.5
PMW-9	4/8/2008	15:02-15:35	13.57	5.22	7.23	0.73	200	0.1	11.2

MW-1: Not sampled, due to a car parked over well. No access to MW-1.

Collected By: J. Price

ESN Northwest  
 Tel:(425) 957-9872, Fax: (425) 957-9904

Client: Stemen Environmental, Inc.  
 Client Job Name: Phoenix Inn

Analytical Results

NWTPH-Gx/8260 µg/l	MTH BLK	LCS	PMW-3	MW-6	PMW-9	PMW-4
Matrix	Water	Water	Water	Water	Water	Water
	Reporting					
Date analyzed	Limits	04/15/08	04/15/08	04/15/08	04/15/08	04/15/08
Gasoline	100	nd	118%	nd	nd	nd
Benzene	1.0	nd	94%	nd	nd	nd
Toluene	1.0	nd	113%	nd	nd	nd
Ethylbenzene	1.0	nd		nd	nd	nd
Xylenes	1.0	nd		nd	nd	nd
Surrogate recoveries:						
Dibromofluoromethane		129%	122%	127%	129%	131%
Toluene-d8		108%	107%	113%	107%	108%
4-Bromofluorobenzene		97%	98%	93%	98%	97%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 M - matrix interference  
 J - estimated value  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 65% TO 135%  
 Acceptable RPD limit: 35%

ESN Northwest  
 Tel: (425) 957-9872, Fax: (425) 957-9904

Client: Stemen Environmental,  
 Client Job Name: Phoenix Inn

Analytical Results

NWTPH-Gx/8260 µg/l	DUP						RPD
	MW-2	PMW-1	PMW-1	MS	MSD		
Matrix	Water	Water	Water	Water	Water	Water	
	Reporting						
Date analyzed	Limits	04/15/08	04/15/08	04/15/08	04/15/08	04/15/08	
Gasoline	100	nd	nd	nd	--	--	
Benzene	1.0	nd	nd	nd	95%	95%	0%
Toluene	1.0	nd	nd	nd	112%	111%	1%
Ethylbenzene	1.0	nd	nd	nd			
Xylenes	1.0	nd	nd	nd			
Surrogate recoveries:							
Dibromofluoromethane		132%	131%	134%	124%	126%	
Toluene-d8		107%	106%	110%	106%	106%	
4-Bromofluorobenzene		98%	96%	99%	90%	97%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

# GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: MW-2

Sample #: MW-2

Project Number: _____	Date: <u>4/8/09</u>
Project Name: <u>Phoenix Fur</u>	Location: _____
Project Address: _____	Sampled By: <u>JP</u>
Client Name: <u>Stevens</u>	Purged By: _____
Casing Diameter:      2" <input checked="" type="checkbox"/> 4" _____      6" _____      Other _____	

Depth to Water (feet): <u>5.21</u>	Purge Volume Measurement Method: _____
Depth of Well (feet): <u>18.16</u>	Date Purged: <u>4/8/09</u>
Reference Point (surveyors notch, etc.): <u>North</u>	Purge Time (from/to): <u>1323</u>
Day/Time Sampled: <u>1323</u>	Water Level Probe Used: _____

Purge Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(3 \text{ casing volumes})$   
 Purge Volume (gallons) for 2" = (0.49)(h); 4" = (1.96) (h); 6" = (4.41) (h)  
 Calculated Purge Volume (gallons): \_\_\_\_\_ Actual Purge Volume (gallons): \_\_\_\_\_

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	COLOR (visual)	TURBIDITY (visual)	ODOR DC	OTHER
<u>1352</u>	_____	<u>7.53</u>	<u>165</u>	_____	<u>201</u>	<u>35</u>	<u>12.7</u>
<u>1355</u>	_____	<u>7.53</u>	<u>164</u>	_____	<u>201</u>	<u>27</u>	<u>12.7</u>
<u>1358</u>	_____	<u>7.53</u>	<u>164</u>	_____	<u>201</u>	<u>29</u>	<u>12.7</u>
<u>1401</u>	_____	<u>7.53</u>	<u>165</u>	_____	<u>201</u>	<u>25</u>	<u>12.7</u>
_____	_____	_____	_____	_____	_____	_____	_____

Purging Equipment: _____	Sampling Equipment: _____
--------------------------	---------------------------

Laboratory: _____	Date Sent to Lab: _____
Chain-of-Custody (yes/no): _____	Field CC Sample Number: _____
Shipment Method: _____	Split with (names/organizations): _____

Well Integrity: _____				
Quantity:	Container:	Preservatives:	Filtered (type):	Remarks:

Signature: \_\_\_\_\_

# GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: MW-6

Sample #: \_\_\_\_\_

Project Number: _____	Date: <u>4/8/08</u>
Project Name: _____	Location: _____
Project Address: _____	Sampled By: _____
Client Name: _____	Purged By: _____
Casing Diameter:      2" _____ 4" _____ 6" _____ Other _____	

Depth to Water (feet): <u>5.02</u>	Purge Volume Measurement Method: _____
Depth of Well (feet): <u>15.81</u>	Date Purged: _____
Reference Point (surveyors notch, etc.): _____	Purge Time (from/to): _____
Day/Time Sampled: <u>1540</u>	Water Level Probe Used: _____

Purge Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(3 \text{ casing volumes})$   
 Purge Volume (gallons) for 2" = (0.49)(h); 4" = (1.96) (h); 6" = (4.41) (h)  
 Calculated Purge Volume (gallons): \_\_\_\_\_ Actual Purge Volume (gallons): \_\_\_\_\_

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	COLOR (visual)	TURBIDITY (visual)	ODOR PC	OTHER
<u>1557</u>	_____	<u>7.50</u>	<u>1.25</u>	_____	<u>0</u>	<u>152</u>	<u>12.0</u>
<u>1600</u>	_____	<u>7.50</u>	<u>1.26</u>	_____	<u>0</u>	<u>150</u>	<u>12.1</u>
<u>1603</u>	_____	<u>7.50</u>	<u>1.26</u>	_____	<u>0</u>	<u>147</u>	<u>12.1</u>
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

Purging Equipment: _____	Sampling Equipment: _____
--------------------------	---------------------------

Laboratory: _____	Date Sent to Lab: _____
Chain-of-Custody (yes/no): _____	Field CC Sample Number: _____
Shipment Method: _____	Split with (names/organizations): _____

Well Integrity: _____				
Quantity:	Container:	Preservatives:	Filtered (type):	Remarks:

Signature: \_\_\_\_\_

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



# GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: DMW-3

Sample #: DMW-3

Project Number: \_\_\_\_\_ Date: 4/8/08  
 Project Name: \_\_\_\_\_ Location: \_\_\_\_\_  
 Project Address: \_\_\_\_\_ Sampled By: \_\_\_\_\_  
 Client Name: \_\_\_\_\_ Purged By: \_\_\_\_\_

Casing Diameter: 2" \_\_\_\_\_ 4" \_\_\_\_\_ 6" \_\_\_\_\_ Other \_\_\_\_\_

Depth to Water (feet): 5.49 Purge Volume Measurement Method: \_\_\_\_\_  
 Depth of Well (feet): 11.95 Date Purged: 4/8/08  
 Reference Point (surveyors notch, etc.): \_\_\_\_\_ Purge Time (from/to): \_\_\_\_\_  
 Day/Time Sampled: 1611 Water Level Probe Used: \_\_\_\_\_

Purge Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(3 \text{ casing volumes})$   
 Purge Volume (gallons) for 2" = (0.49)(h); 4" = (1.96)(h); 6" = (4.41)(h)  
 Calculated Purge Volume (gallons): \_\_\_\_\_ Actual Purge Volume (gallons): \_\_\_\_\_

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	COLOR (visual)	TURBIDITY (visual)	ODOR	OTHER
<u>1631</u>	_____	<u>7.30</u>	<u>589</u>	_____	<u>45</u>	<u>30</u>	<u>11.2</u>
<u>1634</u>	_____	<u>7.28</u>	<u>591</u>	_____	<u>45</u>	<u>27</u>	<u>11.2</u>
<u>1637</u>	_____	<u>7.28</u>	<u>592</u>	_____	<u>44</u>	<u>27</u>	<u>11.2</u>
<u>1640</u>	_____	<u>7.27</u>	<u>592</u>	_____	<u>44</u>	<u>26</u>	<u>11.2</u>
_____	_____	_____	_____	_____	_____	_____	_____

Purging Equipment: \_\_\_\_\_ Sampling Equipment: \_\_\_\_\_

Laboratory: \_\_\_\_\_ Date Sent to Lab: \_\_\_\_\_  
 Chain-of-Custody (yes/no): \_\_\_\_\_ Field CC Sample Number: \_\_\_\_\_  
 Shipment Method: \_\_\_\_\_ Split with (names/organizations): \_\_\_\_\_

Well Integrity: \_\_\_\_\_

Quantity:	Container:	Preservatives:	Filtered (type):	Remarks:

Signature: \_\_\_\_\_

# GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: PWW-4

Sample #: PWW-4

Project Number: _____	Date: <u>4/8/05</u>
Project Name: <u>Phoenix Inn</u>	Location: <u>Phoenix Inn</u>
Project Address: _____	Sampled By: _____
Client Name: <u>Stemen</u>	Purged By: _____
Casing Diameter: 2" <input checked="" type="checkbox"/> 4" _____ 6" _____ Other _____	

Depth to Water (feet): <u>5.03</u>	Purge Volume Measurement Method: _____
Depth of Well (feet): <u>12.18</u>	Date Purged: _____
Reference Point (surveyors notch, etc.): <u>Casings</u>	Purge Time (from/to): _____
Day/Time Sampled: <u>1415</u>	Water Level Probe Used: _____

Purge Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(3 \text{ casing volumes})$   
 Purge Volume (gallons) for 2" = (0.49)(h); 4" = (1.96) (h); 6" = (4.41) (h)  
 Calculated Purge Volume (gallons): \_\_\_\_\_ Actual Purge Volume (gallons): \_\_\_\_\_

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	COLOR (visual)	TURBIDITY (visual)	<del>ODOR</del> DO	OTHER
<u>1443</u>	_____	<u>6.74</u>	<u>.421</u>	_____	<u>304</u>	<u>.75</u>	<u>11.5°C</u>
<u>1446</u>	_____	<u>6.73</u>	<u>.420</u>	_____	<u>304</u>	<u>.60</u>	<u>11.5°C</u>
<u>1449</u>	_____	<u>6.73</u>	<u>.420</u>	_____	<u>304</u>	<u>.58</u>	<u>11.5°C</u>
<u>1452</u>	_____	<u>6.73</u>	<u>.420</u>	_____	<u>304</u>	<u>.629</u>	<u>11.5</u>
<u>1455</u>	_____	<u>6.73</u>	<u>.420</u>	_____	<u>304</u>	<u>.46</u>	<u>11.5</u>

Purging Equipment: \_\_\_\_\_ Sampling Equipment: \_\_\_\_\_

Laboratory: _____	Date Sent to Lab: _____
Chain-of-Custody (yes/no): _____	Field CC Sample Number: _____
Shipment Method: _____	Split with (names/organizations): _____

Well Integrity: \_\_\_\_\_

Quantity:	Container:	Preservatives:	Filtered (type):	Remarks:

Signature: \_\_\_\_\_

# GROUNDWATER SAMPLING FIELD DATA SHEET

Well #: AMW-9 <sup>AMW-9</sup>

Sample #: AMW-2

Project Number: \_\_\_\_\_ Date: 4/18/08  
 Project Name: \_\_\_\_\_ Location: \_\_\_\_\_  
 Project Address: \_\_\_\_\_ Sampled By: \_\_\_\_\_  
 Client Name: \_\_\_\_\_ Purged By: \_\_\_\_\_

Casing Diameter: 2" \_\_\_\_\_ 4" \_\_\_\_\_ 6" \_\_\_\_\_ Other \_\_\_\_\_

Depth to Water (feet): 5.22 Purge Volume Measurement Method: \_\_\_\_\_  
 Depth of Well (feet): 13.57 Date Purged: 4/18/08  
 Reference Point (surveyors notch, etc.): Notch Purge Time (from/to): 1502  
 Day/Time Sampled: 1502 Water Level Probe Used: \_\_\_\_\_

Purge Volume Calculation:  $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(3 \text{ casing volumes})$   
 Purge Volume (gallons) for 2" =  $(0.49)(h)$ ; 4" =  $(1.96)(h)$ ; 6" =  $(4.41)(h)$   
 Calculated Purge Volume (gallons): \_\_\_\_\_ Actual Purge Volume (gallons): \_\_\_\_\_

TIME (2400 hr)	CUMULATIVE VOLUME (gal)	pH (units)	EC (umhos/cm 25 c)	COLOR (visual)	TURBIDITY (visual)	ODOR	OTHER
		<u>7.23</u>	<u>732</u>		<u>201</u>	<u>.28</u>	<u>11.2</u>
		<u>7.23</u>	<u>733</u>		<u>201</u>	<u>.16</u>	<u>11.2</u>
		<u>7.23</u>	<u>731</u>		<u>201</u>	<u>.06</u>	<u>11.2</u>
		<u>7.23</u>	<u>732</u>		<u>201</u>	<u>.01</u>	<u>11.2</u>

Purging Equipment: \_\_\_\_\_ Sampling Equipment: \_\_\_\_\_

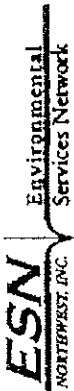
Laboratory: \_\_\_\_\_ Date Sent to Lab: \_\_\_\_\_  
 Chain-of-Custody (yes/no): \_\_\_\_\_ Field CC Sample Number: \_\_\_\_\_  
 Shipment Method: \_\_\_\_\_ Split with (names/organizations): \_\_\_\_\_

Well Integrity: \_\_\_\_\_

Quantity:	Container:	Preservatives:	Filtered (type):	Remarks:

Signature: \_\_\_\_\_

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



Olympia: (360) 459-4670  
Bellevue: (360) 957-9872

# CHAIN-OF-CUSTODY RECORD

CLIENT: Stevens Environmental, Inc DATE: 4/10/08 PAGE: 1 OF 1

ADDRESS: \_\_\_\_\_ PROJECT NAME: Phoenix Inn

PHONE: \_\_\_\_\_ LOCATION: Olympia, Washington

CLIENT PROJECT #: \_\_\_\_\_ PROJECT MANAGER: Paul Stevens COLLECTOR: J.P. DATE OF COLLECTION: \_\_\_\_\_

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number		
					TPH-HCID	VOC BTEX	VOC BTEX	TPH-Gasoline	TPH-Diesel	TPH-Diesel & Oil	PCB's 8270	PCB's 8082	PCB's 8082	PCB's 8270				PCRA & Metals	Pb
1. PMW-3			Water	Voa	X	X	X	X	X	X	X	X	X	X	X	X	X	3	
2. MW-6					X	X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-9					X	X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X	X		
5. MW-Z					X	X	X	X	X	X	X	X	X	X	X	X	X		
6. PMW-1					X	X	X	X	X	X	X	X	X	X	X	X	X		
7.																			
8.																			
9.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.																			
18.																			

REINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME: \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

REINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME: 4/10/08 1640 RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME: \_\_\_\_\_

SAMPLE DISPOSAL INSTRUCTIONS: \_\_\_\_\_

ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES: \_\_\_\_\_

TOTAL NUMBER OF CONTAINERS: 18

CHAIN OF CUSTODY SEALS Y/N/A: \_\_\_\_\_

SEALS INTACT? Y/N/A: \_\_\_\_\_

RECEIVED GOOD COND. COLD: \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY

**GROUNDWATER MONITORING  
REPORT**

**OCTOBER, 2007**

**RECEIVED**

AUG 26 2009

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

November 7, 2007

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: GROUNDWATER MONITORING REPORT FOR THE PHOENIX INN PROPERTY  
LOCATED AT 415 CAPITOL WAY N., OLYMPIA, WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of the groundwater monitoring event performed on the Phoenix Inn Site on October 22, 2007. The results of this groundwater monitoring event will be used for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and/or groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.53 and 6.38 feet b.g.s. in the monitoring wells associated with this site on the date of these on-site groundwater monitoring activities.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s. to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Groundwater elevations were obtained from a total of fourteen (14) selected monitoring wells for the purposes determining groundwater gradient information.

The level of water was measured in all of the monitoring wells at the time representative water samples were obtained.

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

On October 22, 2007, I obtained representative samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well PMW-15 reported the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

All of the other laboratory analyses results reported no presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels.

The results of these groundwater monitoring activities indicate that in-situ bioremediation process is having a positive effect on the groundwater beneath the subject site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property are discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak of Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the variable speed peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## 7.0 Laboratory Analyses

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells MW-10, MW-6, PMW-1, PMW-4, MW-1, and MW-2, and on-site monitoring wells PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, , PMW-16, PMW-17, and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well PMW-15 reported the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

The results of this groundwater monitoring event indicate that the in-situ bioremediation process is having a positive impact on the groundwater beneath the subject site.

The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul W. Stemen', with a long horizontal flourish extending to the right.

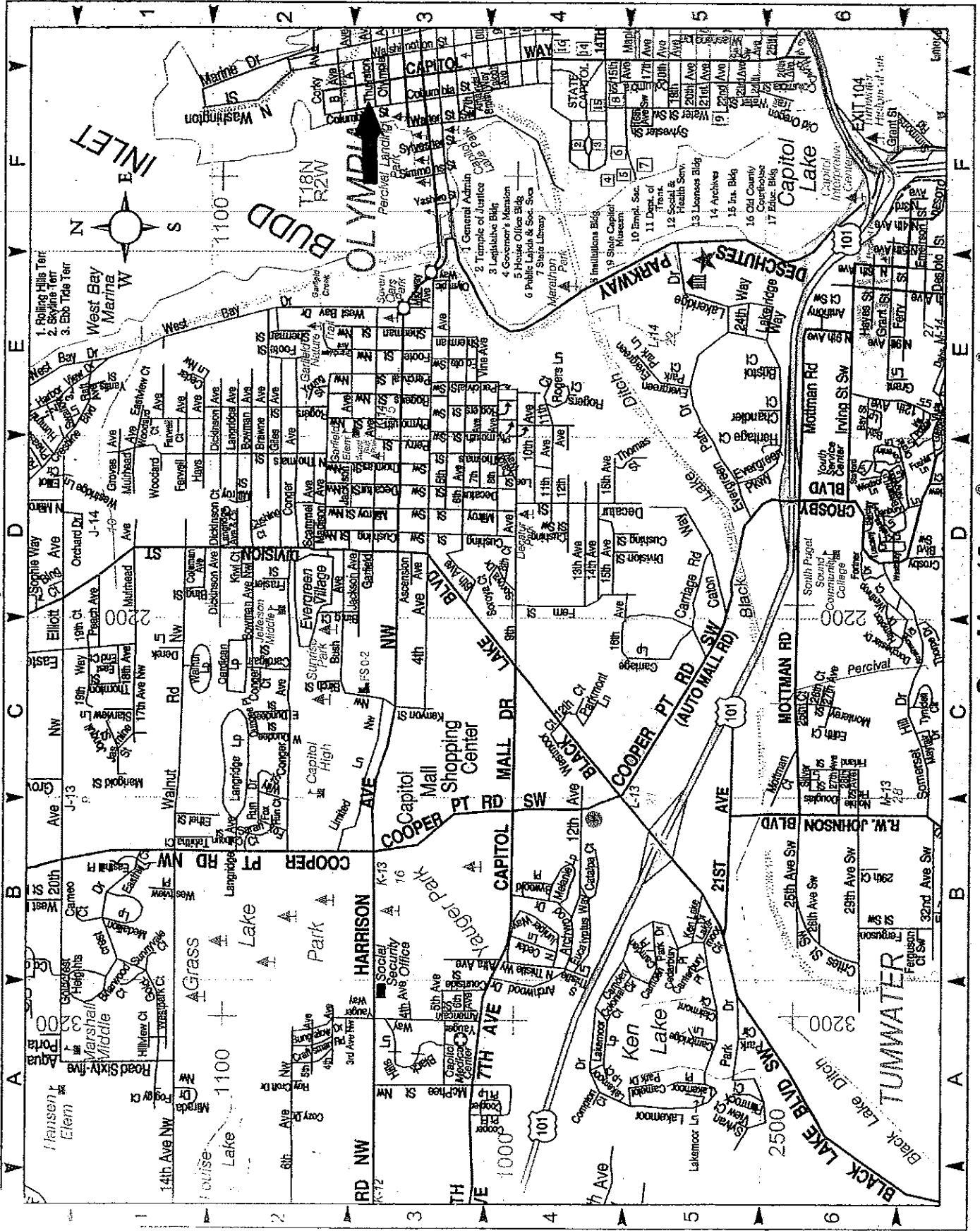
Paul W. Stemen  
Vice President

---

---

## **APPENDIX A**

# **LABORATORY CHARTS, ANALYSES, MONITORING WELL LOCATION MAP AND SITE MAP**



N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

COLUMBIA ST.

CAPITOL WAY

"A" AVE.

THURSTON AVE.

PHOENIX INN

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

PMW-5  
PMW-7  
PMW-16  
PMW-14  
PMW-15  
PMW-17  
PMW-8

PMW-6  
PMW-2  
PMW-10  
PMW-11  
PMW-12



N: =634276.33  
E: =401340.91  
EL: =10.63

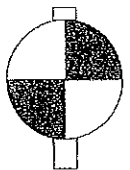
N: =634297.89  
E: =401640.50

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

LEGEND

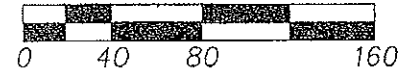
-  FOUND CASED MONUMENT
-  MONITOR WELL



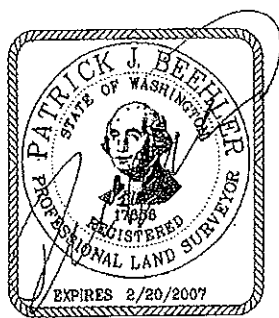
VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1-A-2006

Office: OLYMPIA | System: WFP-CLY-307K0391 | User: JINZEE | Time: 03/14/2006 13:33:50

DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/06		
DATE	BY	REV	REVISION	CK'D	APPR
3/14/06	JMM	1	ADDITIONAL WELLS		



724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 566-3375  
(360) 764-1154 Fax  
wheusa.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	WASHINGTON
SCALE: 1"=80'	PROJECT NO. 034507
DRAWING FILE NAME: 34507-SURV-SB01	1 SHEET 1

PHOENIX INN

WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES											
BTEX COMPOUNDS											
TOTAL PETROLEUM HYDROCARBONS											
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL	MINERAL OIL
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
PMW-1	10/22/07	6.38	8:02	ND	ND	ND	ND	ND	ND	ND	ND
PMW-2	10/22/07	5.91	8:18	ND	ND	ND	ND	ND	ND	ND	ND
PMW-3	10/22/07	5.5	8:11	ND	ND	ND	ND	ND	ND	ND	ND
PMW-4	10/22/07	5.23	8:00	ND	ND	ND	ND	ND	ND	ND	ND
PMW-5	10/22/07	5.85	8:31	ND	ND	ND	ND	ND	ND	ND	ND
PMW-6	10/22/07			ND	ND	ND	ND	ND	ND	ND	ND
PMW-7	10/22/07			ND	ND	ND	ND	ND	ND	ND	ND
PMW-8	10/22/07			3.1	4.7	ND	ND	ND	ND	ND	ND
PMW-9	10/22/07	6.15	8:22	ND	ND	ND	ND	ND	ND	ND	ND
PMW-10	10/22/07			ND	ND	ND	ND	ND	ND	ND	ND
PMW-11	10/22/07			1.1	ND	ND	ND	ND	ND	ND	ND
PMW-12	10/22/07			ND	ND	ND	ND	ND	330	ND	ND
PMW-13	10/22/07			0.66	21	ND	ND	200	ND	ND	ND
PMW-14	10/22/07	5.19	8:26	ND	3.3	ND	ND	110	ND	ND	ND
PMW-15	10/22/07	5.51	8:24	ND	ND	ND	ND	ND	1700	ND	ND
PMW-16	10/22/07	4.75	8:14	ND	ND	ND	ND	ND	ND	ND	ND
PMW-17	10/22/07			ND	ND	ND	ND	ND	ND	ND	ND
PMW-18	10/22/07	6.32	8:33	ND	ND	ND	ND	ND	ND	ND	ND
MW-6	10/22/07	5.33	7:53	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	10/22/07	5.28	7:56	0.83	ND	ND	ND	ND	ND	ND	ND
MW-1	10/22/07	4.53	8:07	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	10/22/07	5.66	8:05	ND	ND	ND	ND	ND	ND	ND	ND
METHOD DETECTION LIMITS				0.02	0.05	0.05	0.05	10	20	40	40
METHOD "A" CLEAN UP LEVELS				5	1000	700	1000	*800	500	500	500
BTEX'S BY METHOD 8021B GASOLINE TPH BY METHOD NWTPH-Gx DIESEL TPH BY METHOD Dx/Dx EXTENDED											
WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES											

October 25, 2007

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended and Gasoline by NWTPH-Gx, and BTEX by Method 8021B on October 23, 2007.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
*President*

**ESN NORTHWEST CHEMISTRY LABORATORY**

PHOENIX INN PROJECT  
 Olympia, Washington  
 Stemen Environmental, Inc.

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/L)	Oil (ug/L)	Mineral Oil (ug/L)
Method Blank	10/23/2007	93	nd	nd	nd
MW-6	10/23/2007	122	nd	nd	nd
MW-6 Dup.	10/23/2007	99	nd	nd	nd
MW-10	10/23/2007	91	nd	nd	nd
PMW-1	10/23/2007	109	nd	nd	nd
PMW-2	10/23/2007	91	nd	nd	nd
PMW-3	10/23/2007	99	nd	nd	nd
PMW-4	10/23/2007	73	nd	nd	nd
PMW-5	10/23/2007	83	nd	nd	nd
PMW-6	10/23/2007	82	nd	nd	nd
PMW-7	10/23/2007	78	nd	nd	nd
PMW-7 Dup.	10/23/2007	86	nd	nd	nd
PMW-15	10/23/2007	72	<b>1,700</b>	nd	nd
PMW-17	10/23/2007	116	nd	nd	nd
PMW-18	10/23/2007	119	nd	nd	nd
PMW-11	10/23/2007	120	<b>330</b>	nd	nd
PMW-14	10/23/2007	110	nd	nd	nd
PMW-16	10/23/2007	94	nd	nd	nd
PMW-12	10/23/2007	87	nd	nd	nd
MW-1	10/23/2007	122	nd	nd	nd
MW-2	10/23/2007	111	nd	nd	nd
PMW-9	10/23/2007	116	nd	nd	nd
PMW-13	10/23/2007	98	nd	nd	nd
PMW-10	10/23/2007	99	nd	nd	nd
PMW-8	10/23/2007	97	nd	nd	nd
Method Detection Limits			200	400	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

PHOENIX INN PROJECT  
 Olympia, Washington  
 Stemen Environmental, Inc.

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline (ug/L)	Surrogate Recovery (%)
Method Blank	10/22/2007	nd	nd	nd	nd	nd	111
LCS	10/22/2007	93%	96%	89%	106%	---	93
MW-6	10/22/2007	nd	nd	nd	nd	nd	103
MW-6 Dup.	10/22/2007	nd	nd	nd	nd	nd	104
MW-10	10/22/2007	<b>0.83</b>	nd	nd	nd	nd	85
PMW-1	10/22/2007	nd	nd	nd	nd	nd	102
PMW-2	10/22/2007	nd	nd	nd	nd	nd	104
PMW-3	10/22/2007	nd	nd	nd	nd	nd	108
PMW-4	10/22/2007	nd	nd	nd	nd	nd	115
PMW-5	10/22/2007	nd	nd	nd	nd	nd	105
PMW-6	10/22/2007	nd	nd	nd	nd	nd	100
PMW-7	10/22/2007	nd	nd	nd	nd	nd	95
PMW-7 Dup.	10/22/2007	nd	nd	nd	nd	nd	106
PMW-15	10/23/2007	nd	nd	nd	nd	nd	100
PMW-17	10/23/2007	nd	nd	nd	nd	nd	97
PMW-18	10/23/2007	nd	nd	nd	nd	nd	99
PMW-11	10/23/2007	<b>1.1</b>	nd	nd	nd	nd	72
PMW-14	10/23/2007	nd	<b>3.3</b>	nd	nd	<b>110</b>	77
PMW-16	10/23/2007	nd	nd	nd	nd	nd	80
PMW-12	10/23/2007	nd	nd	nd	nd	nd	79
MW-1	10/22/2007	nd	nd	nd	nd	nd	101
MW-2	10/22/2007	nd	nd	nd	nd	nd	110
PMW-9	10/23/2007	nd	nd	nd	nd	nd	84
PMW-13	10/23/2007	<b>0.66</b>	<b>21</b>	nd	nd	<b>200</b>	82
PMW-10	10/24/2007	nd	nd	nd	nd	nd	82
PMW-8	10/23/2007	<b>3.1</b>	<b>4.7</b>	nd	nd	nd	86
Method Detection Limits		1.0	1.0	1.0	1.0	100	
"nd" Indicates not detected at the listed detection limits.							
"int" Indicates that interference prevents determination.							

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEMEN ENVIRONMENTAL INC.  
 ADDRESS: 2-600  
 PHONE: 360.438.9521 FAX: 312  
 CLIENT PROJECT #: PHENIX PROJECT MANAGER: PAUL STENCH

DATE: 10/23/07 PAGE 1 OF 1  
 PROJECT NAME: PHENIX FLOW SIDE  
 LOCATION: Cheney, WA DATE OF COLLECTION: 10/22  
 COLLECTOR: PAUL STENCH

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number		
					TPH-HCD BTEX	TPH-Gasoline	TPH-Diesel & Oil	TPH-Diesel	VOC 8270	VOC 8278 BTEX	PCBs 8270	PCBs 8082	RCRA 8 Metals	PCB 5 Metals				Asbestos-PLM	GRO Sulfide
1. MW-6			1720	11/12	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. MW-10					X	X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-1					X	X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-2					X	X	X	X	X	X	X	X	X	X	X	X	X		
5. PMW-3					X	X	X	X	X	X	X	X	X	X	X	X	X		
6. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X	X		
7. PMW-5					X	X	X	X	X	X	X	X	X	X	X	X	X		
8. PMW-6					X	X	X	X	X	X	X	X	X	X	X	X	X		
9. PMW-7					X	X	X	X	X	X	X	X	X	X	X	X	X		
10. PMW-15					X	X	X	X	X	X	X	X	X	X	X	X	X		
11. PMW-17					X	X	X	X	X	X	X	X	X	X	X	X	X		
12. PMW-18					X	X	X	X	X	X	X	X	X	X	X	X	X		
13. PMW-11					X	X	X	X	X	X	X	X	X	X	X	X	X		
14. PMW-14					X	X	X	X	X	X	X	X	X	X	X	X	X		
15. PMW-16					X	X	X	X	X	X	X	X	X	X	X	X	X		
16. PMW-17					X	X	X	X	X	X	X	X	X	X	X	X	X		
17. MW-1					X	X	X	X	X	X	X	X	X	X	X	X	X		
18. MW-2					X	X	X	X	X	X	X	X	X	X	X	X	X		

RELEASING BY (Signature) [Signature] DATE/TIME 10/23/07  
 RECEIVED BY (Signature) [Signature] DATE/TIME 10/23/07

RELEASING BY (Signature) [Signature] DATE/TIME 10/23/07  
 RECEIVED BY (Signature) [Signature] DATE/TIME 10/23/07

**SAMPLE DISPOSAL INSTRUCTIONS**  
 ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES:  
 TOTAL NUMBER OF CONTAINERS  
 CHAIN OF CUSTODY SEALS Y/N/A  
 SEALS INTACT? Y/N/A  
 RECEIVED GOOD COND./COLD  
 NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEVEN ENVIRONMENTAL INC.  
 ADDRESS: \_\_\_\_\_  
 PHONE: 360-438-9521 FAX: \_\_\_\_\_  
 CLIENT PROJECT #: PHOENIX FARM PROJECT MANAGER: PAUL STEWART

DATE: 10/23/07 PAGE 1 OF 1  
 PROJECT NAME: PHOENIX FARM  
 LOCATION: Olympia, WA  
 COLLECTOR: PAUL STEWART DATE OF COLLECTION: 10/22

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number	
					TH-HClD	VOA 802/B BTEX	TH-Diesel	TH-Diesel & Oil	PAH's 8270	PCB's 8082	RCRA 8 Metals	MTCRA 5 Metals	Pb	Asbestos-PLM				GRO Site
1. PMW-9			140	UAC	X	X	X	X	X									
2. PMW-19					X	X	X	X	X									
3. PMW-16					X	X	X	X	X									
4. PMW-8					X	X	X	X	X									
5.																		
6.																		
7.																		
8.																		
9.																		
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18.																		

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/N/NA \_\_\_\_\_

SEALS INTACT? Y/N/NA \_\_\_\_\_

RECEIVED GOOD COND./COLD \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY

**SAMPLE DISPOSAL INSTRUCTIONS**

ESN DISPOSAL @ \$2.00 each  Return  Pickup

---

**APPENDIX B**

**GREYLOCK CONSULTING  
REPORT**

**GREYLOCK  
CONSULTING LLC**



*Water Resources & Environmental Services*

June 11, 2008

Mr. Paul Stemen  
Stemen Environmental, Inc.  
P.O. Box 3644  
Olympia, WA 98509

Re: **Groundwater Flow on October 22, 2007  
Phoenix Inn Property  
415 Capitol Way North  
Olympia, Washington**

Dear Mr. Stemen:

This letter documents the results of our evaluation of groundwater elevation data obtained from the Phoenix Inn Property in Olympia, Washington.

**Background**

Stemen Environmental, Inc. (Stemen) is currently evaluating environmental conditions and at the Phoenix Inn Site (site) located at 415 Capitol Way North in Olympia, Washington. Stemen has installed monitoring wells on the property and has collected water level measurements on October 22, 2007. Stemen has hired Greylock Consulting LLC (Greylock) to provide interpretation of groundwater elevation data from those wells. This memo is based on water level measurements and survey data provided by Stemen.

**Site**

The site consists of 1.38 acres of commercially developed property. The Phoenix Inn hotel building currently occupies the site. The hotel building lies on the eastern portion of the property. The remaining portions of the property consist of asphalt parking lots. The site is bordered on the north by "A" Avenue, on the east by Capitol Way N, on the west by Columbia Street NW, and on the south by Thurston Avenue.

The site is located in an area that was formerly a marine tidal zone until filling for commercial purposes occurred in the late 1800s to early 1900s. Budd Inlet is located less than 300 feet to the west of the site.

## **Subsurface Soils and Monitoring Wells**

Boring and well logs from the Limited Phase 2 Environmental Site Assessment Report (Stemen, March 26, 2006) indicate that sand is the dominant near surface soil from 0 to 13 feet below ground surface.

Twenty-two monitoring wells have been installed on or adjacent to the property at different times. Most of the interior wells were installed as combination groundwater monitoring/microbe injection wells by means of direct push drilling techniques. Wells in the interior of the property were screened between 3 and 13 feet with either a 5-ft or 10-ft long 0.01 slot screen.

## **Groundwater**

Water levels were collected at the site on October 22, 2007 by Stemen. On this date, fourteen wells (perimeter and interior) were monitored. Water level measurements are provided in Table 1. Shallow groundwater at the property occurs at depths recorded from 4.53 ft to 6.38 ft below ground surface (bgs).

Water levels were collected from 14 wells at the site between 7:53 AM and 8:33 AM. A low tide of 1.6 ft MLLW was recorded in Budd Inlet at 8:59 AM. As shown on Figure 1, the groundwater flow direction across the site at this time is interpreted to be in an easterly direction with a gradient of approximately 0.004 ft/ft.

## **Discussion**

Based on four groundwater monitoring events (March 2006, July 2006, December 2006, and October 2007) groundwater flow direction and gradient is variable at the site and appears to shift with tidal cycle. This site is located within 300 feet of the shoreline of Budd Inlet. Tidal fluctuations in Budd Inlet can be over 15 feet in one tidal cycle (<http://tidesandcurrents.noaa.gov>). The gradient pattern (or lack of pattern) at this site is consistent with a site that is tidally influenced.

## **Limitations**

This report is based upon the application of scientific principles and professional judgment to certain facts with resulting subjective interpretations. Professional judgments expressed herein are based upon the facts currently available within the limits of the existing data, scope of work, budget, and schedule. Groundwater flow direction and gradients presented in this report are based on water levels and survey information provided by others. We make no warranties, expressed or implied, including, without limitation, warranties are to the fitness of the site for a particular purpose.

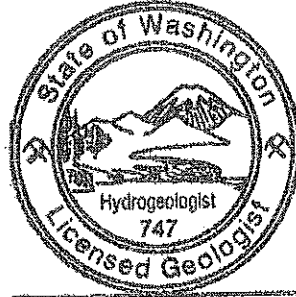
If you have any questions regarding this report, please call me at (253) 941-0654.

Sincerely,

GREYLOCK CONSULTING LLC

Suzanne Dudziak  
Principal Hydrogeologist

Attachments: 1 Table  
1 Figure

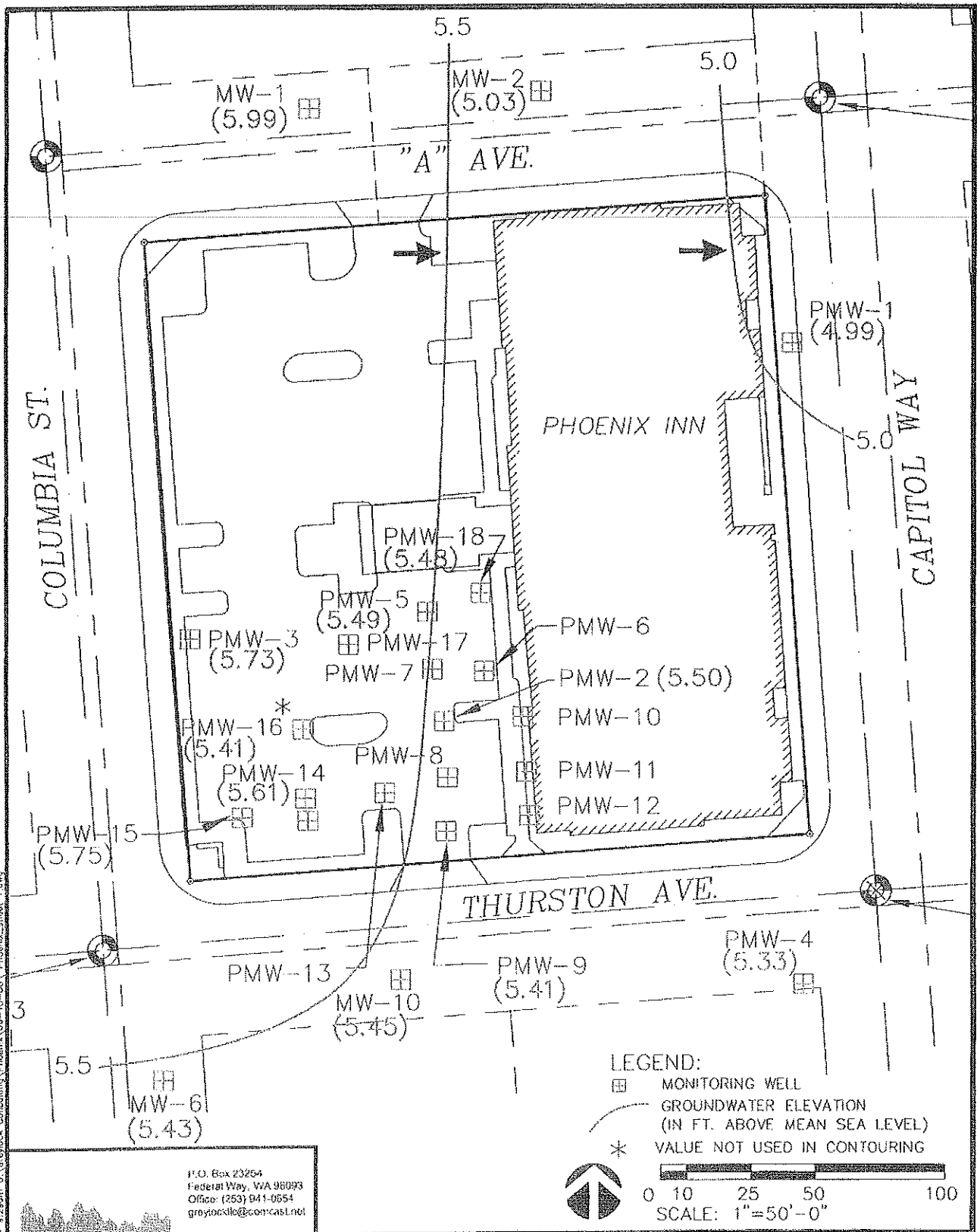


Suzanne Dudziak  
*Suzanne Dudziak* 6-11-03

Table 1. Phoenix Inn Site, Groundwater Elevations


October 22, 2007

Station	Time AM	Elevation (ft above MSL)	Depth to GW (ft)	GW Elevation (ft above MSL)
MW-1	8:07	10.52	4.53	5.99
MW-2	8:05	10.69	5.66	5.03
MW-6	7:53	10.76	5.33	5.43
MW-10	7:56	10.73	5.28	5.45
PMW-1	8:02	11.37	6.38	4.99
PMW-2	8:18	11.41	5.91	5.50
PMW-3	8:11	11.23	5.5	5.73
PMW-4	8:00	10.56	5.23	5.33
PMW-5	8:31	11.34	5.85	5.49
PMW-9	8:22	11.56	6.15	5.41
PMW-14	8:26	10.80	5.19	5.61
PMW-15	8:24	11.26	5.51	5.75
PMW-16	8:14	10.16	4.75	5.41
PMW-18	8:33	11.80	6.32	5.48



CAD/BWA Dec. 11, 2008 9:29am G:\Breezlock\_Consulting\Phoenix\06-10-06\Phoenix\_sheet\_1.dwg

P.O. Box 23264  
 Federal Way, WA 98093  
 Office: (253) 941-0654  
 greylockllc@comcast.net

  
**GREYLOCK CONSULTING LLC**  
 Water Resources & Environmental Services

**TITLE: INFERRED & GENERALIZED GROUNDWATER CONTOURS**  
 Groundwater Elevations Date: October 22, 2007

Phoenix Inn Site Modified from W & H Pacific, March 2006	DRAWN BY: SD	DATE: June 6, 2008	SHEET NO. 1
-------------------------------------------------------------	-----------------	-----------------------	----------------

**GROUNDWATER MONITORING  
REPORT**

**DECEMBER, 2006**

**RECEIVED**

**AUG 26 2009**

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

January 27, 2007

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: REMEDIAL INVESTIGATIONS AND SITE CHARACTERIZATION REPORT FOR  
THE PHOENIX INN PROPERTY LOCATED AT 415 CAPITOL WAY N., OLYMPIA,  
WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of three (3) groundwater monitoring events performed on the former Reliable Steel property. The results of these groundwater monitoring events were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.01 and 6.29 feet b.g.s. in the sampled monitoring wells.

## **3.0 MONITORING WELLS**

### **3.1 Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s. to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Notice of Intent Forms for all of the monitoring wells were properly filed with Ecology.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

On December 28, 2006, I measured groundwater elevations and obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.'s.

Groundwater sample PMW-8 was submitted for Waste Oil Range Organics analyses as per MTCA Table 830-1.

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well #PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-5 reported the detectable presence of diesel fuel range T.P.H. and B.T.E.X.'s at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring wells PMW-5 reported the presence of gasoline range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported the presence of gasoline range T.P.H., Benzene, and Xylenes at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported no detectable presence of PCBs, MTBE, and/or EDB.

The results of these groundwater monitoring activities indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak og Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 QUALITY CONTRLS AND ASSURANCES**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## **7.0 LABORATORY ANALYSIS**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx/Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

One (1) groundwater sample was screened for Waste Oil Range Organics using EPA method 8260, EPA method 8082, EPA method 239.2, method NWTPH-Gx, and NWTPH-Dx / Dx Extended.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## **8.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least

Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

The results of this groundwater monitoring event reported the presence of gasoline range T.P.H. and/or B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels in the waters obtained from on-site monitoring wells PMW-8, and PMW-5.

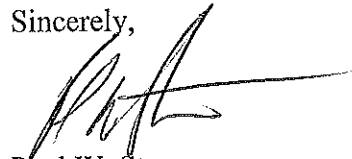
Laboratory analyses results for on-site monitoring wells PMW-5 and PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

The results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

If you have any questions or need further information please feel free to contact us at the above phone number.

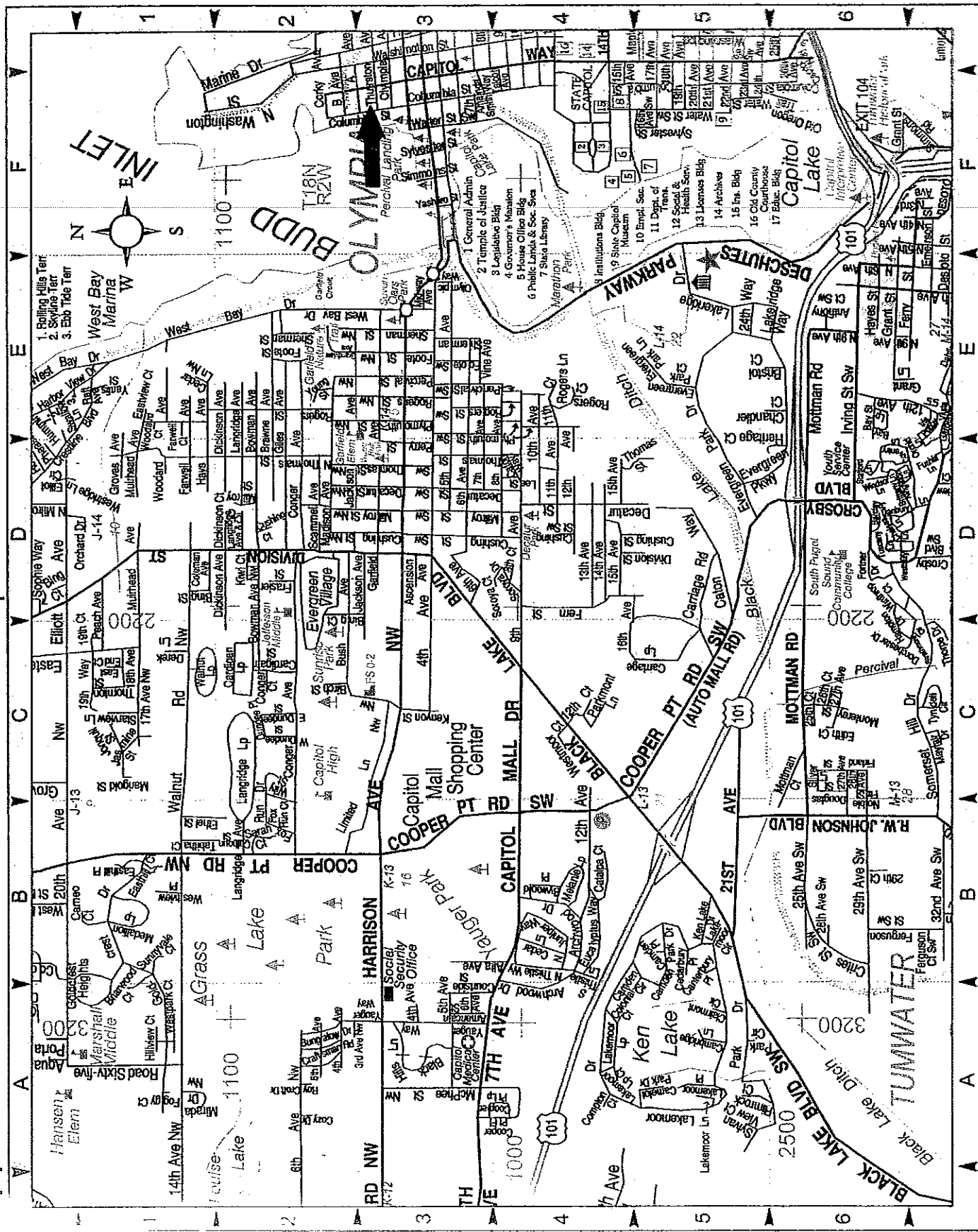
Sincerely,



Paul W. Stemen  
Vice President

**APPENDIX A**

**LABORATORY CHARTS,  
ANALYSES, MONITORING  
WELL LOCATION MAP AND  
SITE MAP**

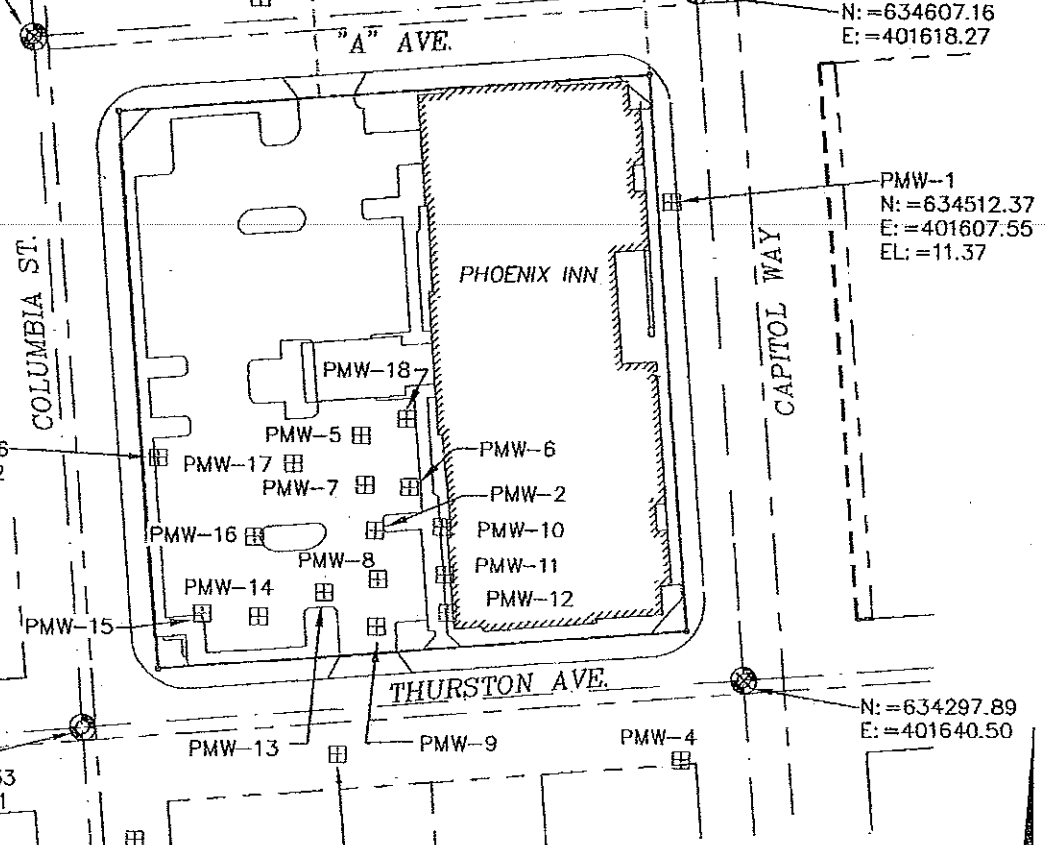


Office: OLYMPIA | System: WHP-OLY-307K091 | User: JLNZEE | Time: 03/14/2006 13:33:50

N: =634603.16  
E: =401420.55  
EL: =10.52

E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27



PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

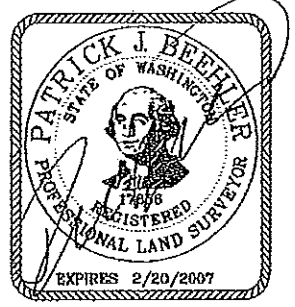
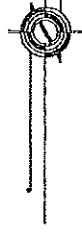
MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

N: =634297.89  
E: =401640.50

**LEGEND**

- FOUND CASSED MONUMENT
- MONITOR WELL



3-1A-2006

VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63  
FOUND CASSED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET

BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN

DESIGNED BY: JMM	CHECKED BY: PJB					
DRAWN BY: JMM	APPROVED BY: PJB					
LAST EDIT:	PLOT DATE: 03/14/06					
DATE	BY	REV	REVISION	ICK	D	APPR
3/14/06	JWL	1	ADDITIONAL WELLS			

724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3373  
(360) 754-1106 Fax  
www.stemen.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	WASHINGTON
SCALE: 1"=80'	PROJECT NO. 034507
DRAWING FILE NAME: 34507-SURV-SB01	
1	SHEET 1



PHOENIX MONITORING WELLS

SEMIVOLATILE ORGANIC COMPOUNDS PAH (8270) WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
ACENAPHLTHENE	ND				
ACENAPHTHYLENE	ND				
ANTHRACENE	ND				
BENZO(A)ANTHRACENE*	ND				
BENZO(A)PYRENE*	ND				
BENZO(B)FLUORANTHENE*	ND				
BENZO(GHL)PERYLENE	ND				
BENZO(K)FLUORANTHENE*	ND				
CHRYSENE*	ND				
DIBENZO(A,H)ANTHRACENE*	ND				
FLUORENE	ND				
FLUORANTHENE	ND				
INDENO(,1,2-CD)PYRENE*	ND				
NAPHTHALENE	ND				
1-METHYLNAPHTHALENE	2				
2-METHYLNAPHTHALENE	ND				
PHENANTHRENE	ND				
PYRENE	ND				

PHOENIX MONITORING WELLS

VOLATILE ORGANIC COMPOUNDS 8260WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
1,1DICHLOROETHENE	ND				
METHYL-TBULYL ETHER (MTBE)	ND				
1,2 DICHLOROETHANE (EDC)	ND				
BENZENE	170				
TRICHLOROETHENE (TCE)	ND				
TOLUENE	6.5				
1,2-DIBROMOETHANE (EDB)(*)	ND				
CHLOROBENZENE	ND				
ETHYLBENZENE	4.4				
XYLENES	87				

PHOENIX MONITORING WELLS

PCB ANALYSES OF WATER (EPA METHOD 8082)					
SAMPLE NUMBER	PMB-8				
DATE	12/28/06				
DEBTH	6.49				
TIME	5:16 AM				
	ug/l				
PCB-1016	ND				
PCB-1221	ND				
PCB1232	ND				
PCB-1242	ND				
PCB-1248	ND				
PCB1254	ND				
PCB-1260	ND				

January 12, 2007

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8021B, and WRO on January 4 & 5, 2007.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental, Inc.

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analyses of Diesel (NWTPH-Dx) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)
Method Blank	1/5/2007	84	nd
PMW-1	1/5/2007	100	nd
PMW-2	1/5/2007	70	nd
PMW-3	1/5/2007	76	nd
PMW-4	1/5/2007	113	nd
PMW-5	1/5/2007	82	<b>710</b>
PMW-5 Dup.	1/5/2007	100	<b>660</b>
PMW-6	1/5/2007	81	<b>350</b>
PMW-7	1/5/2007	95	nd
PMW-8	1/5/2007	93	nd
PMW-9	1/5/2007	70	nd
PMW-10	1/5/2007	116	nd
PMW-11	1/5/2007	90	nd
PMW-12	1/5/2007	83	nd
PMW-13	1/5/2007	110	nd
PMW-14	1/5/2007	80	nd
PMW-15	1/5/2007	84	nd
PMW-16	1/5/2007	91	nd
PMW-17	1/5/2007	86	nd
PMW-18	1/5/2007	100	nd
PMW-18 Dup.	1/5/2007	89	nd
MW-6	1/5/2007	71	nd
MW-10	1/5/2007	103	nd
MW-10 Dup.	1/5/2007	103	nd
MW-1	1/5/2007	83	nd
MW-2	1/5/2007	82	nd
Method Detection Limits			200

"nd" Indicates not detected at the listed detection limits.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan, M.Olson

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environme

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water**

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	Surrogate Recovery (%)
Method Blank	1/4/2007	nd	nd	nd	nd	nd	85
Method Blank	1/5/2007	nd	nd	nd	nd	nd	94
LCS	1/5/2007	65	72	87	72	---	91
PMW-1	1/4/2007	nd	nd	nd	nd	nd	99
PMW-2	1/4/2007	nd	nd	nd	nd	nd	112
PMW-3	1/4/2007	nd	nd	nd	nd	nd	85
PMW-4	1/4/2007	nd	nd	nd	nd	nd	95
PMW-5	1/4/2007	nd	2.7	1.5	12	330	113
PMW-5 Dup	1/4/2007	nd	1.3	1.4	8.1	210	113
PMW-6	1/4/2007	nd	nd	nd	nd	nd	98
PMW-7	1/4/2007	nd	nd	nd	nd	nd	105
PMW-9	1/5/2007	nd	nd	nd	nd	nd	95
PMW-10	1/5/2007	nd	nd	nd	nd	nd	123
PMW-11	1/5/2007	nd	nd	nd	nd	nd	116
PMW-12	1/5/2007	nd	nd	nd	nd	nd	102
PMW-13	1/5/2007	nd	nd	nd	nd	nd	105
PMW-14	1/5/2007	nd	nd	nd	nd	nd	67
PMW-15	1/5/2007	nd	nd	nd	nd	nd	78
PMW-16	1/5/2007	nd	nd	nd	nd	nd	72
PMW-17	1/5/2007	nd	nd	nd	nd	nd	83
PMW-18	1/5/2007	nd	nd	nd	nd	nd	114
MW-6	1/5/2007	nd	nd	nd	nd	nd	68
MW-10	1/5/2007	nd	nd	nd	nd	nd	70
MW-10 Dup.	1/5/2007	nd	nd	nd	nd	nd	108
MW-1	1/5/2007	nd	nd	nd	nd	nd	100
MW-2	1/5/2007	nd	nd	nd	nd	nd	124
Method Detection Limits		1	1	1	1	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%  
 ANALYSES PERFORMED BY: A. Reagan, M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnww.com

PCB Analyses of Water (EPA Method 8082)

Sample Description	Method	PMW-8	PMW-8
	Blank		Dup.
Date Sampled		12/28/2006	12/28/2006
Date Analyzed	1/4/2007	1/4/2007	1/4/2007
	MDL (ug/l)	(ug/l)	(ug/l)
PCB-1016	0.1	nd	nd
PCB-1221	0.1	nd	nd
PCB-1232	0.1	nd	nd
PCB-1242	0.1	nd	nd
PCB-1248	0.1	nd	nd
PCB-1254	0.1	nd	nd
PCB-1260	0.1	nd	nd
Total		0.0	0.0
Surrogate Recovery (TCMX) (%)		82	87
Surrogate Recovery (DCBP) (%)		74	96

"nd" Indicates not detected at listed detection limit.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (TCMX) AND (DCBP): 65% -135%

ANALYSES PERFORMED BY: M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

QA/QC Data - PCB Analyses - Waters

---

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
PCB 1260	0.050		0.057
TCMX			91
DCBP			95

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: M.Olson

**ESN NORTHWEST CHEMISTRY LABORATORY**

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental Inc.

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

**Analyses of Gasoline (NWTPH-Gx) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	1/4/2007	85	nd
PMW-8	1/4/2007	94	<b>1200</b>
Method Detection Limits			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

8260, µg/L	MTH BLK		LCS		PMW-8		MS		MSD		RPD
	Water	Water	Water	Water	Water	Water	Water	Water	Water		
Matrix	Reporting										
Date analyzed	Limits	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	
1,1-Dichloroethene	1.0	nd	121%		nd		120%		120%		0%
Methyl-t-butyl ether (MTBE)	1.0	nd			nd						
1,2-Dichloroethane (EDC)	1.0	nd			nd						
Benzene	1.0	nd	116%		170		121%		121%		0%
Trichloroethene (TCE)	1.0	nd	115%		nd		119%		118%		1%
Toluene	1.0	nd	119%		6.5		119%		122%		2%
1,2-Dibromoethane (EDB)(*)	0.10	nd			nd						
Chlorobenzene	1.0	nd	110%		nd		121%		121%		0%
Ethylbenzene	1.0	nd			4.4						
Xylenes	1.0	nd			87						

\*-instrument detection limits

Surrogate recoveries:

Dibromofluoromethane	119%	120%	114%	114%	117%
Toluene-d8	111%	113%	116%	118%	121%
4-Bromofluorobenzene	122%	118%	127%	127%	116%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

J - estimated quantitation, below listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

PAH(8270), ug/L		MTH BLK	LCS	PMW-8	MS	MSD	RPD
Matrix	Water	Water	Water	Water	Water	Water	
Date extracted	Reporting	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07	
Date analyzed	Limits	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07	
Acenaphthene	0.2	nd	86%	nd	84%	80%	5%
Acenaphthylene	0.2	nd		nd			
Anthracene	0.2	nd		nd			
Benzo(a)anthracene*	0.2	nd		nd			
Benzo(a)pyrene*	0.2	nd		nd			
Benzo(b)fluoranthene*	0.2	nd		nd			
Benzo(ghi)perylene	0.2	nd		nd			
Benzo(k)fluoranthene*	0.2	nd		nd			
Chrysene*	0.2	nd		nd			
Dibenzo(a,h)anthracene*	0.2	nd		nd			
Fluorene	0.2	nd		nd			
Fluoranthene	0.2	nd	81%	nd			
Indeno(1,2,3-cd)pyrene*	0.2	nd		nd			
Naphthalene	0.2	nd		nd			
1-Methylnaphthalene	0.2	nd		2.0			
2-Methylnaphthalene	0.2	nd		nd			
Phenanthrene	0.2	nd		nd			
Pyrene	0.2	nd		nd	87%	80%	8%

Total Carcinogens nd

Surrogate recoveries:

2-Fluorobiphenyl	110%	123%	95%	115%	108%
p-Terphenyl-d14	52%	61%	54%	106%	50%

Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 M - matrix interference  
 J - estimated value  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 35%



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

01/11/2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501  
Attn: Julie Woods

Project: Stemen/Phoenix Inn  
Client ID: PMW-8  
Sample Matrix: Water  
Date Sampled: 12/29/2006  
Date Received: 01/03/2007  
Spectra Project: 2007010039  
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Lead by GFAA	< 1	µg/L	EPA 239.2

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager

a6/scj



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

January 12, 2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501

Method: 239.2  
Spectra Project: 2007010039  
Applies to Spectra #'s 1  
Sample Matrix: Water

## QUALITY CONTROL RESULTS

### METHOD BLANK

Date Prepared: 1/11/2007  
Units: ug/L

Date Analyzed: 1/11/2007

Lead <1

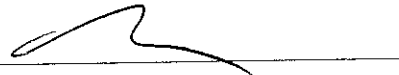
### MS/MSD

Sample Spiked: 2007010096-1  
Units: ug/L

Date Prepared: 1/11/2007  
Date Analyzed: 1/11/2007

<u>Compound</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>MS Result</u>	<u>% Recovery</u>	<u>MSD Result</u>	<u>% Recovery</u>	<u>RPD</u>
Lead	0.000	50.000	44.808	89.6	45.140	90.3	1

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager

# CHAIN-OF-CUSTODY RECORD

CLIENT: STERNE ENVIRONMENTAL INC DATE: 12/28/06 PAGE 1 OF 1

ADDRESS: \_\_\_\_\_ PROJECT NAME: Pittsboro, Ind

PHONE: 7604389521 FAX: \_\_\_\_\_ LOCATION: Chapel Hill, NC

CLIENT PROJECT #: STERNE Ind PROJECT MANAGER: Mike Sullivan COLLECTOR: Mike Sullivan DATE OF COLLECTION: 12/28

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES											NOTES	Total Number of Containers	Laboratory Note Number	
					VOA 8021B BTEX ONLY	VOA 8021B BTEX ONLY	TPH - HCHO	TPH 8015 (Gravim)	TPH 8015 (Distil)	PAH 8100 (2 o)	PAH 8270	PCBS 8082	Pesticides 8081	ASBESTOS-PLM	RCRA 8				MTCA 5
1. PMW-1			1120	Vial	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. PMW-2					X	X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-3					X	X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X	X		
5. PMW-5					X	X	X	X	X	X	X	X	X	X	X	X	X		
6. PMW-6					X	X	X	X	X	X	X	X	X	X	X	X	X		
7. PMW-7					X	X	X	X	X	X	X	X	X	X	X	X	X		
8. PMW-8					X	X	X	X	X	X	X	X	X	X	X	X	X		
9. PMW-9					X	X	X	X	X	X	X	X	X	X	X	X	X		
10. PMW-10					X	X	X	X	X	X	X	X	X	X	X	X	X		
11. PMW-11					X	X	X	X	X	X	X	X	X	X	X	X	X		
12. PMW-12					X	X	X	X	X	X	X	X	X	X	X	X	X		
13. PMW-13					X	X	X	X	X	X	X	X	X	X	X	X	X		
14. PMW-14					X	X	X	X	X	X	X	X	X	X	X	X	X		
15. PMW-15					X	X	X	X	X	X	X	X	X	X	X	X	X		
16. PMW-16					X	X	X	X	X	X	X	X	X	X	X	X	X		
17. PMW-17					X	X	X	X	X	X	X	X	X	X	X	X	X		
18. PMW-18					X	X	X	X	X	X	X	X	X	X	X	X	X		

RELIQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME 12/28/06

RELIQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

**SAMPLE DISPOSAL INSTRUCTIONS**

ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS \_\_\_\_\_

CHAIN OF CUSTODY SEALS Y/NNA \_\_\_\_\_

SEALS INTACT? Y/NNA \_\_\_\_\_

RECEIVED GOOD COND /COLO \_\_\_\_\_

NOTES: \_\_\_\_\_

Turn Around Time: 24 HR 48 HR 5 DAY

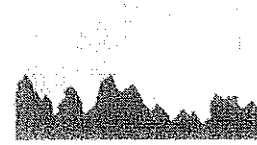
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**APPENDIX B**

**GREYLOCK CONSULTING  
REPORT**

**GREYLOCK  
CONSULTING LLC**

*Water Resources & Environmental Services*



September 4, 2007

Mr. Paul Stemen  
Stemen Environmental, Inc.  
P.O. Box 3644  
Olympia, WA 98509

Re: **Groundwater Gradients  
Phoenix Inn Property  
415 Capitol Way North  
Olympia, Washington**

Dear Mr. Stemen:

This letter documents the results of our evaluation of groundwater elevation data obtained from the Phoenix Inn Property in Olympia, Washington.

**Background**

Stemen Environmental, Inc. (Stemen) is currently evaluating environmental conditions and at the Phoenix Inn Site (site) located at 415 Capitol Way North in Olympia, Washington. Stemen has installed monitoring wells on the property and has collected water level measurements on July 16, 2006, and December 28, 2006. Stemen has hired Greylock Consulting LLC (Greylock) to provide interpretation of groundwater elevation data from those wells. This memo is based on water level measurements and survey data provided by Stemen.

**Site**

The site consists of 1.38 acres of commercially developed property. The Phoenix Inn hotel building currently occupies the site. The hotel building lies on the eastern portion of the property. The remaining portions of the property consist of asphalt parking lots. The site is bordered on the north by "A" Avenue, on the east by Capitol Way N, on the west by Columbia Street NW, and on the south by Thurston Avenue.

The site is located in an area that was formerly a marine tidal zone until filling for commercial purposes occurred in the late 1800s to early 1900s. Budd Inlet is located less than 300 feet to the west of the site.

## **Subsurface Soils and Monitoring Wells**

Boring and well logs from the Limited Phase 2 Environmental Site Assessment Report (Stemen, March 26, 2006) indicate that sand is the dominant near surface soil from 0 to 13 feet below ground surface.

Twenty-two monitoring wells have been installed on or adjacent to the property at different times. Most of the interior wells were installed as combination groundwater monitoring/microbe injection wells by means of Direct Push drilling techniques. Wells in the interior of the property were screened between 3 and 13 feet with either a 5-ft or 10-ft long 0.01 slot screen.

## **Groundwater**

Water levels were collected at the site on July 16, 2006 and December 28, 2006 by Stemen. On July 16<sup>th</sup>, six perimeter wells were monitored. On December 28<sup>th</sup>, twenty-two wells (perimeter and interior) were monitored. Water level measurements are provided in Table 1. Shallow groundwater at the property occurs at depths recorded from 4.01 ft to 7.29 below ground surface (bgs).

### **July 16, 2006 Monitoring Event**

On July 16, 2006 water levels were collected from 6 wells at the site between 4:25 PM and 4:39 PM. As shown on Figure 1, the groundwater flow direction at this time is interpreted to be toward the southeast with a gradient of approximately 0.004 to 0.008 ft/ft.

### **December 28, 2006 Monitoring Event**

On December 28, 2006 water levels were collected from 22 wells at the site between 4:50 AM and 6:02 AM. As shown on Figure 2, the groundwater flow direction at this time is interpreted to be toward the southwest, with a low point at PMW-3. The gradient at the northeastern portion of the site was approximately 0.005 ft/ft. The southern portion of the site shows a very flat gradient with groundwater elevations ranging from approximately 5.05 to 5.2 ft. This is an area where injection occurs. It appears that the injections have had a localized effect on the gradient in this area. Groundwater flow appears to be directed toward PMW-3 at the southwest portion of the site. Its unknown what is creating this anomaly, however, it could be related to a subsurface man-made feature.

As seen on Figure 2, two water levels measurements were not used in contouring as they were not consistent with surrounding measurements.

## **Discussion**

Based on two groundwater monitoring events in July and December of 2006, groundwater flow is toward the southeast and southwest beneath the site. Its Greylock's understanding that groundwater gradients reported in March, 2006 were toward the northeast.

This site is located within 300 feet of the shoreline of Budd Inlet. Tidal fluctuations in Budd Inlet can be over 15 feet in one tidal cycle (<http://tidesandcurrents.noaa.gov>). The gradient pattern (or lack of pattern) at this site is consistent with a site that is tidally influenced. Gradients at this site appear to be very flat and appear to shift with tide cycle.

One feature that is seen in gradient maps from a previous March, 2006 study and in the December 28, 2006 event is an anomalous feature near PMW-3. The gradient in this location does not appear to be natural and may be due to a subsurface, man-made feature. The gradient at the southern portion of the site appears to be very locally affected by subsurface injections in this area.


### Limitations

This report is based upon the application of scientific principles and professional judgment to certain facts with resulting subjective interpretations. Professional judgments expressed herein are based upon the facts currently available within the limits of the existing data, scope of work, budget, and schedule. Groundwater gradients presented in this report are based on water levels and survey information provided by others. We make no warranties, expressed or implied, including, without limitation, warranties are to the fitness of the site for a particular purpose.

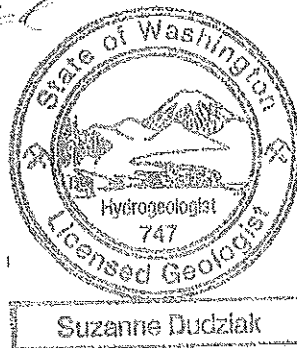
If you have any questions regarding this report, please call me at (253) 941-0654.

Sincerely,

GREYLOCK CONSULTING LLC

  
Suzanne Dudziak  
Principal Hydrogeologist

Attachments: 1 Table  
2 Figures



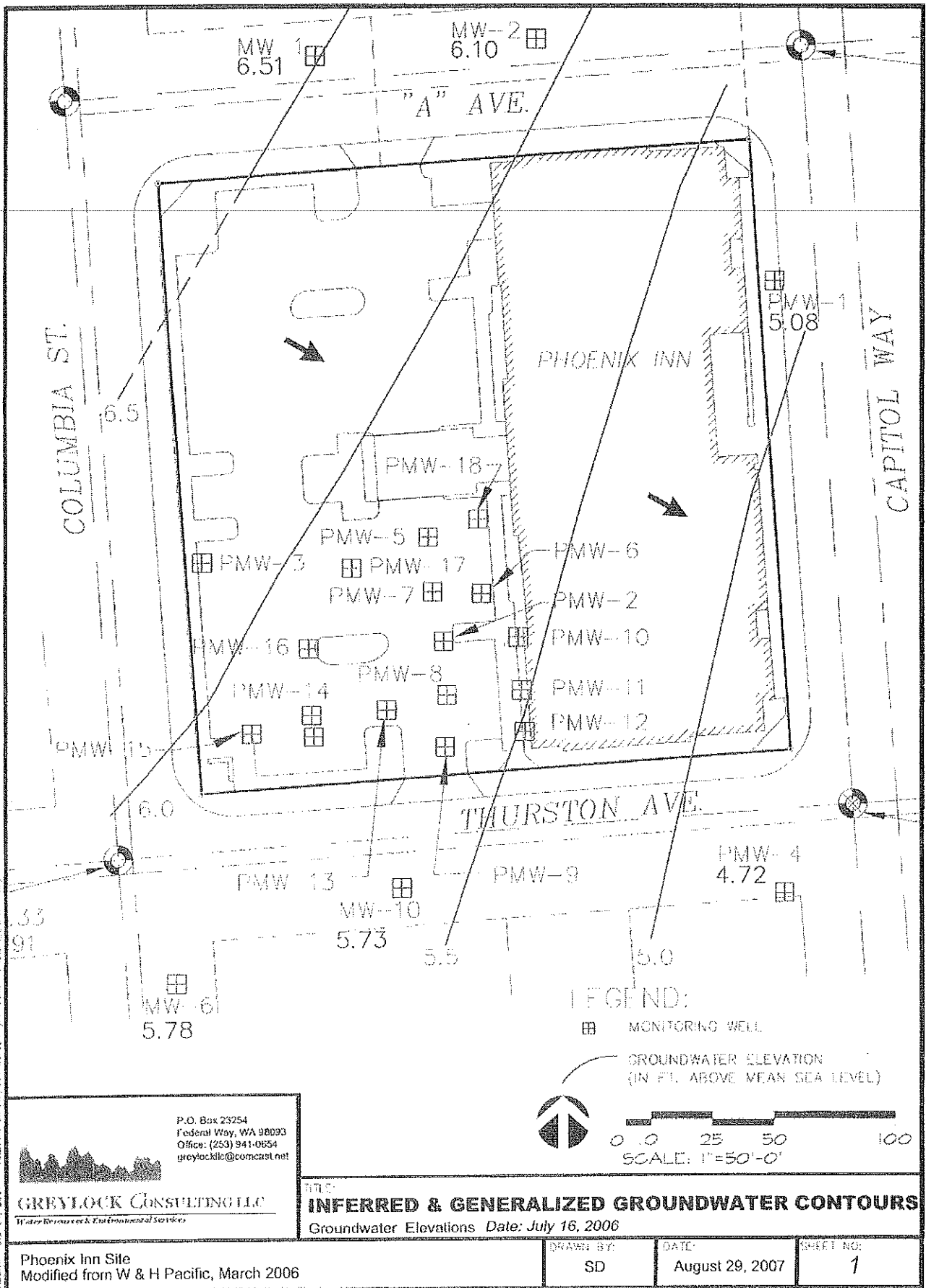
**Table 1. Phoenix Inn Site, Groundwater Elevations**

July 16, 2006


Station	Time PM	Elevation (ft above MSL)	Depth to GW (ft)	GW Elevation (ft above MSL)
MW-1	4:39	10.52	4.01	6.51
MW-2	4:37	10.69	4.59	6.10
MW-6	4:25	10.76	4.98	5.78
MW-10	4:30	10.73	5.00	5.73
PMW-1	4:35	11.37	6.29	5.08
PMW-4	4:32	10.56	5.84	4.72

Dec. 28, 2006

Station	Time AM	Elevation (ft above MSL)	Depth to GW (ft)	GW Elevation (ft above MSL)
MW-1	4:56	10.52	5.12	5.40
MW-2	4:58	10.69	4.22	6.47
MW-6	4:45	10.76	5.64	5.12
MW-10	4:47	10.73	5.65	5.08
PMW-1	4:53	11.37	5.70	5.67
PMW-2	6:02	11.41	6.33	5.08
PMW-3	5:04	11.23	6.55	4.68
PMW-4	4:50	10.56	5.53	5.03
PMW-5	5:08	11.34	6.20	5.14
PMW-6	5:11	11.46	6.41	5.05
PMW-7	5:14	10.93	5.80	5.13
PMW-8	5:16	11.60	6.49	5.11
PMW-9	5:19	11.56	6.45	5.11
PMW-10	5:21	12.32	7.29	5.03
PMW-11	5:24	12.33	7.28	5.05
PMW-12	5:28	12.35	7.28	5.07
PMW-13	5:31	11.13	5.99	5.14
PMW-14	5:33	10.80	5.60	5.20
PMW-15	5:36	11.26	6.07	5.19
PMW-16	5:39	10.16	5.19	4.97
PMW-17	5:42	10.28	5.22	5.06
PMW-18	5:45	11.80	6.74	5.06






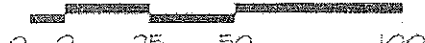
04/25/06 Sep 06 10:07 - 012800m G:\Projects\060806\Phoenix - Project\Sheet 1.dwg


 P.O. Box 23254  
 Federal Way, WA 98093  
 Office: (253) 941-0854  
 greylockllc@comcast.net

**GREYLOCK CONSULTING LLC**  
 Water Resource Environmental Services

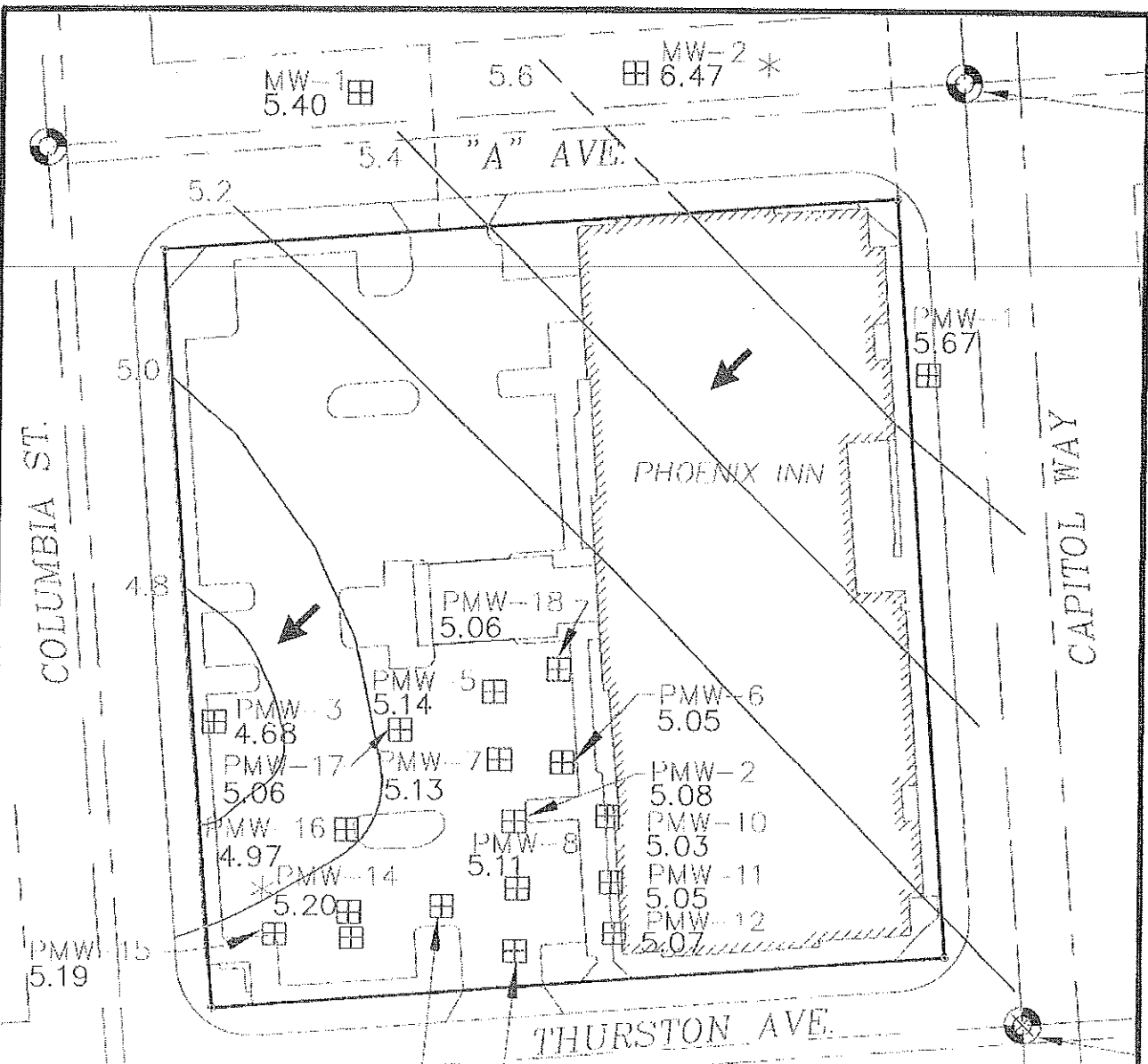
**LEGEND:**

-  MONITORING WELL
-  GROUNDWATER ELEVATION (IN FT. ABOVE MEAN SEA LEVEL)






 0 25 50 100  
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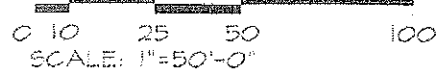
**TITLE:**  
**INFERRED & GENERALIZED GROUNDWATER CONTOURS**  
 Groundwater Elevations Date: July 16, 2006

Phoenix Inn Site Modified from W & H Pacific, March 2006	DRAWN BY: SD	DATE: August 29, 2007	SHEET NO: 1
-------------------------------------------------------------	-----------------	--------------------------	----------------




**LEGEND:**

-  MONITORING WELL
-  GROUNDWATER ELEVATION (IN FT. ABOVE MEAN SEA LEVEL)
-  VALUE NOT USED IN CONTOURING



C:\DWG\2007\10-28-06\020706.ctb Phoenix Inn Site - Groundwater - sheet 2.dwg  
 12/28/06 10:28:06 AM



P.O. Box 23264  
 Federal Way, WA 98093  
 Office: (253) 941-8654  
 greylockllc@comcast.net

**GREYLOCK CONSULTING LLC**  
 Water Resources & Environmental Services

**TITLE:**  
**INFERRED & GENERALIZED GROUNDWATER CONTOURS**  
 Groundwater Elevations Date: December 28, 2006

Phoenix Inn Site  
 Modified from W & H Pacific, March 2006

DRAWN BY:  
 SD

DATE:  
 August 29, 2007

SHEET NO:  
 2

SHEET NO:  
 2

**GROUNDWATER MONITORING  
REPORT**

**RECEIVED**

JUL 02 2007

**DECEMBER 28, 2006**

Washington State  
Department of Ecology

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**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

January 27, 2007

**RECEIVED**

**JUL 02 2007**

Washington State  
Department of Ecology

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: REMEDIAL INVESTIGATIONS AND SITE CHARACTERIZATION REPORT FOR  
THE PHOENIX INN PROPERTY LOCATED AT 415 CAPITOL WAY N., OLYMPIA,  
WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of three (3) groundwater monitoring events performed on the former Reliable Steel property. The results of these groundwater monitoring events were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.01 and 6.29 feet b.g.s. in the sampled monitoring wells.

### **MONITORING WELLS**

#### **Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

**Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public “right of ways” located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public “right of ways” located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Notice of Intent Forms for all of the monitoring wells were properly filed with Ecology.

**GROUNDWATER MONITORING**

**Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

**Groundwater Sampling**

On December 28, 2006, I measured groundwater elevations and obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.’s.

Groundwater sample PMW-8 was submitted for Waste Oil Range Organics analyses as per MTCA Table 830-1.

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well #PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-5 reported the detectable presence of diesel fuel range T.P.H. and B.T.E.X.s at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring wells PMW-5 reported the presence of gasoline range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported the presence of gasoline range T.P.H., Benzene, and Xylenes at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported no detectable presence of PCBs, MTBE, and/or EDB.

The results of these groundwater monitoring activities indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak og Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **GROUNDWATER SAMPLING PROTOCOLS**

### **Groundwater Sampling Protocols**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

#### **6.4 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

#### **6.5 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

One (1) groundwater sample was screened for Waste Oil Range Organics using EPA method 8260, EPA method 8082, EPA method 239.2, method NWTPH-Gx, and NWTPH-Dx / Dx Extended.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

#### **7.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 8.0 SUMMARY

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells MW-10, 6-MW, PMW-1, PMW-4, MW-1, and MW-2, and on-site monitoring wells PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

The results of this groundwater monitoring event reported the presence of gasoline range T.P.H. and/or B.T.E.X.s at levels that exceed Ecology's Method "A" Clean Up Levels in the waters obtained from on-site monitoring wells PMW-8, and PMW-5.

Laboratory analyses results for on-site monitoring wells PMW-5 and PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

The results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.


The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

## 8.3 Limitations

**All opinions, observations, recommendations, and statements set forth in this report are based on currently available information, current regulations, and current on-site conditions, and we cannot predict or report on the impacts of future events and/or changing regulatory requirements on this site.**

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,



Paul W. Stemen  
Vice President





PHOENIX MONITORING WELLS

WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES										
METHOD 8021B										
BTEX COMPOUNDS										
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	EPA239.2 LEAD
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
PMW-1	12/28/06	5.7'	4:53 AM	ND	ND	ND	ND	ND	ND	ND
PMW-2	12/28/06	6.33'	6:02 AM	ND	ND	ND	ND	ND	ND	ND
PMW-3	12/28/06	6.55'	5:04 AM	ND	ND	ND	ND	ND	ND	ND
PMW-4	12/28/06	5.53'	4:50 AM	ND	ND	ND	ND	ND	ND	ND
PMW-5	12/28/06	6.2'	5:08 AM	ND	2.7	1.5	12	330	710	ND
PMW-6	12/28/06	6.41'	5:11 AM	ND	ND	ND	ND	ND	350	ND
PMW-7	12/28/06	5.8'	5:14 AM	ND	ND	ND	ND	ND	ND	ND
PMW-8	12/28/06	6.49'	5:16 AM	ND	ND	ND	ND	1200	ND	<1
PMW-9	12/28/06	6.45'	5:19 AM	ND	ND	ND	ND	ND	ND	ND
PMW-10	12/28/06	7.29'	5:21 AM	ND	ND	ND	ND	ND	ND	ND
PMW-11	12/28/06	7.28'	5:24 AM	ND	ND	ND	ND	ND	ND	ND
PMW-12	12/28/06	7.28'	5:28 AM	ND	ND	ND	ND	ND	ND	ND
PMW-13	12/28/06	5.99'	5:31 AM	ND	ND	ND	ND	ND	ND	ND
PMW-14	12/28/06	5.6'	5:33 AM	ND	ND	ND	ND	ND	ND	ND
PMW-15	12/28/06	6.07'	5:36 AM	ND	ND	ND	ND	ND	ND	ND
PMW-16	12/28/06	5.19'	5:39 AM	ND	ND	ND	ND	ND	ND	ND
PMW-17	12/28/06	5.22'	5:42 AM	ND	ND	ND	ND	ND	ND	ND
PMW-18	12/28/06	6.74'	5:45 AM	ND	ND	ND	ND	ND	ND	ND
MW-6	12/28/06	5.64'	4:45 AM	ND	ND	ND	ND	ND	ND	ND
MW-10	12/28/06	5.65'	4:47 AM	ND	ND	ND	ND	ND	ND	ND
MW-1	12/28/06	5.12'	4:56 AM	ND	ND	ND	ND	ND	ND	ND
MW-2	12/28/06	4.22'	4:58 AM	ND	ND	ND	ND	ND	ND	ND

PHOENIX MONITORING WELLS

SEMIVOLATILE ORGANIC COMPOUNDS PAH (8270) WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
ACENAPHLTHENE	ND				
ACENAPHTHYLENE	ND				
ANTHRACENE	ND				
BENZO(A)ANTHRACENE*	ND				
BENZO(A)PYRENE*	ND				
BENZO(B)FLUORANTHENE*	ND				
BENZO(GHL)PERYLENE	ND				
BENZO(K)FLUORANTHENE*	ND				
CHRYSENE*	ND				
DIBENZO(A,H)ANTHRACENE*	ND				
FLUORENE	ND				
FLUORANTHENE	ND				
INDENO(,1,2-CD)PYRENE*	ND				
NAPHTHALENE	ND				
1-METHYLNAPHTHALENE	2				
2-METHYLNAPHTHALENE	ND				
PHENANTHRENE	ND				
PYRENE	ND				

PHOENIX MONITORING WELLS

VOLATILE ORGANIC COMPOUNDS 8260 WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
1,1DICHLOROETHENE	ND				
METHYL-TBULYL ETHER (MTBE)	ND				
1,2 DICHLOROETHANE (EDC)	ND				
BENZENE	170				
TRICHLOROETHENE (TCE)	ND				
TOLUENE	6.5				
1,2-DIBROMOETHANE (EDB)(*)	ND				
CHLOROBENZENE	ND				
ETHYLBENZENE	4.4				
XYLENES	87				

PHOENIX MONITORING WELLS

PCB ANALYSES OF WATER (EPA METHOD 8082)					
SAMPLE NUMBER	PMB-8				
DATE	12/28/06				
DEBTH	6.49				
TIME	5:16 AM				
	ug/l				
PCB-1016	ND				
PCB-1221	ND				
PCB1232	ND				
PCB-1242	ND				
PCB-1248	ND				
PCB1254	ND				
PCB-1260	ND				

N: = 634603.16  
E: = 401420.55  
EL: = 10.52

E: = 401510.44  
EL: = 10.69

N: = 634607.16  
E: = 401618.27

PMW-1  
N: = 634512.37  
E: = 401607.55  
EL: = 11.37

PMW-3  
N: = 634397.76  
E: = 401375.22  
EL: = 11.23

N: = 634276.33  
E: = 401340.91  
EL: = 10.63

MW-6  
N: = 634225.72  
E: = 401364.76  
EL: = 10.76

MW-10  
N: = 634264.28  
E: = 401456.27  
EL: = 10.73

N: = 634297.89  
E: = 401640.50

COLUMBIA ST.

"A" AVE.

CAPITOL WAY



PHOENIX INN

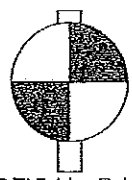
THURSTON AVE.

PMW-5  
PMW-7  
PMW-17  
PMW-18  
PMW-6  
PMW-2  
PMW-10  
PMW-11  
PMW-12  
PMW-8  
PMW-14  
PMW-15  
PMW-16

PMW-13  
PMW-9  
PMW-4

**LEGEND**

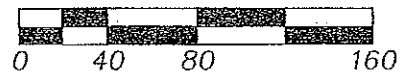
-  FOUND CASED MONUMENT
-  MONITOR WELL



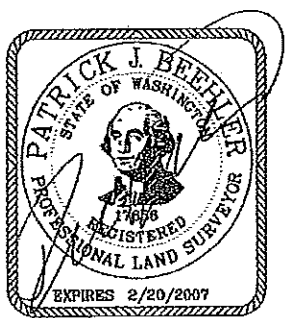
VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. = 10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1" = 80 FEET



BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-2006

Office: OLYMPIA | System: WHP-OLY-3C/KCBT | User: JUNZEE | Time: 03/14/2006 13:33:50

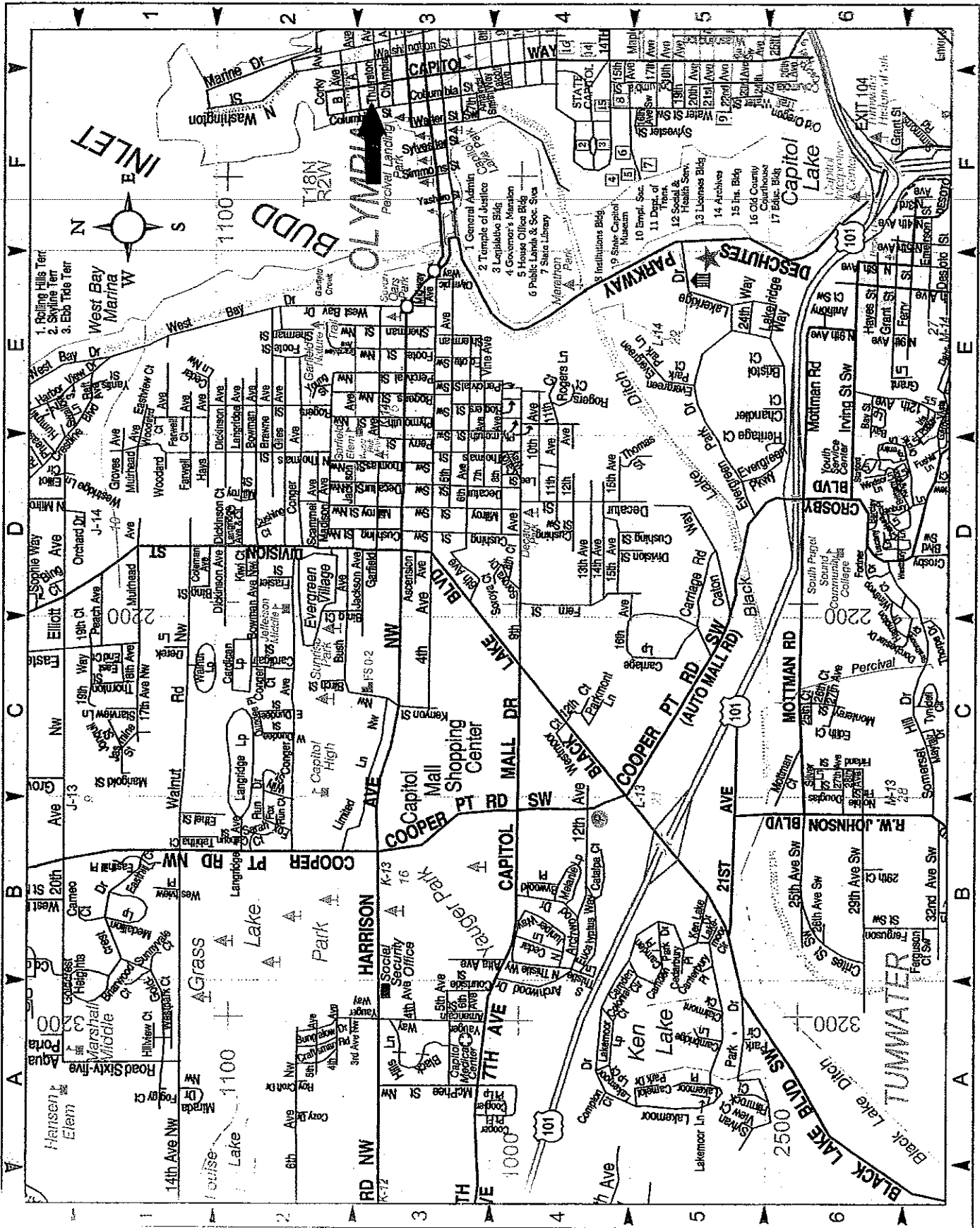
DESIGNED BY:	JMM	CHECKED BY:	PJB	
DRAWN BY:	JMM	APPROVED BY:	PJB	
LAST EDIT:		PLOT DATE:	03/14/06	
DATE	BY	REV	REVISION	CK'D/APP'R
3/14/06	JWL	1	ADDITIONAL WELLS	



724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3375  
(800) 754-1168 Fax  
www.wand.com

**STEMEN ENVIRONMENTAL**  
**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA	PROJECT NO.	DRAWING FILE NAME:	WASHINGTON
SCALE: 1" = 80'	034507	34507-SURV-SB01	1 SHEET 1



January 12, 2007

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

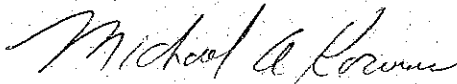
Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8021B, and WRO on January 4 & 5, 2007.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental, Inc.

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analyses of Diesel (NWTPH-Dx) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)
Method Blank	1/5/2007	84	nd
PMW-1	1/5/2007	100	nd
PMW-2	1/5/2007	70	nd
PMW-3	1/5/2007	76	nd
PMW-4	1/5/2007	113	nd
PMW-5	1/5/2007	82	<b>710</b>
PMW-5 Dup.	1/5/2007	100	<b>660</b>
PMW-6	1/5/2007	81	<b>350</b>
PMW-7	1/5/2007	95	nd
PMW-8	1/5/2007	93	nd
PMW-9	1/5/2007	70	nd
PMW-10	1/5/2007	116	nd
PMW-11	1/5/2007	90	nd
PMW-12	1/5/2007	83	nd
PMW-13	1/5/2007	110	nd
PMW-14	1/5/2007	80	nd
PMW-15	1/5/2007	84	nd
PMW-16	1/5/2007	91	nd
PMW-17	1/5/2007	86	nd
PMW-18	1/5/2007	100	nd
PMW-18 Dup.	1/5/2007	89	nd
MW-6	1/5/2007	71	nd
MW-10	1/5/2007	103	nd
MW-10 Dup.	1/5/2007	103	nd
MW-1	1/5/2007	83	nd
MW-2	1/5/2007	82	nd
Method Detection Limits			200

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY:

A. Reagan, M.Olson

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environm

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnvw.com

**Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water**

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	Surrogate Recovery (%)
Method Blank	1/4/2007	nd	nd	nd	nd	nd	85
Method Blank	1/5/2007	nd	nd	nd	nd	nd	94
LCS	1/5/2007	65	72	87	72	---	91
PMW-1	1/4/2007	nd	nd	nd	nd	nd	99
PMW-2	1/4/2007	nd	nd	nd	nd	nd	112
PMW-3	1/4/2007	nd	nd	nd	nd	nd	85
PMW-4	1/4/2007	nd	nd	nd	nd	nd	95
PMW-5	1/4/2007	nd	2.7	1.5	12	330	113
PMW-5 Dup	1/4/2007	nd	1.3	1.4	8.1	210	113
PMW-6	1/4/2007	nd	nd	nd	nd	nd	98
PMW-7	1/4/2007	nd	nd	nd	nd	nd	105
PMW-9	1/5/2007	nd	nd	nd	nd	nd	95
PMW-10	1/5/2007	nd	nd	nd	nd	nd	123
PMW-11	1/5/2007	nd	nd	nd	nd	nd	116
PMW-12	1/5/2007	nd	nd	nd	nd	nd	102
PMW-13	1/5/2007	nd	nd	nd	nd	nd	105
PMW-14	1/5/2007	nd	nd	nd	nd	nd	67
PMW-15	1/5/2007	nd	nd	nd	nd	nd	78
PMW-16	1/5/2007	nd	nd	nd	nd	nd	72
PMW-17	1/5/2007	nd	nd	nd	nd	nd	83
PMW-18	1/5/2007	nd	nd	nd	nd	nd	114
MW-6	1/5/2007	nd	nd	nd	nd	nd	68
MW-10	1/5/2007	nd	nd	nd	nd	nd	70
MW-10 Dup.	1/5/2007	nd	nd	nd	nd	nd	108
MW-1	1/5/2007	nd	nd	nd	nd	nd	100
MW-2	1/5/2007	nd	nd	nd	nd	nd	124
Method Detection Limits		1	1	1	1	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%  
 ANALYSES PERFORMED BY: A. Reagan, M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnrw.com

**PCB Analyses of Water (EPA Method 8082)**

Sample Description	Method Blank	PMW-8	PMW-8 Dup.
Date Sampled		12/28/2006	12/28/2006
Date Analyzed	1/4/2007	1/4/2007	1/4/2007
	MDL (ug/l)	(ug/l)	(ug/l)
PCB-1016	0.1	nd	nd
PCB-1221	0.1	nd	nd
PCB-1232	0.1	nd	nd
PCB-1242	0.1	nd	nd
PCB-1248	0.1	nd	nd
PCB-1254	0.1	nd	nd
PCB-1260	0.1	nd	nd
Total	0.0	0.0	0.0
Surrogate Recovery (TCMX) (%)	82	77	87
Surrogate Recovery (DCBP) (%)	74	71	96

"nd" Indicates not detected at listed detection limit.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (TCMX) AND (DCBP): 65% -135%

ANALYSES PERFORMED BY: M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

QA/QC Data - PCB Analyses - Waters

---

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
PCB 1260	0.050		0.057
TCMX			91
DCBP			95

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: M.Olson

**ESN NORTHWEST CHEMISTRY LABORATORY**

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental Inc.

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

**Analyses of Gasoline (NWTPH-Gx) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	1/4/2007	85	nd
PMW-8	1/4/2007	94	<b>1200</b>
Method Detection Limits			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

8260, µg/L		MTH BLK	LCS	PMW-8	MS	MSD	RPD
Matrix	Water	Water	Water	Water	Water	Water	
	Reporting						
Date analyzed	Limits	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	
1,1-Dichloroethene	1.0	nd	121%	nd	120%	120%	0%
Methyl-t-butyl ether (MTBE)	1.0	nd		nd			
1,2-Dichloroethane (EDC)	1.0	nd		nd			
Benzene	1.0	nd	116%	170	121%	121%	0%
Trichloroethene (TCE)	1.0	nd	115%	nd	119%	118%	1%
Toluene	1.0	nd	119%	6.5	119%	122%	2%
1,2-Dibromoethane (EDB)(*)	0.10	nd		nd			
Chlorobenzene	1.0	nd	110%	nd	121%	121%	0%
Ethylbenzene	1.0	nd		4.4			
Xylenes	1.0	nd		87			

\*-instrument detection limits

Surrogate recoveries:

Dibromofluoromethane	119%	120%	114%	114%	117%
Toluene-d8	111%	113%	116%	118%	121%
4-Bromofluorobenzene	122%	118%	127%	127%	116%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

J - estimated quantitation, below listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

PAH(8270), ug/L	MTH BLK	LCS	PMW-8	MS	MSD	RPD
Matrix	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07
Date analyzed	Limits	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07
Acenaphthene	0.2	nd	86%	nd	84%	80%
Acenaphthylene	0.2	nd		nd		
Anthracene	0.2	nd		nd		
Benzo(a)anthracene*	0.2	nd		nd		
Benzo(a)pyrene*	0.2	nd		nd		
Benzo(b)fluoranthene*	0.2	nd		nd		
Benzo(ghi)perylene	0.2	nd		nd		
Benzo(k)fluoranthene*	0.2	nd		nd		
Chrysene*	0.2	nd		nd		
Dibenzo(a,h)anthracene*	0.2	nd		nd		
Fluorene	0.2	nd		nd		
Fluoranthene	0.2	nd	81%	nd		
Indeno(1,2,3-cd)pyrene*	0.2	nd		nd		
Naphthalene	0.2	nd		nd		
1-Methylnaphthalene	0.2	nd		2.0		
2-Methylnaphthalene	0.2	nd		nd		
Phenanthrene	0.2	nd		nd		
Pyrene	0.2	nd		nd	87%	80%
Total Carcinogens				nd		

Surrogate recoveries:

2-Fluorobiphenyl	110%	123%	95%	115%	108%
p-Terphenyl-d14	52%	61%	54%	106%	50%

Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 M - matrix interference  
 J - estimated value  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 35%



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com


01/11/2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501  
Attn: Julie Woods

Project: Stemen/Phoenix Inn  
Client ID: PMW-8  
Sample Matrix: Water  
Date Sampled: 12/29/2006  
Date Received: 01/03/2007  
Spectra Project: 2007010039  
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Lead by GFAA	<1	µg/L	EPA 239.2

SPECTRA LABORATORIES

  
\_\_\_\_\_  
Steve Hibbs, Laboratory Manager

a6/sej



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

January 12, 2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501

Method: 239.2  
Spectra Project: 2007010039  
Applies to Spectra #'s 1  
Sample Matrix: Water

## QUALITY CONTROL RESULTS

### METHOD BLANK

Date Prepared: 1/11/2007  
Units: ug/L

Date Analyzed: 1/11/2007

Lead <1

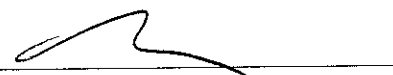
### MS/MSD

Sample Spiked: 2007010096-1  
Units: ug/L

Date Prepared: 1/11/2007  
Date Analyzed: 1/11/2007

<u>Compound</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>MS Result</u>	<u>% Recovery</u>	<u>MSD Result</u>	<u>% Recovery</u>	<u>RPD</u>
Lead	0.000	50.000	44.808	89.6	45.140	90.3	1

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEVEN ENVIRONMENTAL INC  
 ADDRESS: \_\_\_\_\_  
 PHONE: 2604389524 FAX: \_\_\_\_\_  
 CLIENT PROJECT #: STEVEN ENVIRONMENTAL PROJECT MANAGER: Steve Sullivan

DATE: 12/28/06 PAGE 1 OF 1  
 PROJECT NAME: PITTSBURGH TAD  
 LOCATION: Chapel Hill, NC  
 COLLECTOR: Steve Sullivan DATE OF COLLECTION: 12/28

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number	
					VOA 8021B BTEX ONLY	VOA 8021B BTEX ONLY	TPH - HCHO	TPH 8015 (Gasoline)	TPH 8015 (Diesel)	PAH 8100	PAH 8270	PCBs 8082	Asbestos-PLM	RCRA 8				MICA 8
1. PMW-1			HTD	VIAL	X	X	X	X	X	X	X	X	X	X	X	X		
2. PMW-2					X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-3					X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X		
5. PMW-5					X	X	X	X	X	X	X	X	X	X	X	X		
6. PMW-6					X	X	X	X	X	X	X	X	X	X	X	X		
7. PMW-7					X	X	X	X	X	X	X	X	X	X	X	X		
8. PMW-8					X	X	X	X	X	X	X	X	X	X	X	X		
9. PMW-9					X	X	X	X	X	X	X	X	X	X	X	X		
10. PMW-10					X	X	X	X	X	X	X	X	X	X	X	X		
11. PMW-11					X	X	X	X	X	X	X	X	X	X	X	X		
12. PMW-12					X	X	X	X	X	X	X	X	X	X	X	X		
13. PMW-13					X	X	X	X	X	X	X	X	X	X	X	X		
14. PMW-14					X	X	X	X	X	X	X	X	X	X	X	X		
15. PMW-15					X	X	X	X	X	X	X	X	X	X	X	X		
16. PMW-16					X	X	X	X	X	X	X	X	X	X	X	X		
17. PMW-17					X	X	X	X	X	X	X	X	X	X	X	X		
18. PMW-18					X	X	X	X	X	X	X	X	X	X	X	X		

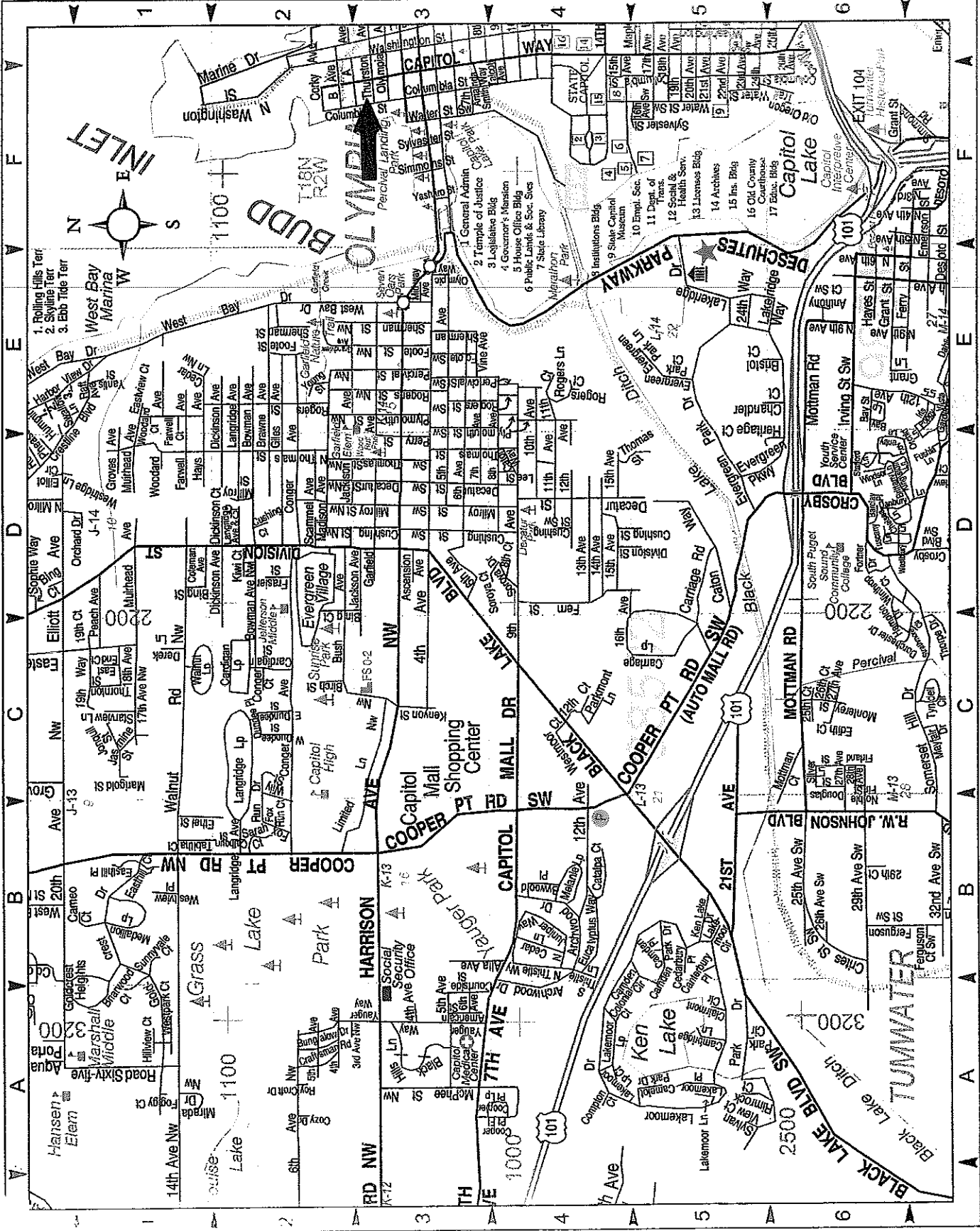
RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME 12/28/06

RELINQUISHED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_

**SAMPLE DISPOSAL INSTRUCTIONS**  
 ESN DISPOSAL @ \$2.00 each  Return  Pickup

LABORATORY NOTES:

TURN AROUND TIME: 24 HR 48 HR 5 DAY



**GROUNDWATER MONITORING  
REPORT**

**JULY, 2006**

**RECEIVED**

AUG 26 2009

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

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# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

July 26, 2006

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: REMEDIAL INVESTIGATIONS AND SITE CHARACTERIZATION REPORT FOR  
THE PHOENIX INN PROPERTY LOCATED AT 415 CAPITOL WAY N., OLYMPIA,  
WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of three (3) groundwater monitoring events performed on the former Reliable Steel property. The results of these groundwater monitoring events were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## 2.2 Site Background

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and/or groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.01 and 6.29 feet b.g.s. in the sampled monitoring wells.

## 3.0 MONITORING WELLS

### 3.1 Monitoring Well Installations

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s. to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s. and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **3.2 Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Notice of Intent Forms for all of the monitoring wells were properly filed with Ecology.

## **4.0 GROUNDWATER MONITORING**

### **4.1 Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **4.2 Groundwater Sampling**

On July 16, 2006, I measured groundwater elevations and obtained samples of the waters present in extended perimeter monitoring wells MW-10, 6-MW, PMW-1, PMW-4, MW-1, and MW-2.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses results for water samples PMW-1, PMW-4, 6-MW, MW-10, MW-1, and MW-2 indicated no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s.

The results of these groundwater monitoring activities indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak og Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **5.0 GROUNDWATER SAMPLING PROTOCOLS**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

## **6.0 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

## **7.0 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 8.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 9.0 SUMMARY

The results of this groundwater monitoring event reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s in extended perimeter monitoring wells 6MW, MW-10, PMW-4, PMW-1, MW-1, and MW-2.

The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,



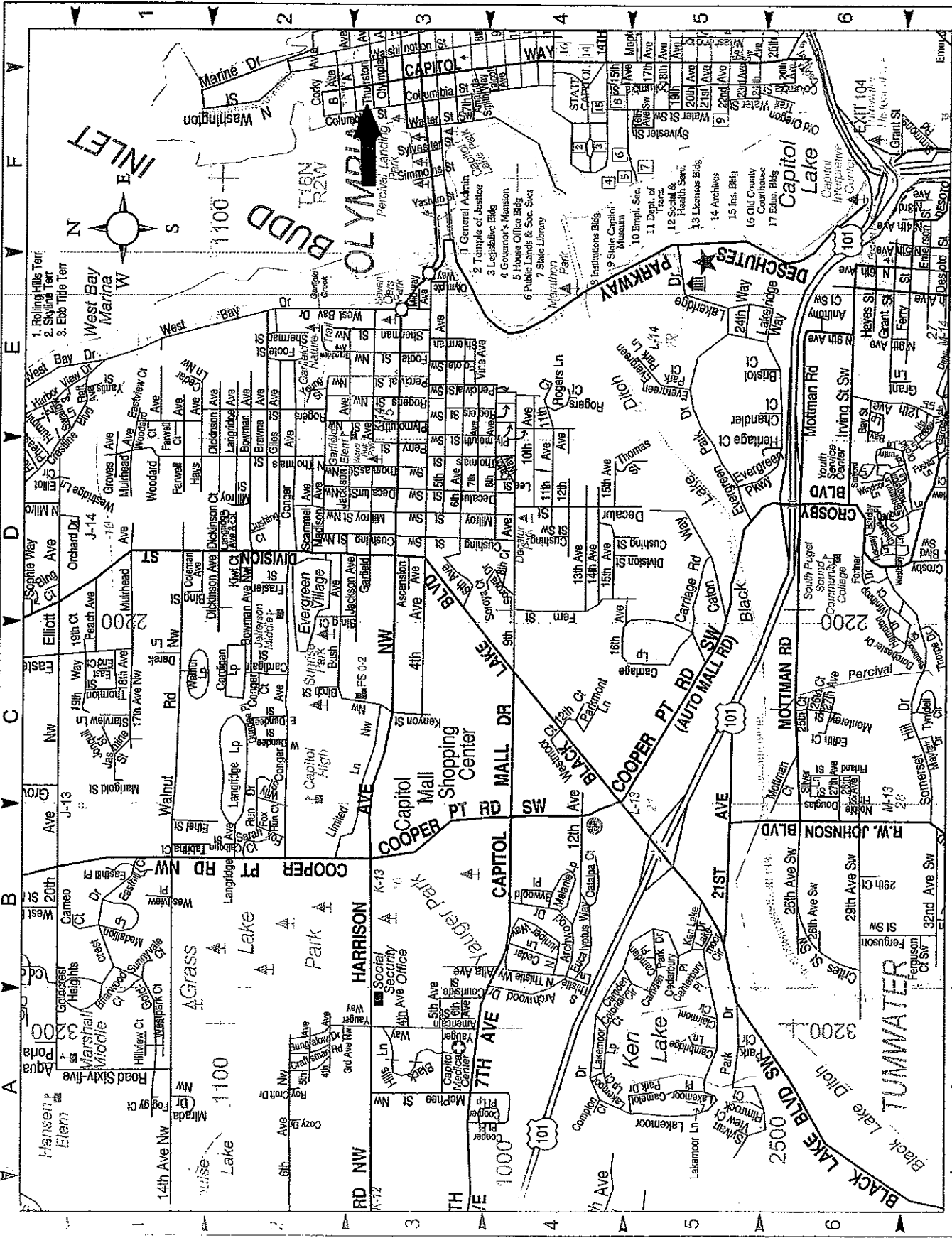
Paul W. Stemen  
Vice President

cc: Bob Mc Makin-JMI

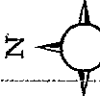
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## **APPENDIX A**

# **LABORATORY CHARTS, ANALYSES, MONITORING WELL LOCATION MAP AND SITE MAP**



- 1. Rolling Hills Terr.
- 2. Skyline Terr.
- 3. Ebb Tide Terr.



© Copyright 2003 Paragon Maps. All rights reserved. It is unlawful to reproduce, copy, distribute, or otherwise use this map for any purpose other than the original purpose for which it was prepared. Aerial photography is used where appropriate.

N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

COLUMBIA ST.

"A" AVE.

PHOENIX INN

CAPITOL WAY

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

PMW-18

PMW-5

PMW-6

PMW-17

PMW-7

PMW-2

PMW-16

PMW-8

PMW-10

PMW-14

PMW-11

PMW-12

PMW-15

THURSTON AVE.

N: =634297.89  
E: =401640.50

N: =634276.33  
E: =401340.91  
EL: =10.63

PMW-13



PMW-9

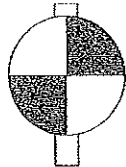
PMW-4

MW-6  
N: =634225.72  
E: =401364.76  
EL: =10.76

MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

LEGEND

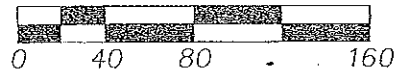
-  FOUND CASE MONUMENT
-  MONITOR WELL



VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

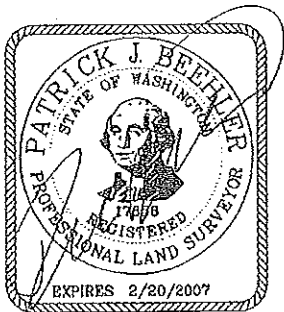
FOUND CASE MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:

PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-1A-200 G

Office: OLYMPIA | System: WHP-OLY-3C7K091 | User: JUNZEE | Time: 03/14/2006 13:53:50

DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/06		
DATE	BY	REV#	REVISION	CK'D	APPR
3/14/06	JMM	1	ADDITIONAL WELLS		



724 Columbia Street NW  
Suite 140  
Olympia, Washington 98505  
(509) 754-3915  
(509) 754-1100 Fax  
w&e@oln.com

STEMEN ENVIRONMENTAL  
MONITOR WELL LOCATION/ELEVATIONS

OLYMPIA	PROJECT NO.	DRAWING FILE NAME:	WASHINGTON
SCALE: 1"=80'	034507	34507-SURV-SB01	1 SHEET 1





Environmental  
Services Network

July 24, 2006

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8021B on July 18, 2006.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec  
President

**ESN NORTHWEST CHEMISTRY LABORATORY**

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

PHOENIX INN PROJECT  
 Olympia, Washington  
 Stemen Environmenta

**Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline (ug/L)	Surrogate Recovery (%)
Method Blank	7/18/2006	nd	nd	nd	nd	nd	115
LCS	7/18/2006	100%	100%	100%	96%	---	126
6MW	7/18/2006	nd	nd	nd	nd	nd	87
MW-10	7/18/2006	nd	nd	nd	nd	nd	90
PMW-4	7/18/2006	nd	nd	nd	nd	nd	99
PMW-1	7/18/2006	nd	nd	nd	nd	nd	92
MW-1	7/18/2006	nd	nd	nd	nd	nd	111
MW-1 Dup	7/18/2006	nd	nd	nd	nd	nd	103
MW-2	7/18/2006	nd	nd	nd	nd	nd	118
Method Detection Limits		1	1	1	1	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%

ANALYSES PERFORMED BY: G. Dutta

## ESN NORTHWEST CHEMISTRY LABORATORY

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/L)	Oil (ug/L)	Mineral Oil (ug/L)
Method Blank	7/18/2006	96	nd	nd	nd
6MW	7/18/2006	121	nd	nd	nd
MW-10	7/18/2006	115	nd	nd	nd
PMW-4	7/18/2006	109	nd	nd	nd
PMW-1	7/18/2006	118	nd	nd	nd
MW-1	7/18/2006	105	nd	nd	nd
MW-1 Dup	7/18/2006	69	nd	nd	nd
MW-2	7/18/2006	112	nd	nd	nd
Method Detection Limits			200	400	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: G. Dutta



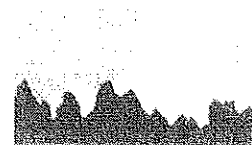
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**APPENDIX B**

**GREYLOCK CONSULTING  
REPORT**

GREYLOCK  
CONSULTING LLC

*Water Resources & Environmental Services*



September 4, 2007

Mr. Paul Stemen  
Stemen Environmental, Inc.  
P.O. Box 3644  
Olympia, WA 98509

Re: **Groundwater Gradients  
Phoenix Inn Property  
415 Capitol Way North  
Olympia, Washington**

Dear Mr. Stemen:

This letter documents the results of our evaluation of groundwater elevation data obtained from the Phoenix Inn Property in Olympia, Washington.

**Background**

Stemen Environmental, Inc. (Stemen) is currently evaluating environmental conditions and at the Phoenix Inn Site (site) located at 415 Capitol Way North in Olympia, Washington. Stemen has installed monitoring wells on the property and has collected water level measurements on July 16, 2006, and December 28, 2006. Stemen has hired Greylock Consulting LLC (Greylock) to provide interpretation of groundwater elevation data from those wells. This memo is based on water level measurements and survey data provided by Stemen.

**Site**

The site consists of 1.38 acres of commercially developed property. The Phoenix Inn hotel building currently occupies the site. The hotel building lies on the eastern portion of the property. The remaining portions of the property consist of asphalt parking lots. The site is bordered on the north by "A" Avenue, on the east by Capitol Way N, on the west by Columbia Street NW, and on the south by Thurston Avenue.

The site is located in an area that was formerly a marine tidal zone until filling for commercial purposes occurred in the late 1800s to early 1900s. Budd Inlet is located less than 300 feet to the west of the site.

## **Subsurface Soils and Monitoring Wells**

Boring and well logs from the Limited Phase 2 Environmental Site Assessment Report (Stemen, March 26, 2006) indicate that sand is the dominant near surface soil from 0 to 13 feet below ground surface.

Twenty-two monitoring wells have been installed on or adjacent to the property at different times. Most of the interior wells were installed as combination groundwater monitoring/microbe injection wells by means of Direct Push drilling techniques. Wells in the interior of the property were screened between 3 and 13 feet with either a 5-ft or 10-ft long 0.01 slot screen.

## **Groundwater**

Water levels were collected at the site on July 16, 2006 and December 28, 2006 by Stemen. On July 16<sup>th</sup>, six perimeter wells were monitored. On December 28<sup>th</sup>, twenty-two wells (perimeter and interior) were monitored. Water level measurements are provided in Table 1. Shallow groundwater at the property occurs at depths recorded from 4.01 ft to 7.29 below ground surface (bgs).

### **July 16, 2006 Monitoring Event**

On July 16, 2006 water levels were collected from 6 wells at the site between 4:25 PM and 4:39 PM. As shown on Figure 1, the groundwater flow direction at this time is interpreted to be toward the southeast with a gradient of approximately 0.004 to 0.008 ft/ft.

### **December 28, 2006 Monitoring Event**

On December 28, 2006 water levels were collected from 22 wells at the site between 4:50 AM and 6:02 AM. As shown on Figure 2, the groundwater flow direction at this time is interpreted to be toward the southwest, with a low point at PMW-3. The gradient at the northeastern portion of the site was approximately 0.005 ft/ft. The southern portion of the site shows a very flat gradient with groundwater elevations ranging from approximately 5.05 to 5.2 ft. This is an area where injection occurs. It appears that the injections have had a localized effect on the gradient in this area. Groundwater flow appears to be directed toward PMW-3 at the southwest portion of the site. Its unknown what is creating this anomaly, however, it could be related to a subsurface man-made feature.

As seen on Figure 2, two water levels measurements were not used in contouring as they were not consistent with surrounding measurements.

## **Discussion**

Based on two groundwater monitoring events in July and December of 2006, groundwater flow is toward the southeast and southwest beneath the site. Its Greylock's understanding that groundwater gradients reported in March, 2006 were toward the northeast.

This site is located within 300 feet of the shoreline of Budd Inlet. Tidal fluctuations in Budd Inlet can be over 15 feet in one tidal cycle (<http://tidesandcurrents.noaa.gov>). The gradient pattern (or lack of pattern) at this site is consistent with a site that is tidally influenced. Gradients at this site appear to be very flat and appear to shift with tide cycle.

One feature that is seen in gradient maps from a previous March, 2006 study and in the December 28, 2006 event is an anomalous feature near PMW-3. The gradient in this location does not appear to be natural and may be due to a subsurface, man-made feature. The gradient at the southern portion of the site appears to be very locally affected by subsurface injections in this area.

### Limitations

This report is based upon the application of scientific principles and professional judgment to certain facts with resulting subjective interpretations. Professional judgments expressed herein are based upon the facts currently available within the limits of the existing data, scope of work, budget, and schedule. Groundwater gradients presented in this report are based on water levels and survey information provided by others. We make no warranties, expressed or implied, including, without limitation, warranties are to the fitness of the site for a particular purpose.

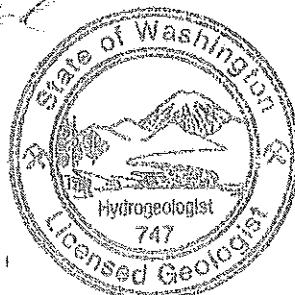
If you have any questions regarding this report, please call me at (253) 941-0654.

Sincerely,

GREYLOCK CONSULTING LLC

  
Suzanne Dudziak  
Principal Hydrogeologist

Attachments: 1 Table  
2 Figures



Suzanne Dudziak

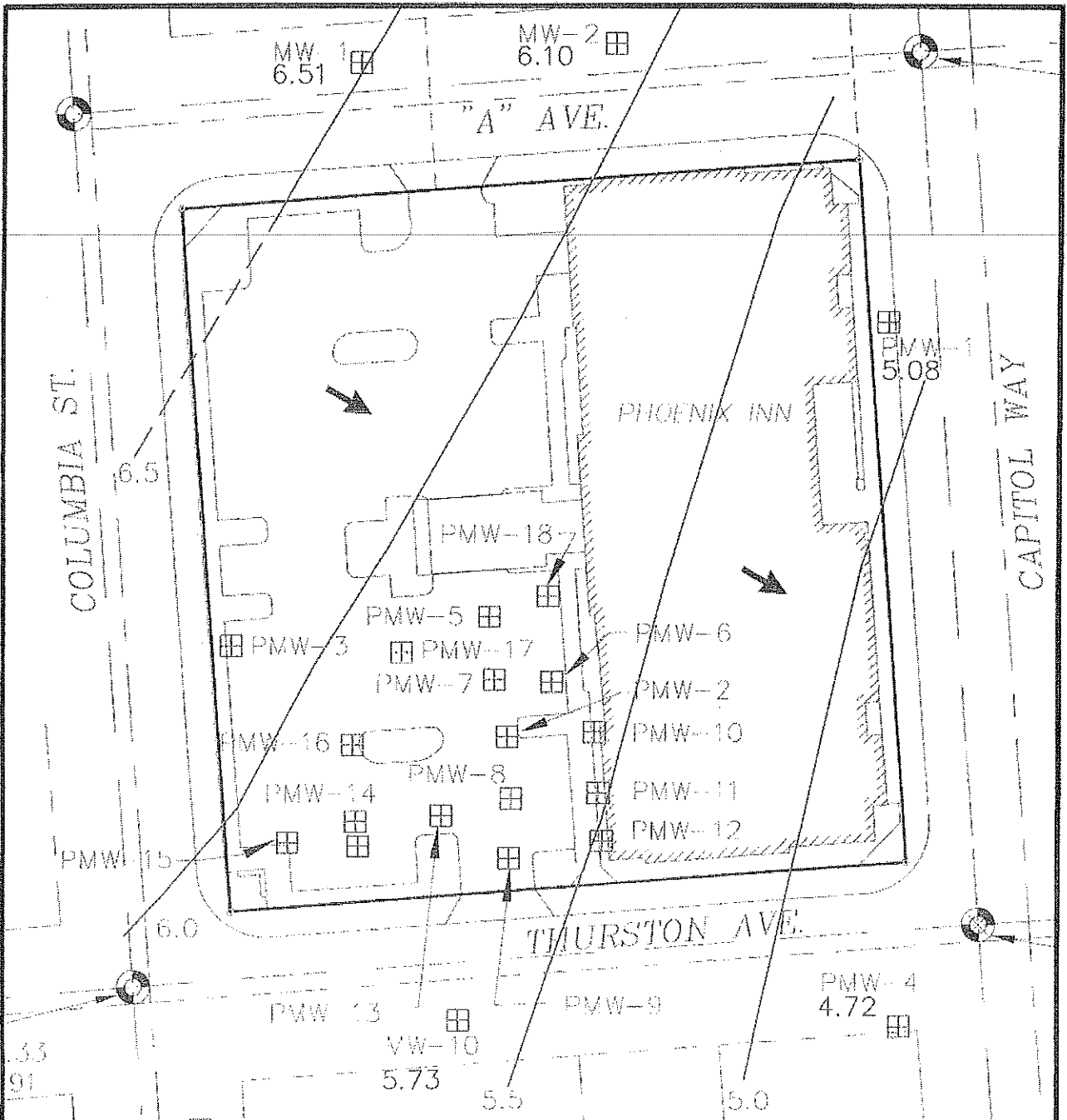
**Table 1. Phoenix Inn Site, Groundwater Elevations**

July 16, 2006

Station	Time PM	Elevation (ft above MSL)	Depth to GW (ft)	GW Elevation (ft above MSL)
MW-1	4:39	10.52	4.01	6.51
MW-2	4:37	10.69	4.59	6.10
MW-6	4:25	10.76	4.98	5.78
MW-10	4:30	10.73	5.00	5.73
PMW-1	4:35	11.37	6.29	5.08
PMW-4	4:32	10.56	5.84	4.72

Dec. 28, 2006

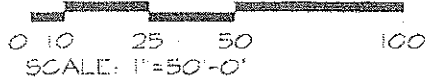
Station	Time AM	Elevation (ft above MSL)	Depth to GW (ft)	GW Elevation (ft above MSL)
MW-1	4:56	10.52	5.12	5.40
MW-2	4:58	10.69	4.22	6.47
MW-6	4:45	10.76	5.64	5.12
MW-10	4:47	10.73	5.65	5.08
PMW-1	4:53	11.37	5.70	5.67
PMW-2	6:02	11.41	6.33	5.08
PMW-3	5:04	11.23	6.55	4.68
PMW-4	4:50	10.56	5.53	5.03
PMW-5	5:08	11.34	6.20	5.14
PMW-6	5:11	11.46	6.41	5.05
PMW-7	5:14	10.93	5.80	5.13
PMW-8	5:16	11.60	6.49	5.11
PMW-9	5:19	11.56	6.45	5.11
PMW-10	5:21	12.32	7.29	5.03
PMW-11	5:24	12.33	7.28	5.05
PMW-12	5:28	12.35	7.28	5.07
PMW-13	5:31	11.13	5.99	5.14
PMW-14	5:33	10.80	5.60	5.20
PMW-15	5:36	11.26	6.07	5.19
PMW-16	5:39	10.16	5.19	4.97
PMW-17	5:42	10.28	5.22	5.06
PMW-18	5:45	11.80	6.74	5.06



**LEGEND:**

MONITORING WELL

GROUNDWATER ELEVATION  
(IN FT. ABOVE MEAN SEA LEVEL)



P.O. Box 23254  
 Federal Way, WA 98093  
 Office: (253) 941-0854  
 greylockllc@comcast.net

**GREYLOCK CONSULTING LLC**  
Water Resources & Environmental Services

**TITLE:**  
**INFERRED & GENERALIZED GROUNDWATER CONTOURS**  
Groundwater Elevations Date: July 16, 2006

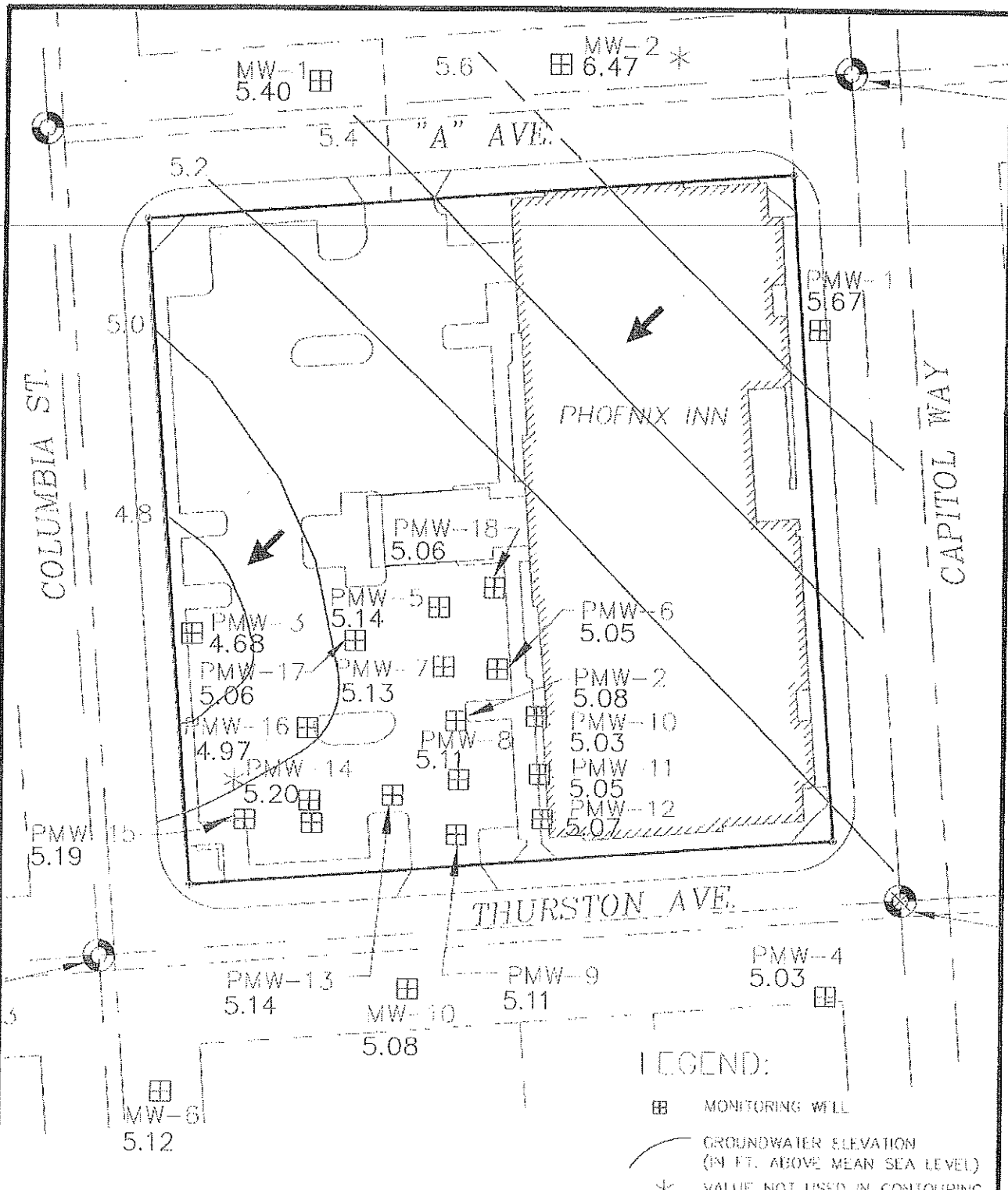
Phoenix Inn Site  
Modified from W & H Pacific, March 2006

DRAWN BY:  
SD

DATE:  
August 29, 2007

SHEET NO:  
1

CADSW: Sun, 08/20/07 11:40:24am C:\Projects\0808\_Greylock\Phoenix\_Inn\Project\_Sheet\_1.dwg




**LEGEND:**

▣ MONITORING WELL

— GROUNDWATER ELEVATION (IN FT. ABOVE MEAN SEA LEVEL)

\* VALUE NOT USED IN CONTOURING

0 10 25 50 100  
SCALE: 1"=50'-0"

  
**GRAYLOCK CONSULTING LLC**  
 Water Resources & Environmental Services  
 P.O. Box 23264  
 Federal Way, WA 98093  
 Office: (253) 841-0854  
 graylockllc@comcast.net

**TITLE:**  
**INFERRED & GENERALIZED GROUNDWATER CONTOURS**  
 Groundwater Elevations Date: December 28, 2006

Phoenix Inn Site Modified from W & H Pacific, March 2006	DRAWN BY: SD	DATE: August 29, 2007	SHEET NO: 2
-------------------------------------------------------------	-----------------	--------------------------	----------------

December 28, 2006 10:25am: D:\Project\Consulting\Phoenix\_Inn\_Site\_2.dwg

**GROUNDWATER MONITORING  
REPORT**

**JULY 26, 2006**

**RECEIVED**

**JUL 02 2007**

Washington State  
Department of Ecology

**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEE1081J9

Telephone 360-438-9521 Fax 360-412-1225

July 26, 2006

RECEIVED

JUL 02 2007

Washington State  
Department of Ecology

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: REMEDIAL INVESTIGATIONS AND SITE CHARACTERIZATION REPORT FOR  
THE PHOENIX INN PROPERTY LOCATED AT 415 CAPITOL WAY N., OLYMPIA,  
WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of three (3) groundwater monitoring events performed on the former Reliable Steel property. The results of these groundwater monitoring events were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.01 and 6.29 feet b.g.s. in the sampled monitoring wells.

### **MONITORING WELLS**

#### **Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s. and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Notice of Intent Forms for all of the monitoring wells were properly filed with Ecology.

## **GROUNDWATER MONITORING**

### **Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **Groundwater Sampling**

On July 18, 2006, I measured groundwater elevations and obtained samples of the waters present in extended perimeter monitoring wells MW-10, 6-MW, PMW-1, PMW-4, MW-1, and MW-2.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.'s.

Laboratory analyses results for water samples PMW-1, PMW-4, 6-MW, MW-10, MW-1, and MW-2 indicated no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s.

The results of these groundwater monitoring activities indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak og Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **GROUNDWATER SAMPLING PROTOCOLS**

### **Groundwater Sampling Protocols**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

### **6.4 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

### **6.5 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

## 7.0 HEALTH AND SAFETY

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 8.0 SUMMARY

The results of this groundwater monitoring event reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and/or B.T.E.X.'s in extended perimeter monitoring wells 6MW, MW-10, PMW-4, PMW-1, MW-1, and MW-2.

The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

## 8.3 Limitations

**All opinions, observations, recommendations, and statements set forth in this report are based on currently available information, current regulations, and current on-site conditions, and we cannot predict or report on the impacts of future events and/or changing regulatory requirements on this site.**

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,



Paul W. Stemen  
Vice President





N: =634585.64  
E: =401318.82  
EL: =10.46

MW-1  
N: =634603.16  
E: =401420.55  
EL: =10.52

MW-2  
N: =634609.71  
E: =401510.44  
EL: =10.69

N: =634607.16  
E: =401618.27

PMW-1  
N: =634512.37  
E: =401607.55  
EL: =11.37

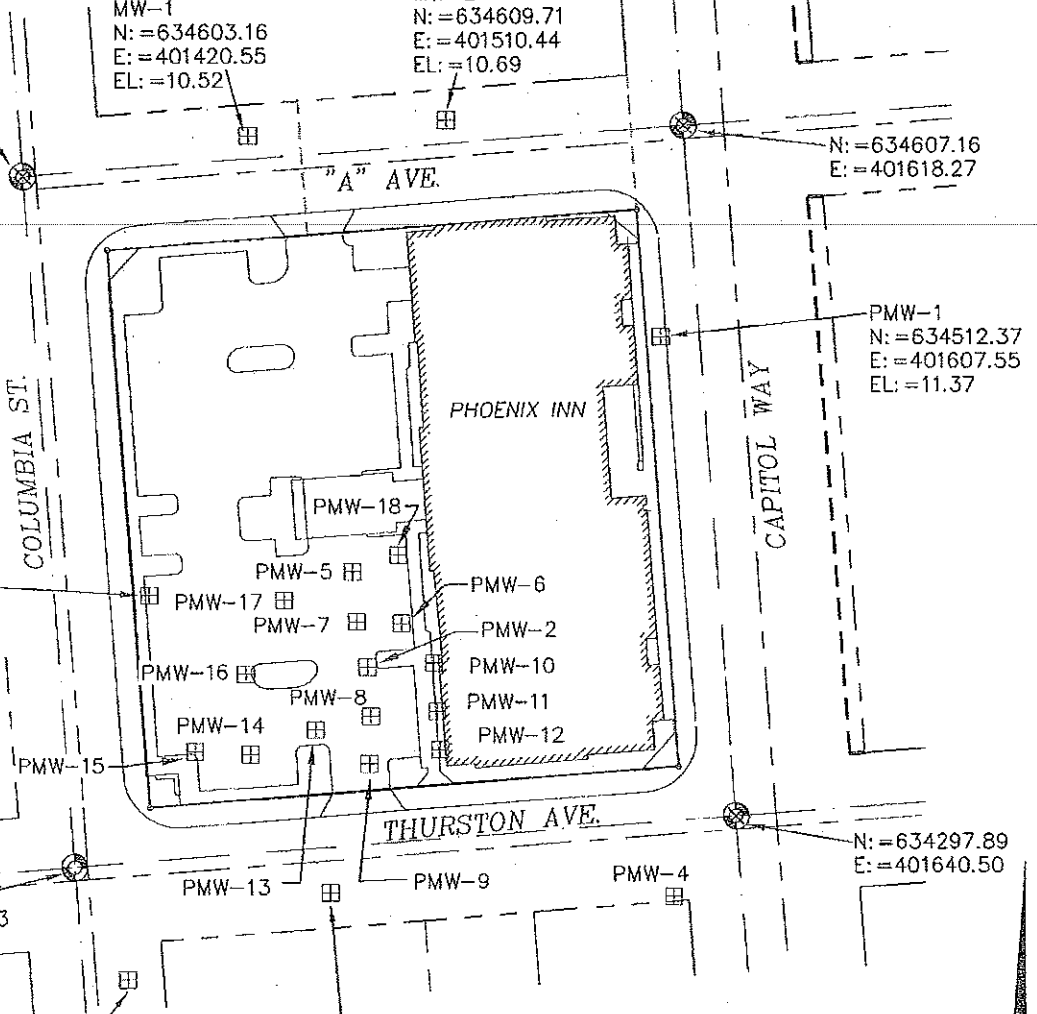
PMW-3  
N: =634397.76  
E: =401375.22  
EL: =11.23

N: =634276.33  
E: =401340.91  
EL: =10.63

MW-6  
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E: =401364.76  
EL: =10.76

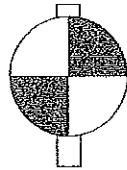
MW-10  
N: =634264.28  
E: =401456.27  
EL: =10.73

N: =634297.89  
E: =401640.50



**LEGEND**

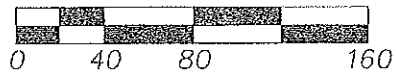
- FOUND CASED MONUMENT
- MONITOR WELL



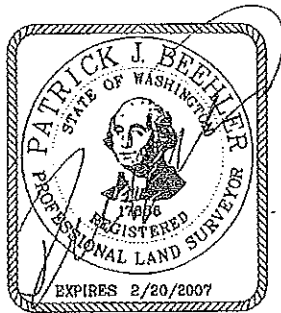
VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. =10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN



3-14-2006

Office: OLYMPIA | System: WHP-DLY-3C/KCG1 | User: JLNZEE | Time: 03/14/2006 13:33:50

DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/06		
DATE	BY	REV	REVISION	CK'D	APPR
3/14/06	JWL	1	ADDITIONAL WELLS		

724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-3315  
(800) 754-1189 Fax  
wega.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA SCALE: 1"=80'	PROJECT NO. 034507	DRAWING FILE NAME: 34507-SURV-SB01	WASHINGTON 1 SHEET 1
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Environmental  
Services Network

July 24, 2006

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8021B on July 18, 2006.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec  
*President*

**ESN NORTHWEST CHEMISTRY LABORATORY**

PHOENIX INN PROJECT  
 Olympia, Washington  
 Stemen Environmental

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnw.com

**Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water**

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline (ug/L)	Surrogate Recovery (%)
Method Blank	7/18/2006	nd	nd	nd	nd	nd	115
LCS	7/18/2006	100%	100%	100%	96%	---	126
6MW	7/18/2006	nd	nd	nd	nd	nd	87
MW-10	7/18/2006	nd	nd	nd	nd	nd	90
PMW-4	7/18/2006	nd	nd	nd	nd	nd	99
PMW-1	7/18/2006	nd	nd	nd	nd	nd	92
MW-1	7/18/2006	nd	nd	nd	nd	nd	111
MW-1 Dup	7/18/2006	nd	nd	nd	nd	nd	103
MW-2	7/18/2006	nd	nd	nd	nd	nd	118
Method Detection Limits		1	1	1	1	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%

ANALYSES PERFORMED BY: G. Dutta

**ESN NORTHWEST CHEMISTRY LABORATORY**

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

**Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/L)	Oil (ug/L)	Mineral Oil (ug/L)
Method Blank	7/18/2006	96	nd	nd	nd
6MW	7/18/2006	121	nd	nd	nd
MW-10	7/18/2006	115	nd	nd	nd
PMW-4	7/18/2006	109	nd	nd	nd
PMW-1	7/18/2006	118	nd	nd	nd
MW-1	7/18/2006	105	nd	nd	nd
MW-1 Dup	7/18/2006	69	nd	nd	nd
MW-2	7/18/2006	112	nd	nd	nd
Method Detection Limits			200	400	400

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: G. Dutta



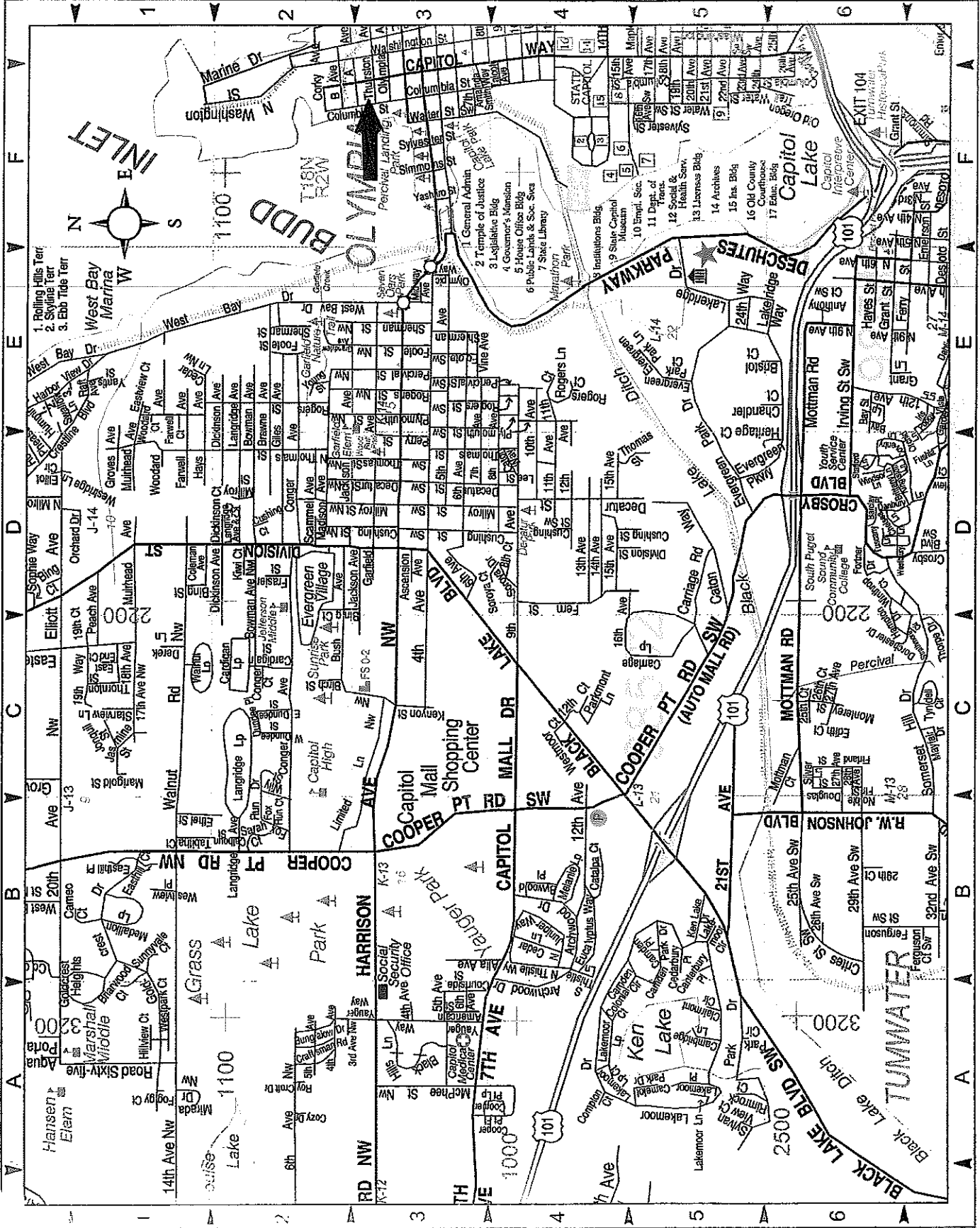
# CHAIN-OF-CUSTODY RECORD

CLIENT: STEWART ENVIRONMENTAL INC. DATE: 7/17/06 PAGE 1 OF 1  
 ADDRESS: \_\_\_\_\_ PROJECT NAME: PHOENIX FAN  
 PHONE: 360-438-9321 FAX: \_\_\_\_\_ LOCATION: BYLAND, WA  
 CLIENT PROJECT #: PHOENIX FAN PROJECT MANAGER: PAUL STERNER COLLECTOR: PAUL STERNER DATE OF COLLECTION: 7/16/06

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES											NOTES	Total Number of Containers	Laboratory Note Number	
					VOA 8021B	VOA 8021B BTEX ONLY	SEM VOL 8270	TPH -HClD	TPH 8015 (Grease)	TPH 8015 (A & O)	PAH 8100	PAH 8270	PCBS 8082	EPH	VPH				Methamphetamine
1. GW-1			H2O	Vial	X	X	X	X	X	X	X	X	X	X	X	X	X		
2. MW-10					X	X	X	X	X	X	X	X	X	X	X	X	X		
3. PMW-4					X	X	X	X	X	X	X	X	X	X	X	X	X		
4. PMW-1					X	X	X	X	X	X	X	X	X	X	X	X	X		
5. PMW-14					X	X	X	X	X	X	X	X	X	X	X	X	X		
6. MW-1					X	X	X	X	X	X	X	X	X	X	X	X	X		
7. MW-2					X	X	X	X	X	X	X	X	X	X	X	X	X		
8.																			
9.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.																			
18.																			

**RELINQUISHED BY (Signature)** \_\_\_\_\_ **DATE/TIME** \_\_\_\_\_ **RECEIVED BY (Signature)** \_\_\_\_\_ **DATE/TIME** \_\_\_\_\_  
**RELINQUISHED BY (Signature)** \_\_\_\_\_ **DATE/TIME** 9:00 AM **RECEIVED BY (Signature)** \_\_\_\_\_ **DATE/TIME** 3:17 PM  
**LABORATORY NOTES:**  
 TOTAL NUMBER OF CONTAINERS \_\_\_\_\_  
 CHAIN OF CUSTODY SEALS Y/N/NA \_\_\_\_\_  
 SEALS INTACT? Y/N/NA \_\_\_\_\_  
 RECEIVED GOOD COND./COLD \_\_\_\_\_  
 NOTES: \_\_\_\_\_  
 Turn Around Time: 24 HR 48 HR 5 DAY

**SAMPLE DISPOSAL INSTRUCTIONS**  
 ESN DISPOSAL @ \$2.00 each  Return  Pickup



**GROUNDWATER MONITORING  
REPORT**

**DECEMBER 28, 2006**

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**THE PHOENIX INN PROPERTY  
415 CAPITOL WAY N.  
OLYMPIA, WASHINGTON**

**Prepared By**

**Paul W. Stemen**

**Stemen Environmental, Inc.**

# STEMEN ENVIRONMENTAL, INC.

P.O. BOX 3644  
LACEY, WASHINGTON 98509-3644  
CONTR. LIC. #STEMEEI081J9

Telephone 360-438-9521 Fax 360-412-1225

January 27, 2007

Mr. Scott Rose  
Department of Ecology  
Southwest Regional Office  
Toxics Clean Up Program  
P.O. Box 47775  
Olympia, Washington 98504-7775

RE: REMEDIAL INVESTIGATIONS AND SITE CHARACTERIZATION REPORT FOR  
THE PHOENIX INN PROPERTY LOCATED AT 415 CAPITOL WAY N., OLYMPIA,  
WASHINGTON.

## 1.0 INTRODUCTION

This letter documents the results of three (3) groundwater monitoring events performed on the former Reliable Steel property. The results of these groundwater monitoring events were obtained for screening and site characterization purposes.

## 2.0 SITE CHARACTERISTICS AND BACKGROUND

### 2.1 Site Characteristics

The subject property, Tax Parcel #78500100300, consists of 1.38 acres of commercially developed property. The subject property is located in section 14, township 18 north, range 2 west.

The subject property is located at 415 Capitol Way N., Olympia, Washington. The subject property is immediately bordered on the north by A Avenue, on the east by Capitol Way N., on the west by Columbia Street N.W., and on the south by Thurston Avenue.

The subject property is located less than 300 feet east of the shoreline of the western arm of Budd Inlet.

The Phoenix Inn hotel building currently occupies the subject property. The two-story hotel building, constructed on the property in 1999, lies on the eastern portion of the property, the hotel's asphalt surfaced parking lots occupies the western portion of the property.

The subject property is located in an area that is currently occupied by multi-family residential buildings, professional office buildings, light industrial facilities, municipal parks, government offices and facilities, waterfront properties, and commercial/retail businesses.

## **2.2 Site Background**

The subject property is located in an area that was formerly a marine intertidal zone, until filling for commercial purposes occurred in the late 1800s/early 1900s.

In previous years bulk fuel storage facilities were operated on the properties located directly southwest and north of the subject property. Available information documents the release of petroleum products to the soils and or/groundwaters beneath these sites. Remedial Investigations and Remedial Corrective Action Projects have been performed on these sites and the results have been reported to Ecology. A commercial office building is currently located on the northerly site while a public park occupies the southwesterly site.

Available information indicates that in previous years the subject property has been occupied by a bulk fuel storage facility, a furniture store, a variety store, a marine sales, service, and repair facility, a storage warehouse, a vehicle fueling station, and the Farmers Market. Underground and aboveground fuel storage tanks were used in conjunction with the operations of some of the above listed former occupants of the subject property.

Soils present beneath the investigated portions of the subject property consisted of dark colored fine grain sand clay/marine type silts intermixed with seashell fragments at selected depths.

Groundwater was present at depths ranging between 4.01 and 6.29 feet b.g.s. in the sampled monitoring wells.

## **MONITORING WELLS**

### **Monitoring Well Installations**

On January 20, February 3, February 9, and March 1, 2006, a total of eighteen (18) combination groundwater monitoring/microbe injection wells were installed at selected locations on the subject site and the public "right of ways" located directly adjacent to the boundaries of the subject property. The majority of the selected installation locations were located on the southern central, and southwestern portions of the site. The two inch in diameter P.V.C. monitoring wells were installed by Licensed Well Drillers/Licensed Geologists from Environmental Service Network Northwest Inc., Olympia, Washington.

Fifteen (15) of the monitoring wells/injection wells were installed using the Direct Push Sampling System.

Monitoring wells # PMW-1, PMW-2, and PMW-3, PMW-4, and PMW-15 were advanced to a depth of 13 feet b.g.s. and screened from 3 feet b.g.s. to 13 feet b.g.s.

Monitoring wells # PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-13, PMW-14, PMW-16, PMW-17 and PMW-18 were advanced to a depth of 10 feet b.g.s. and screened from 3 feet b.g.s to 10 feet b.g.s.

Three (3) monitoring wells were installed at selected locations that were not reasonably accessible by the truck mounted Direct Push Sampling System. The monitoring wells were installed, by Licensed Well Drillers, using manual well installation techniques. Monitoring wells PMW-10 and PMW-12 were advanced to a depth of 9 feet b.g.s. and screened from 4 feet b.g.s. to 9 feet b.g.s., and monitoring well PMW-11 was advanced to a depth of 8 feet b.g.s and screened from 3 feet b.g.s. to 8 feet b.g.s.

### **Existing Monitoring Wells**

Monitoring wells MW-10, 6MW, MW-1, and MW-2 were installed as part of previous remedial investigations in recent years.

Monitoring wells MW-1 and MW-2 are located in the public "right of ways" located to the north of the subject property, and monitoring wells MW-10 and 6MW are located in the public "right of ways" located to the south and southwest of the subject property.

Measurable quantities of water were found to be present in all of the monitoring wells on the dates of their installation.

Notice of Intent Forms for all of the monitoring wells were properly filed with Ecology.

## **GROUNDWATER MONITORING**

### **Groundwater Elevations**

Groundwater elevations were measured using an electronic water level indicator. Depth to water was measured from the center point of the top of the monitoring well monument (ground surface).

Monitoring well monument elevations were surveyed by W&H Pacific, Olympia, Washington.

### **Groundwater Sampling**

On December 28, 2006, I measured groundwater elevations and obtained samples of the waters present in the extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-5, PMW-6, PMW-7, PMW-8, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18.

Groundwater samples were immediately submitted for appropriate laboratory analyses and screened for gasoline range T.P.H., diesel fuel range T.P.H., heavy oil range T.P.H., mineral oil range T.P.H., and B.T.E.X.'s.

Groundwater sample PMW-8 was submitted for Waste Oil Range Organics analyses as per MTCA Table 830-1.

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells #MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells # PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

Laboratory analyses results for on-site monitoring well #PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-5 reported the detectable presence of diesel fuel range T.P.H. and B.T.E.X.s at levels that do not exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring wells PMW-5 reported the presence of gasoline range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported the presence of gasoline range T.P.H., Benzene, and Xylenes at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for on-site monitoring well #PMW-8 reported no detectable presence of PCBs, MTBE, and/or EDB.

The results of these groundwater monitoring activities indicate that the petroleum impacted waters present within the boundaries of the subject have not migrated off-site.

The inferred direction of groundwater flow on the subject property and areas immediately surround the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report presented by Ms. Suzanne Dudziak og Greylock Consulting LLC.

Groundwater elevations and laboratory analyses results are summarized in the attached Tables.

Groundwater monitoring well locations and monument elevations are depicted on the Monitor Well Locations/Elevations Map.

## **GROUNDWATER SAMPLING PROTOCOLS**

### **Groundwater Sampling Protocols**

Prior to sampling, the monitoring wells were properly purged by removing a minimum of three (3) casing volumes of water from the wells using a variable speed peristaltic pump operating at the lowest flow rate setting.

The representative groundwater samples were then obtained from the waters present in the upper portion of the screened interval of the well using the variable speed peristaltic pump operating at the lowest flow rating.

The sampled waters were transferred directly into laboratory supplied containers for temporary storage and transport.

All waters generated during purging activities were placed in appropriate containers for transportation to an appropriate off-site treatment/disposal facility.

#### **6.4 Quality Controls and Assurances**

The tubing used in association with the peristaltic pump was changed after each individual sampling event to prevent cross sample contamination.

All water samples were placed in recommended sample containers with zero head space, properly refrigerated and transported with proper chain of custody forms, to Environmental Services Network Northwest Inc. of Olympia, Washington, for appropriate laboratory analyses.

#### **6.5 Laboratory Analyses**

All groundwater samples were screened for gasoline range T.P.H. (total petroleum hydrocarbons) using method NWTPH-Gx, diesel fuel range T.P.H., heavy oil range T.P.H., and mineral oil range T.P.H. using method NWTPH-Dx / Dx Extended and B.T.E.X.'s (Benzene, Toluene, Ethylbenzene, and Xylenes) using EPA method 8021B.

One (1) groundwater sample was screened for Waste Oil Range Organics using EPA method 8260, EPA method 8082, EPA method 239.2, method NWTPH-Gx, and NWTPH-Dx / Dx Extended.

All laboratory analyses methods and quality controls meet or exceed current Department of Ecology recommendations for Site Checks and Site Assessments.

### **7.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during a personnel on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials and properly trained personnel were present on-site at all times.

4. The immediate perimeter of the work area was secured at all times by orange hazard cones.

## 8.0 SUMMARY

Laboratory analyses results for water samples obtained from extended perimeter monitoring wells MW-10, 6-MW, PMW-1 PMW-4, MW-1, and MW-2, and on-site monitoring wells PMW-2, PMW-3, PMW-7, PMW-9, PMW-10, PMW-11, PMW-12, PMW-13, PMW-14, PMW-15, PMW-16, PMW-17 and PMW-18 reported no detectable presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s.

The results of this groundwater monitoring event reported the presence of gasoline range T.P.H. and/or B.T.E.X.s at levels that exceed Ecology's Method "A" Clean Up Levels in the waters obtained from on-site monitoring wells PMW-8, and PMW-5.

Laboratory analyses results for on-site monitoring wells PMW-5 and PMW-6 reported the detectable presence of diesel fuel range T.P.H. at levels that do not exceed Ecology's Method "A" Clean Up Levels.

The results of this groundwater monitoring event indicate that the petroleum product impacted waters present on the site are not migrating off-site.

The direction of groundwater flow across the subject property is primarily to the north and is discussed in the accompanying Groundwater Gradients Report issued Ms. Suzanne Dudziak of Greylock Consulting LLC.

## 8.3 Limitations

**All opinions, observations, recommendations, and statements set forth in this report are based on currently available information, current regulations, and current on-site conditions, and we cannot predict or report on the impacts of future events and/or changing regulatory requirements on this site.**

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,



Paul W. Stemen  
Vice President

**LABORATORY ANALYSES  
TABLES, SITE MAPS AND  
STREET MAP**



PHOENIX MONITORING WELLS

WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES										
METHOD 8021B										
BTEX COMPOUNDS										
SAMPLE NUMBER	SAMPLE DATE	DEPTH	TIME	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	EPA239.2 LEAD
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
PMW-1	12/28/06	5.7'	4:53 AM	ND	ND	ND	ND	ND	ND	ND
PMW-2	12/28/06	6.33'	6:02 AM	ND	ND	ND	ND	ND	ND	ND
PMW-3	12/28/06	6.55'	5:04 AM	ND	ND	ND	ND	ND	ND	ND
PMW-4	12/28/06	5.53'	4:50 AM	ND	ND	ND	ND	ND	ND	ND
PMW-5	12/28/06	6.2'	5:08 AM	ND	2.7	1.5	12	330	710	
PMW-6	12/28/06	6.41'	5:11 AM	ND	ND	ND	ND	ND	350	
PMW-7	12/28/06	5.8'	5:14 AM	ND	ND	ND	ND	ND	ND	
PMW-8	12/28/06	6.49'	5:16 AM	ND	ND	ND	ND	1200	ND	<1
PMW-9	12/28/06	6.45'	5:19 AM	ND	ND	ND	ND	ND	ND	
PMW-10	12/28/06	7.29'	5:21 AM	ND	ND	ND	ND	ND	ND	
PMW-11	12/28/06	7.28'	5:24 AM	ND	ND	ND	ND	ND	ND	
PMW-12	12/28/06	7.28'	5:28 AM	ND	ND	ND	ND	ND	ND	
PMW-13	12/28/06	5.99'	5:31 AM	ND	ND	ND	ND	ND	ND	
PMW-14	12/28/06	5.6'	5:33 AM	ND	ND	ND	ND	ND	ND	
PMW-15	12/28/06	6.07'	5:36 AM	ND	ND	ND	ND	ND	ND	
PMW-16	12/28/06	5.19'	5:39 AM	ND	ND	ND	ND	ND	ND	
PMW-17	12/28/06	5.22'	5:42 AM	ND	ND	ND	ND	ND	ND	
PMW-18	12/28/06	6.74'	5:45 AM	ND	ND	ND	ND	ND	ND	
MW-6	12/28/06	5.64'	4:45 AM	ND	ND	ND	ND	ND	ND	
MW-10	12/28/06	5.65'	4:47 AM	ND	ND	ND	ND	ND	ND	
MW-1	12/28/06	5.12'	4:56 AM	ND	ND	ND	ND	ND	ND	
MW-2	12/28/06	4.22'	4:58 AM	ND	ND	ND	ND	ND	ND	

PHOENIX MONITORING WELLS

SEMIVOLATILE ORGANIC COMPOUNDS PAH (8270) WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
ACENAPHLTHENE	ND				
ACENAPHTHYLENE	ND				
ANTHRACENE	ND				
BENZO(A)ANTHRACENE*	ND				
BENZO(A)PYRENE*	ND				
BENZO(B)FLUORANTHENE*	ND				
BENZO(GHL)PERYLENE	ND				
BENZO(K)FLUORANTHENE*	ND				
CHRYSENE*	ND				
DIBENZO(A,H)ANTHRACENE*	ND				
FLUORENE	ND				
FLUORANTHENE	ND				
INDENO(,1,2-CD)PYRENE*	ND				
NAPHTHALENE	ND				
1-METHYLNAPHTHALENE	2				
2-METHYLNAPHTHALENE	ND				
PHENANTHRENE	ND				
PYRENE	ND				

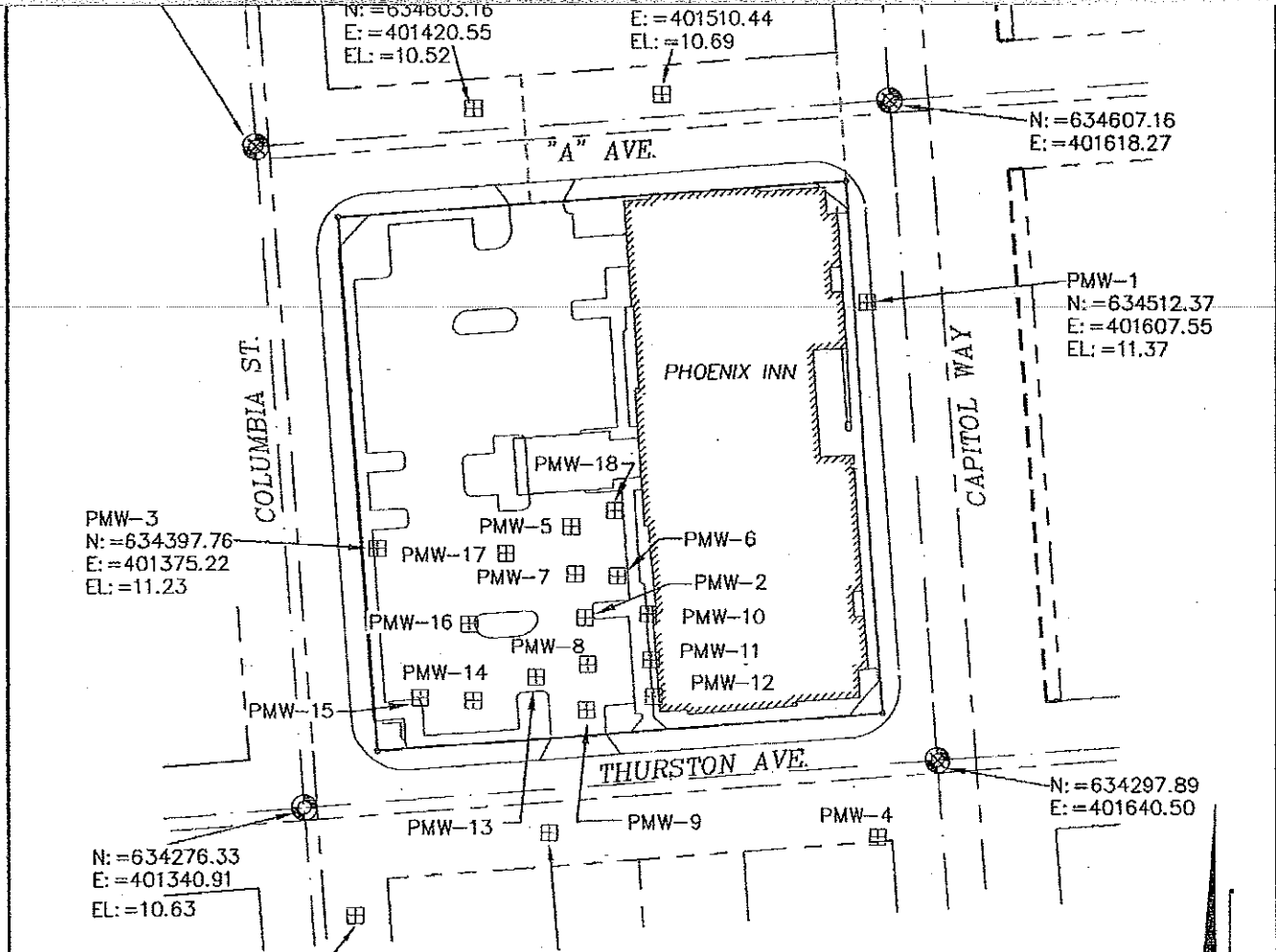
PHOENIX MONITORING WELLS

VOLATILE ORGANIC COMPOUNDS 8260WATER					
SAMPLE-NUMBER	PMW-8				
DATE	12/28/06				
DEPTHS	6.49				
TIME	5:16 AM				
	ug/l				
1,1DICHLOROETHENE	ND				
METHYL-TBULYL ETHER (MTBE)	ND				
1,2 DICHLOROETHANE (EDC)	ND				
BENZENE	170				
TRICHLOROETHENE (TCE)	ND				
TOLUENE	6.5				
1,2-DIBROMOETHANE (EDB)(*)	ND				
CHLOROBENZENE	ND				
ETHYLBENZENE	4.4				
XYLENES	87				

PHOENIX MONITORING WELLS

PCB ANALYSES OF WATER (EPA METHOD 8082)					
SAMPLE NUMBER	PMB-8				
DATE	12/28/06				
DEBTH	6.49				
TIME	5:16 AM				
	ug/l				
PCB-1016	ND				
PCB-1221	ND				
PCB1232	ND				
PCB-1242	ND				
PCB-1248	ND				
PCB1254	ND				
PCB-1260	ND				

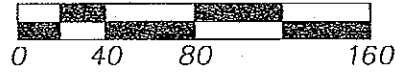
Office: OLYMPIA | System: WHP--OLY--3C7KCP1 | User: JUNZEE | Time: 03/14/2008 13:31:50



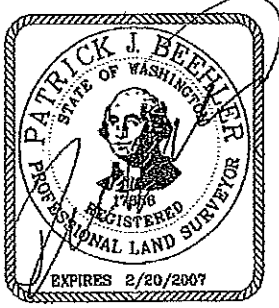
**LEGEND**

- FOUND CASED MONUMENT
- MONITOR WELL

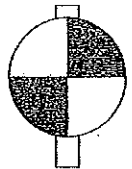
SCALE: 1"=80 FEET



BASIS OF BEARING:  
PER CITY OF OLYMPIA HELD N04°05'06"W  
BETWEEN FOUND CASE MONUMENTS ON  
COLUMBIA STREET AS SHOWN.



3-1A-2006



VERTICAL DATUM  
MEAN SEA LEVEL (MSL)  
EL. = 10.63

FOUND CASED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

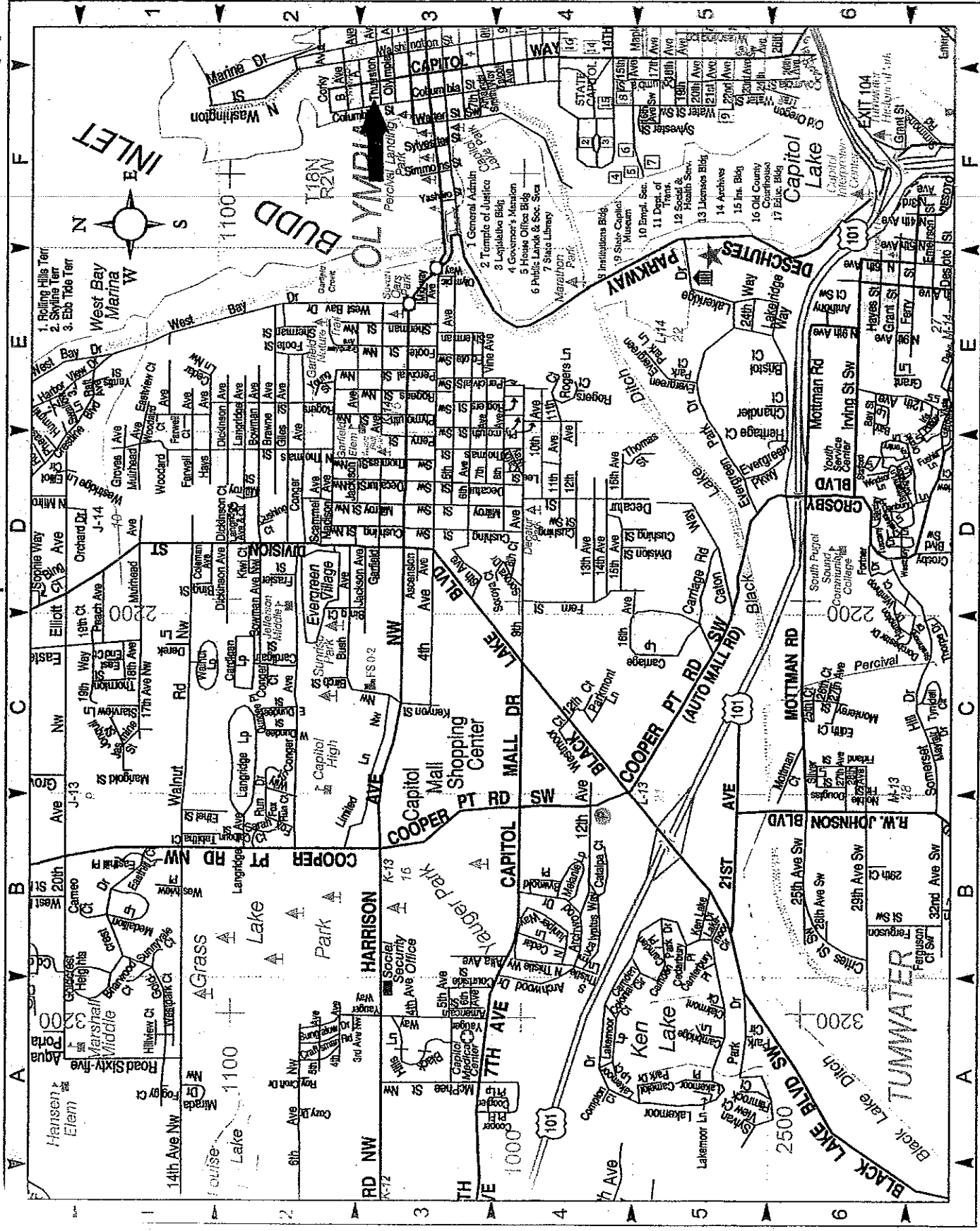
DESIGNED BY:	JMM	CHECKED BY:	PJB		
DRAWN BY:	JMM	APPROVED BY:	PJB		
LAST EDIT:		PLOT DATE:	03/14/08		
DATE	BY	REV#	REVISION	CK'D	APPR
3/14/08	JRL	1	ADDITIONAL WELLS		

724 Columbia Street NW  
Suite 140  
Olympia, Washington 98505  
(360) 294-3375  
(800) 755-2106 Fax  
wqiacb.com

**STEMEN ENVIRONMENTAL**

**MONITOR WELL LOCATION/ELEVATIONS**

OLYMPIA		WASHINGTON	
SCALE: 1"=80'	PROJECT NO. 034507	DRAWING FILE NAME: 34507--SURV--SBO1	1 SHEET 1



January 12, 2007

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

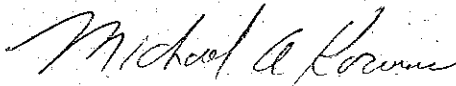
Dear Mr. Stemen:

Please find enclosed the analytical data report for the Phoenix Inn Project in Olympia, Washington. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8021B, and WRO on January 4 & 5, 2007.

The results of these analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental, Inc.

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analyses of Diesel (NWTPH-Dx) in Water**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (ug/l)
Method Blank	1/5/2007	84	nd
PMW-1	1/5/2007	100	nd
PMW-2	1/5/2007	70	nd
PMW-3	1/5/2007	76	nd
PMW-4	1/5/2007	113	nd
PMW-5	1/5/2007	82	<b>710</b>
PMW-5 Dup.	1/5/2007	100	<b>660</b>
PMW-6	1/5/2007	81	<b>350</b>
PMW-7	1/5/2007	95	nd
PMW-8	1/5/2007	93	nd
PMW-9	1/5/2007	70	nd
PMW-10	1/5/2007	116	nd
PMW-11	1/5/2007	90	nd
PMW-12	1/5/2007	83	nd
PMW-13	1/5/2007	110	nd
PMW-14	1/5/2007	80	nd
PMW-15	1/5/2007	84	nd
PMW-16	1/5/2007	91	nd
PMW-17	1/5/2007	86	nd
PMW-18	1/5/2007	100	nd
PMW-18 Dup.	1/5/2007	89	nd
MW-6	1/5/2007	71	nd
MW-10	1/5/2007	103	nd
MW-10 Dup.	1/5/2007	103	nd
MW-1	1/5/2007	83	nd
MW-2	1/5/2007	82	nd
Method Detection Limits			200

"nd" Indicates not detected at the listed detection limits.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan, M.Olson

**ESN NORTHWEST CHEMISTRY LABORATORY**

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environme

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnnw.com

**Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Water**

Sample Number	Date Analyzed	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Gasoline (ug/l)	Surrogate Recovery (%)
Method Blank	1/4/2007	nd	nd	nd	nd	nd	85
Method Blank	1/5/2007	nd	nd	nd	nd	nd	94
LCS	1/5/2007	65	72	87	72	---	91
PMW-1	1/4/2007	nd	nd	nd	nd	nd	99
PMW-2	1/4/2007	nd	nd	nd	nd	nd	112
PMW-3	1/4/2007	nd	nd	nd	nd	nd	85
PMW-4	1/4/2007	nd	nd	nd	nd	nd	95
PMW-5	1/4/2007	nd	2.7	1.5	12	330	113
PMW-5 Dup	1/4/2007	nd	1.3	1.4	8.1	210	113
PMW-6	1/4/2007	nd	nd	nd	nd	nd	98
PMW-7	1/4/2007	nd	nd	nd	nd	nd	105
PMW-9	1/5/2007	nd	nd	nd	nd	nd	95
PMW-10	1/5/2007	nd	nd	nd	nd	nd	123
PMW-11	1/5/2007	nd	nd	nd	nd	nd	116
PMW-12	1/5/2007	nd	nd	nd	nd	nd	102
PMW-13	1/5/2007	nd	nd	nd	nd	nd	105
PMW-14	1/5/2007	nd	nd	nd	nd	nd	67
PMW-15	1/5/2007	nd	nd	nd	nd	nd	78
PMW-16	1/5/2007	nd	nd	nd	nd	nd	72
PMW-17	1/5/2007	nd	nd	nd	nd	nd	83
PMW-18	1/5/2007	nd	nd	nd	nd	nd	114
MW-6	1/5/2007	nd	nd	nd	nd	nd	68
MW-10	1/5/2007	nd	nd	nd	nd	nd	70
MW-10 Dup.	1/5/2007	nd	nd	nd	nd	nd	108
MW-1	1/5/2007	nd	nd	nd	nd	nd	100
MW-2	1/5/2007	nd	nd	nd	nd	nd	124
Method Detection Limits		1	1	1	1	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene) & LCS: 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan, M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
 Olympia, Washington  
 Stemen Environmental

ESN Northwest  
 1210 Eastside Street SE Suite 200  
 Olympia, WA 98501  
 (360) 459-4670 (360) 459-3432 Fax  
 lab@esnsw.com

**PCB Analyses of Water (EPA Method 8082)**

Sample Description	Method Blank	PMW-8	PMW-8 Dup.
Date Sampled		12/28/2006	12/28/2006
Date Analyzed	1/4/2007	1/4/2007	1/4/2007
	MDL (ug/l)	(ug/l)	(ug/l)
PCB-1016	0.1	nd	nd
PCB-1221	0.1	nd	nd
PCB-1232	0.1	nd	nd
PCB-1242	0.1	nd	nd
PCB-1248	0.1	nd	nd
PCB-1254	0.1	nd	nd
PCB-1260	0.1	nd	nd
Total		0.0	0.0
Surrogate Recovery (TCMX) (%)	82	77	87
Surrogate Recovery (DCBP) (%)	74	71	96

"nd" Indicates not detected at listed detection limit.  
 "int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (TCMX) AND (DCBP): 65% -135%

ANALYSES PERFORMED BY: M.Olson

ESN NORTHWEST CHEMISTRY LABORATORY

Phoenix Inn PROJECT  
Olympia, Washington  
Stemen Environmental

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

QA/QC Data - PCB Analyses - Waters

---

Laboratory Control Sample			
	Spiked Conc. (ug/l)	Measured Conc. (ug/l)	Spike Recovery (%)
PCB 1260	0.050		0.057
TCMX			91
DCBP			95

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 20%

ANALYSES PERFORMED BY: M.Olson

## ESN NORTHWEST CHEMISTRY LABORATORY

PHOENIX INN PROJECT  
Olympia, Washington  
Stemen Environmental Inc.

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analyses of Gasoline (NWTPH-Gx) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline (ug/l)
Method Blank	1/4/2007	85	nd
PMW-8	1/4/2007	94	<b>1200</b>
Method Detection Limits			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Chlorobenzene): 65% TO 135%

ANALYSES PERFORMED BY: A. Reagan

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

8260, µg/L	MTH BLK	LCS	PMW-8	MS	MSD	RPD	
Matrix	Water	Water	Water	Water	Water	Water	
	Reporting						
Date analyzed	Limits	01/04/07	01/04/07	01/04/07	01/04/07	01/04/07	
1,1-Dichloroethene	1.0	nd	121%	nd	120%	120%	0%
Methyl-t-butyl ether (MTBE)	1.0	nd		nd			
1,2-Dichloroethane (EDC)	1.0	nd		nd			
Benzene	1.0	nd	116%	170	121%	121%	0%
Trichloroethene (TCE)	1.0	nd	115%	nd	119%	118%	1%
Toluene	1.0	nd	119%	6.5	119%	122%	2%
1,2-Dibromoethane (EDB)(*)	0.10	nd		nd			
Chlorobenzene	1.0	nd	-110%	nd	121%	121%	0%
Ethylbenzene	1.0	nd		4.4			
Xylenes	1.0	nd		87			

\*-instrument detection limits

Surrogate recoveries:

Dibromofluoromethane	119%	120%	114%	114%	117%
Toluene-d8	111%	113%	116%	118%	121%
4-Bromofluorobenzene	122%	118%	127%	127%	116%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 J - estimated quantitation, below listed reporting limits  
 Acceptable Recovery limits: 65% TO 135%  
 Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY  
 (425) 957-9872, fax (425) 957-9904

ESN Job Number: S70103-1  
 Client: Stemen Environmental  
 Client Job Name: Phoenix Inn  
 Client Job Number:

Analytical Results

PAH(8270), ug/L	MTH BLK	LCS	PMW-8	MS	MSD	RPD	
Matrix	Water	Water	Water	Water	Water	Water	
Date extracted	Reporting	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07	
Date analyzed	Limits	01/05/07	01/05/07	01/05/07	01/05/07	01/05/07	
Acenaphthene	0.2	nd	86%	nd	84%	80%	5%
Acenaphthylene	0.2	nd		nd			
Anthracene	0.2	nd		nd			
Benzo(a)anthracene*	0.2	nd		nd			
Benzo(a)pyrene*	0.2	nd		nd			
Benzo(b)fluoranthene*	0.2	nd		nd			
Benzo(ghi)perylene	0.2	nd		nd			
Benzo(k)fluoranthene*	0.2	nd		nd			
Chrysene*	0.2	nd		nd			
Dibenzo(a,h)anthracene*	0.2	nd		nd			
Fluorene	0.2	nd		nd			
Fluoranthene	0.2	nd	81%	nd			
Indeno(1,2,3-cd)pyrene*	0.2	nd		nd			
Naphthalene	0.2	nd		nd			
1-Methylnaphthalene	0.2	nd		2.0			
2-Methylnaphthalene	0.2	nd		nd			
Phenanthrene	0.2	nd		nd			
Pyrene	0.2	nd		nd	87%	80%	8%

Total Carcinogens nd

Surrogate recoveries:

2-Fluorobiphenyl	110%	123%	95%	115%	108%
p-Terphenyl-d14	52%	61%	54%	106%	50%

Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte  
 nd - not detected at listed reporting limits  
 na - not analyzed  
 C - coelution with sample peaks  
 M - matrix interference  
 J - estimated value  
 Results reported on dry-weight basis  
 Acceptable Recovery limits: 50% TO 150%  
 Acceptable RPD limit: 35%



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com


01/11/2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501  
Attn: Julie Woods

Project: Stemen/Phoenix Inn  
Client ID: PMW-8  
Sample Matrix: Water  
Date Sampled: 12/29/2006  
Date Received: 01/03/2007  
Spectra Project: 2007010039  
Spectra Number: 1

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>
Lead by GFAA	< 1	µg/L	EPA 239.2

SPECTRA LABORATORIES

  
Steve Hibbs, Laboratory Manager

a6/sej

Page 1 of 1



# SPECTRA Laboratories

2221 Ross Way • Tacoma, WA 98421 • (253) 272-4850 • Fax (253) 572-9838 • www.spectra-lab.com

January 12, 2007

ESN Northwest  
1210 Eastside St. S.E.  
Suite 200  
Olympia, WA 98501

Method: 239.2  
Spectra Project: 2007010039  
Applies to Spectra #'s 1  
Sample Matrix: Water

## QUALITY CONTROL RESULTS

### METHOD BLANK

Date Prepared: 1/11/2007

Date Analyzed: 1/11/2007

Units: ug/L

Lead <1

### MS/MSD

Sample Spiked: 2007010096-1

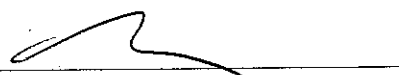
Date Prepared: 1/11/2007

Units: ug/L

Date Analyzed: 1/11/2007

<u>Compound</u>	<u>Sample Result</u>	<u>Spike Amount Added</u>	<u>MS</u>		<u>MSD</u>		<u>RPD</u>
			<u>Result</u>	<u>% Recovery</u>	<u>Result</u>	<u>% Recovery</u>	
Lead	0.000	50.000	44.808	89.6	45.140	90.3	1

SPECTRA LABORATORIES



Steve Hibbs, Laboratory Manager



