

# STEMEN ENVIRONMENTAL, INC.

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

March 26, 2006

Mr. Steve Johnson  
VIP'S Hotels  
29755 SW Boones Ferry Road  
Wilsonville, Oregon 97070-7202

Dear Mr. Johnson:

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 recent investigations of the soils and/or groundwaters present on the subject property and the selected areas immediately surrounding the subject property. The initial on-site investigations included the advancement of eleven (11) soil borings using a Direct Push Sampling System supplied and operated by Licensed Geologists from Environmental Services Network Northwest Inc., Olympia, Washington. Discreet soil and/or groundwater samples were obtained from these borings and selected samples were immediately submitted for appropriate laboratory analyses.

To facilitate further characterization of the groundwaters associated with the site, monitoring wells were installed at selected locations on the subject property and the adjacent public "right of ways".

Additionally, four (4) monitoring wells that were installed as part of previous remedial investigations associated with the subject property and/or neighboring properties, were accessed for groundwater sampling and elevation measurement purposes.

Groundwater characterization samples were obtained from selected monitoring wells and the samples were submitted for appropriate laboratory analyses.

Groundwater elevation data was obtained from the monitoring wells on numerous occasions to determine the groundwater gradients on the subject property and neighboring areas, and to assess any potential tidal influences on the flow of groundwater across the subject

property. All groundwater elevation data was submitted to Ms. Leslie Conner, a Licensed Hydrogeologist, for appropriate interpretation.

A detailed description of the above listed investigations/studies and the documented results of these investigations/studies are presented in the following reports.

## **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 present in the fill materials on the subject property at reported depths of 4 to 7 feet below ground surface (b.g.s.).

### **2.3 Previous Environmental Assessments**

Environmental assessments of the subject site were previously performed by Enviro, Inc. (Enviro), ATEC Associates (ATEC), Shannon & Wilson, Environmental Project Management, Inc. (EPMI), and GeoDesign Inc.

In summary, the above listed reports document the following information:

1. The historical presence of underground and aboveground fuel storage tanks on the subject property and neighboring properties.

2. The excavation and removal and/or closure of underground fuel storage tanks at selected locations on the subject property.

3. The sampling of the soils and groundwaters on the subject property on multiple occasions by various Consulting Firms.

4. The confirmed presence of gasoline range T.P.H., diesel fuel range T.P.H., and B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels in the soils and groundwaters beneath selected locations on the subject property. The reports indicate that the on-site petroleum contaminated soils and groundwaters are the result of releases from on-site aboveground and underground fuel storage tanks and/or off-site sources.

5. The installation of groundwater monitoring wells on the subject property and the neighboring public "right of ways".

6. The monitoring and contouring of the groundwaters on the subject property, neighboring properties and/or in the neighboring public "right of ways". The results of the groundwater monitoring and contouring events indicate that the inferred direction of groundwater flow across the subject property and neighboring properties is primarily to the northeast.

7. The presence of gasoline range T.P.H., diesel fuel range T.P.H., and/or B.T.E.X.'s in soils and groundwaters at off-site and up-gradient locations.

8. Recommendations for the in-situ bioremediation of the petroleum contaminated soils and groundwaters on the subject property.

9. The installation of enzyme injection pipes and vapor recovery piping at selected locations on the southern portion of the subject property. The lateral piping that was installed still

exists and can be used in conjunction with the vertical injection/monitoring wells that have been installed on the subject property recently.

### 3.0 INVESTIGATIVE SOIL AND GROUNDWATER SAMPLING

The purpose of this on-site investigation of the subsurface soils and waters beneath the subject property was to assess and characterize the current environmental integrity of the subject property.

On January 12, and 20, 2006 I obtained seventeen (17) discreet soil samples and nine (9) discreet groundwater samples from eleven (11) separate selected sampling locations on the subject property using a Direct Push Sampling System supplied and operated by a Licensed Geologist from Environmental Services Network Northwest Inc. of Olympia, Washington.

Investigative soil and groundwater sampling locations were based on information obtained from historical site records/reports, and on this consultant's on-site observations.

All investigative soil boring locations are depicted on the Soil Bore Location Map.

#### SAMPLING LOCATION S-1

Sampling location S-1 was located near the northwest corner of the subject property. Available information indicates that an underground fuel storage tank was removed from this immediate area in recent years.

The soil boring was extended to an approximate depth of 12 feet b.g.s.

Soils removed from this soil boring possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-1 4/8 was obtained from black marine sands intermixed with seashell fragments present at an approximate depth of 8 feet b.g.s.

Groundwater sample S-1-W was obtained from subsurface waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S-1-4/8 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 (Benzene, Toluene, Ethylbenzene, and Xylenes).

Laboratory analyses results for water sample S-1-W 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.

## SAMPLING LOCATION S-2

Sampling location S-2 was located approximately 40 feet east of investigative sampling location S-1. This sampling location is situated near the central portion of the northern perimeter of the property.

The soil boring was extended to an approximate depth of 12 feet b.g.s.

Soils removed from this soil boring possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-2 4/8 was obtained from black marine sands present at an approximate depth of 8 feet b.g.s.

Water sample S-2-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S-2 4/8 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.

Laboratory analyses results for water sample S-2-W 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.

## SAMPLING LOCATION S-3

Sampling location S-3 was located approximately 50 feet south of sampling location S-1. This sampling location was located in the immediate area where a second on-site underground fuel storage tank was reportedly removed in previous years.

The soil boring was extended to an approximate depth of 12 feet b.g.s., at this sampling location.

Soils removed from this soil boring possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-3 4/8 was obtained from black marine sands present at an approximate depth of 8 feet b.g.s.

Water sample S-3-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S-3 4/8 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.

Laboratory analyses results for water sample S-3-W 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.

#### SAMPLING LOCATION S-4

Sampling location S-4 was located approximately 80 feet south of sampling location S-3. This sampling location was located directly south of an area where a second on-site underground fuel storage tank was reportedly removed in previous years.

The soil boring was extended to an approximate depth of 12 feet b.g.s.

Soils removed from this soil boring possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-4 4/8 was obtained from black marine sands present at an approximate depth of 8 feet b.g.s. and soil sample S-4 8/12 was obtained from dark colored marine silts present at a depth of 11 feet b.g.s.

Water sample S-4-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil samples S-4 4/8 and S-4 8/12 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.

Laboratory analyses results for water sample S-4-W 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.

#### SAMPLING LOCATION S-5

Sampling location S-5 was located near the southwest corner of the subject property.

The soil boring was extended to an approximate depth of 12 feet b.g.s.

Soils removed from this soil boring, at depths less than 9 feet b.g.s., possessed noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products (diesel fuel).

Soils present, at depths greater than 9 feet b.g.s., at this soil boring location possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products (diesel fuel).

Soil sample S-5 4/8 was obtained from dark colored marine silts present at a depth of 8 feet b.g.s., and soil sample S-5 8/12 was obtained from dark colored marine silts present at a depth of 11 feet b.g.s.

Water sample S-5-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S-5 4/8 confirmed the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels in the shallow subsurface soils at this sampling location.

Laboratory analyses results for investigative soil sample S-5 4/8 indicated no detectable presence of gasoline 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 investigative soil sample S-5 8/12 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.

Laboratory analyses results for water sample S-5-W 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.

#### SAMPLING LOCATION S-6

Sampling location S-6 was located along the central portion of the southern perimeter of the subject property. This sampling location is located in the center of the southern access driveway.

The soil boring was extended to an approximate depth of 12 feet b.g.s

Soils removed from this soil boring exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-6 4/8 was obtained from gray colored marine sands present at an approximate depth of 8 feet b.g.s., and soil sample S-6 8/12 was obtained from dark colored marine silts present at an approximate depth of 11 feet b.g.s.

Water sample S-6-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil samples S-6 4/8 confirmed the presence of gasoline range T.P.H., Ethylbenzene, and Benzene at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for investigative soil sample S-6 8/12 confirmed the presence of gasoline range T.P.H., diesel fuel range T.P.H., and B.T.E.X.s at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for water sample S-6-W confirmed the presence of gasoline range T.P.H., diesel fuel range T.P.H., Ethylbenzene, and Benzene at levels that exceed Ecology's Method "A" Clean Up Levels.

## SAMPLING LOCATION S-7

Sampling location S-7 was located 40 feet north of sampling location S-6

The soil boring was extended to an approximate depth of 12 feet b.g.s

Soils removed from this soil boring exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-7 4/8 was obtained from gray colored marine sands present at an approximate depth of 8 feet b.g.s.

Laboratory analyses results for investigative soil sample S- 7 4/8 confirmed the presence of gasoline range T.P.H., diesel fuel range T.P.H., and B.T.E.X.s at levels that exceed Ecology's Method "A" Clean Up Levels.

## SAMPLING LOCATION S-8

Sampling location S-8 was located 40 feet north of sampling location S-7

The soil boring was extended to an approximate depth of 12 feet b.g.s

Soils removed from this soil boring at depths less than 9 feet b.g.s. exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soils removed from this soil boring at depths greater than 9 feet b.g.s. exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-8 4/8 was obtained from gray colored marine sands present at an approximate depth of 8 feet b.g.s., and soil sample S-8 8/12 was obtained from marine silts present at an approximate depth of 11 feet b.g.s.

Water sample S-8-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S- 8 4/8 confirmed the presence of gasoline range T.P.H., and Benzene at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for investigative soil sample S-8 8/12 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.

Laboratory analyses results for investigative soil sample S-8-W indicated the detectable presence of gasoline range T.P.H., and B.T.E.X.'s at levels that do not exceed Ecology's Method "A" Clean Up Levels.

## SAMPLING LOCATION S-9

Sampling location S-9 is located approximately 55 feet north of sampling location S-8.

The soil boring was extended to an approximate depth of 12 feet b.g.s

Soils removed from this soil boring exhibited no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-9 4/8 was obtained from gray colored marine sands present at an approximate depth of 8 feet b.g.s.

Water sample S-9-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for investigative soil sample S-9 4/8 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.

Laboratory analyses results for water sample S-9-W 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.

## SAMPLING LOCATION S-10

Sampling location S-10 is located 30 feet northwest of sampling location S-6

The soil boring was extended to an approximate depth of 12 feet b.g.s

Soils removed from this soil boring at depths less than 9 feet b.g.s. exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soils removed from this soil boring at depths greater than 9 feet b.g.s. exhibited noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products.

Soil sample S-10 4/8 was obtained from gray colored marine sands present at an approximate depth of 8 feet b.g.s.

Water sample S-10-W was obtained from waters present at an approximate depth of 5 feet b.g.s.

Laboratory analyses results for soil sample S-10 4/8 confirmed the presence of gasoline range T.P.H., diesel fuel range T.P.H., and Benzene at levels that exceed Ecology's Method "A" Clean Up Levels.

Laboratory analyses results for investigative water sample S-10-W indicated the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels.

## SAMPLING LOCATION S-11

Sampling location S-11 is located approximately 25 feet northeast of sampling location S-4. This sampling location is in close proximity to the former burial location of an underground heating oil storage tank.

The soil boring was extended to an approximate depth of 12 feet b.g.s.

Soils removed from this soil boring, at depths less than 9 feet b.g.s., possessed noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products (diesel fuel).

Soils present, at depths greater than 9 feet b.g.s., at this soil boring location possessed no noticeable signs (staining/odor/sheen) of being adversely impacted by petroleum products (diesel fuel).

Soil sample S-11 4/8 was obtained from dark colored marine silts present at a depth of 8 feet b.g.s., and soil sample S-11 8/12 was obtained from dark colored marine silts present at a depth of 11 feet b.g.s.

Laboratory analyses results for investigative soil sample S-11 8/12 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.

Laboratory analyses results for investigative soil sample S-11 4/8 confirmed the presence of diesel fuel range T.P.H. at levels that exceed Ecology's Method "A" Clean Up Levels in the shallow subsurface soils at this sampling location.

## **4.0 MONITORING WELLS**

### **4.1 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.

All monitoring wells installed in the public “right of ways” were installed under permits issued by the City of Olympia – Department of Community Development. A representative of the City of Olympia approved the monitoring well installation locations.

#### **4.2 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.

### **5.0 GROUNDWATER MONITORING**

#### **5.1 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.

#### **5.2 Groundwater Sampling**

On January 21, 2006, I measured groundwater elevations and obtained samples of the waters present in monitoring wells MW-10, 6-MW, PMW-1 PMW-2, PMW-3, and MW-1. Due to the presence of an abandoned vehicle being parked over monitoring well MW-2, groundwater elevation measurements and water sampling was performed on January 30, 2006 at approximately the same time of day.

Additionally, on March 16, 2006, a water sample was obtained from monitoring well PMW-4 and was submitted for appropriate laboratory analyses.

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-3, 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.

Laboratory analyses results for water sample PMW-2 confirmed the presence of gasoline range T.P.H., diesel fuel range T.P.H. and Benzene at levels that exceed Ecology's Method "A" Clean Up Levels.

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 discussed in the accompanying Groundwater Gradients Report presented by Ms. Leslie Conner of KTA Associates Inc.

Groundwater elevations and laboratory analyses results are summarized in Table 3.

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

## **6.0 SOIL AND GROUNDWATER SAMPLING PROTOCOLS AND LABORATORY ANALYSES**

### **6.1 Soil Sampling Protocols**

All discreet soil samples were obtained using a "Direct Push Sampling System" provided and operated by Licensed Geologists from Environmental Services Network Northwest, Olympia, Washington. Continuous soil corings were extended to depths of approximately 12 feet below ground surface (b.g.s.) or less. Continuous soil coring/samples (split spoon samplers/liners) were laid out in order by depth on the surface to facilitate field screening and observation of the soils obtained from various depths.

The soil samples were immediately removed from the liner and placed in recommended sample jars using a stainless steel sampling spoon.

EPA Method 5035 sampling protocols were practiced when sampling soils to be analyzed for Volatile Organic Compounds.

### **6.2 Borehole Groundwater Sampling Protocols**

All discreet groundwater samples were obtained using a variable speed peristaltic pump set at the lowest flow level and the "Direct Push Sampling System". The system's sampling tube was purged of all collected waters and then allowed to recharge prior to the collection of these

water samples. The sampled waters were transferred directly into laboratory supplied containers for temporary storage.

### **6.3 Monitoring Well - 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 disposable PVC bailer. A new PVC bailer was used for each well purging event.

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

The water level in the monitoring wells was stabilized to near original levels, then representative groundwater samples were obtained using a variable speed peristaltic operating at the lowest flow setting. The sampled waters were transferred directly into laboratory supplied containers for temporary storage.

### **6.4 Quality Controls and Assurances**

All sampling tools/devices were properly cleaned between individual samples to prevent cross sample contamination. All soil and/or 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 soil and/or 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**

### **8.1 Consultant's Comments:**

The results of this on-site investigation confirm the presence of gasoline range T.P.H., diesel fuel range T.P.H., and B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels, in the subsurface soils and groundwaters beneath selected portions of the subject property. The presence of the petroleum contaminated soils and/or groundwaters appears to be limited to the central, south central, and southwestern portions of the subject property. These findings are consistent with the reported findings of remedial investigations performed on the subject property in previous years.

The results of this remedial investigations indicate that the presence of the petroleum contaminated soils and groundwaters, that were adversely impacted by releases from on-site sources, are limited to areas within the boundaries of the subject property and are not migrating off-site.

The inferred direction of groundwater flow across the subject property is primarily to the east/northeast.

The direction of groundwater flow across the subject property is discussed in the accompanying Groundwater Gradients Report issued Ms. Leslie Conner of KTA Associates.

A confirmed presence of gasoline range T.P.H. and B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels, in the subsurface soils and groundwaters beneath selected portions of the subject property has been properly reported to Ms. Carol Johnston of Ecology's Toxics Clean Up Program-Southwest Regional Office.

The site has been entered into Ecology's Voluntary Clean Up Program for the purposes of eventually receiving a notice of No Further Action Required for the soils and groundwaters on the site.

### **8.2 Consultants Recommendations:**

1. The in-situ treatment of the petroleum products impacted soils and groundwaters on the subject property using enhanced bioremediation techniques. The introduction of microbes and oxygen releasing compounds to the adversely impacted medias via the sixteen (16) on-site monitoring/injection wells that are distributed throughout the adversely impacted portions of the subject property will accelerate the degradation of petroleum range contaminants.

Additionally, the horizontal air injection piping that was installed in previous years will provide a means to further oxygenate the adversely impacted medias present on the selected portions of the site.

2. The quarterly monitoring of groundwaters using eight (8) of the monitoring wells located at selected locations on the subject property and the neighboring public “right of ways”. The selection of the specific wells to be monitored will be determined by Ms. Leslie Conner, a Licensed Hydrogeologist.

3. The periodic sampling of the groundwaters via the on-site monitoring/injection wells to monitor the progress of the in-situ bioremediation process.

### **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  
Ecology-Registered Site Assessment Supervisor  
ASTM Certified  
IFCI #0874201-U2

cc: Department of Ecology- Toxics Clean Up Program  
File

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.

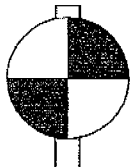
PHOENIX INN

CAPITOL WAY

THURSTON AVE.

LEGEND

-  FOUND CASSED MONUMENT
-  MONITOR WELL



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

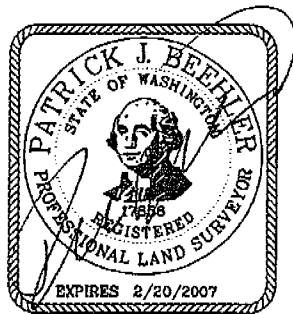
FOUND CASSED MONUMENT, 6" DIA.  
CONCRETE MONUMENT WITH LEAD AND  
SCREW AT THE INTERSECTION OF  
COLUMBIA ST. AND THURSTON AVE.  
BENCH MARK NO. 180

SCALE: 1"=80 FEET



BASIS OF BEARING:

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



3-1A-2006

Office: OLYMPIA | System: WHP-OLY-507K091 | 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

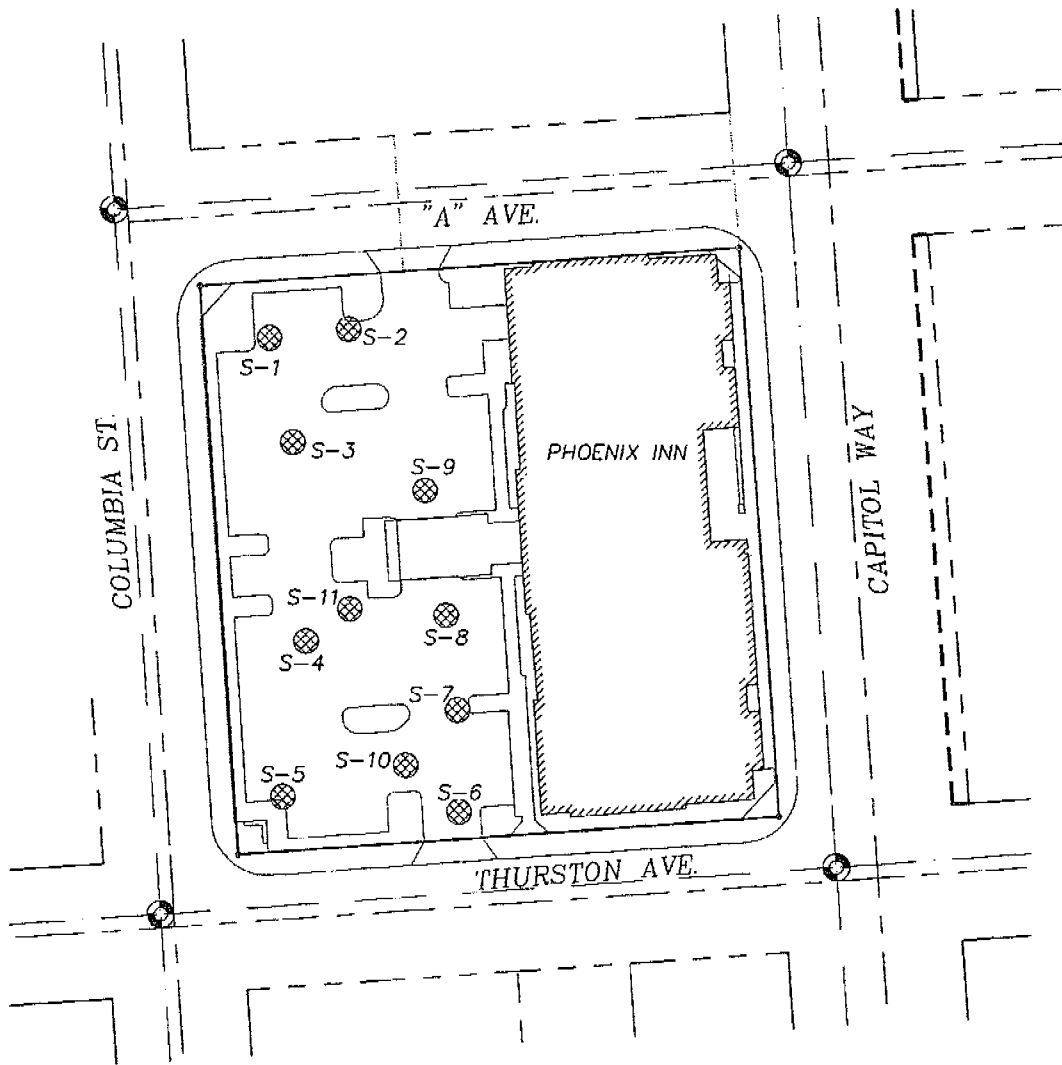
DATE	BY	REV#	REVISION	CK'D	APPR
3/14/06	JHL	1	ADDITIONAL WELLS		





724 Columbia Street NW  
Suite 140  
Olympia, Washington 98501  
(360) 754-5975  
(800) 754-1158 Fax  
whpacific.com

STEMEN ENVIRONMENTAL  
MONITOR WELL LOCATION/ELEVATIONS

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

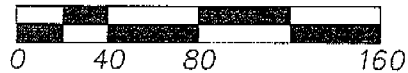


**LEGEND**

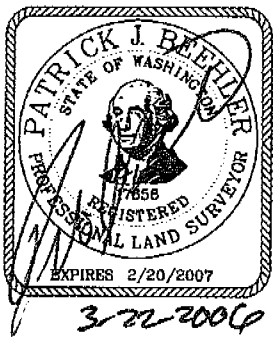
-  FOUND CASED MONUMENT
-  SOIL BORE



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



Office: OLYMPIA / System: IHP-CLY-5418051 / User: JAMUNRO / Time: 03/22/2006 15:36:16

DESIGNED BY:	JMM	CHECKED BY:	PJB	
DRAWN BY:	JMM	APPROVED BY:	PJB	
LAST EDIT:		PLOT DATE:	03/22/06	
DATE	BY	REV#	REVISION	CK'D/APP'R

**W&H PACIFIC**  
 724 Columbia Street NW  
 Suite 140  
 Olympia, Washington 98504  
 (360) 754-3375  
 (360) 754-1105 Fax  
 whpacific.com

<b>STEMEN ENVIRONMENTAL SOIL BORE LOCATION</b>			
OLYMPIA	WASHINGTON		
SCALE: 1"=80'	PROJECT NO. 034507	DRAWING FILE NAME: 34507-SURV-SB01	1 SHEET 1



A Professional Environmental Service Corporation

KTA Associates, Inc.  
800 5<sup>th</sup> Avenue  
Suite 4100  
Seattle, WA 98104  
206-447-1450  
www.ktainc.net

March 22, 2006

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

**RE: Groundwater Gradients  
Phoenix Inn Property  
415 Capital 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 is currently contracted to the property owner, Mr. Steve Johnson, to evaluate site environmental conditions and to address residual soil and groundwater contamination in anticipation of a property sales transaction. Stemen Environmental has installed monitoring wells on the property and hired KTA Associates to provide interpretation of groundwater elevation data from those wells.

### **Site**

The Phoenix Inn property comprises the entire block that is defined by Capital Way North on the east side, Columbia Street NW on the west, Thurston Avenue to the south, and "A" Avenue on the north side. The Phoenix Inn hotel building lies on the eastern portion of the property, with its main entrance off the parking lot that occupies the western portion of the property.

The property is located in an area that formerly was a marine intertidal zone, until filling for commercial development occurred in the late 1800s/early 1900s. The source of the fill material for this area is not known for certain. Boring logs from wells installed at the property in 1994 indicate subsoils to include poorly sorted medium to coarse sand with abundant shell fragments from ground surface to a depth of 15 to 16 ft. Therefore, the fill appears to be, at least in part, dredged sediments from Budd Inlet, the west arm of which lies less than 300 ft from the western edge of the property.

### **Groundwater**

Shallow groundwater at the property occurs in the fill material, at depths recorded from 4 to 7 ft below ground surface (bgs). Below the fill, poorly sorted gravelly sand was encountered in well borings from

the southeast quadrant of the property, whereas sandy pebbly silt was encountered in a well boring in the north central portion of the property.

Water level data from February 1994 indicated that shallow groundwater flowed "from the west and south toward the northeast and that a very steep groundwater gradient exists at the southwestern end" of the property (Enviros 1994). A short tidal evaluation (less than 4 hours) in February 1994 resulted in the conclusion that tidal variation in Budd Inlet had a negligible influence on water levels at the site. A review of tides in Budd Inlet during the hours of that evaluation indicate that the tidal evaluation in 1994 was conducted on a rising tide, from approximately 1.5 hours after a low tide of 7.7 ft to the following high tide of 13.7 ft (a tidal range of 6 feet).

To support the Stemen Environmental property evaluation, advantage was taken of 22 wells available on and just off the property, and a significant tidal range (15.5 ft) during the daylight hours of March 3, 2006. On March 3, water level measurements were obtained by Stemen Environmental around 8:30 a.m. and 3:30 pm, which corresponded to approximately 1.5 hours after the day's highest tide of 16.0 ft and the day's lowest tide of 0.5 ft, respectively. The water level measurements were converted to elevations (Table 1) and the elevations were contoured to provide an indication of groundwater flow directions. Figure 1 illustrates the groundwater elevations and inferred groundwater contours following the morning high tide, and Figure 2 illustrates these following the afternoon low tide.

As seen on Figure 1, groundwater flow interpretations (groundwater flows perpendicular to groundwater elevation contours) of the March 2006 data agree closely with the 1994 Enviro's interpretation: groundwater flows to the northeast across most of the property, with an anomaly in the southwest corner that appears to direct groundwater more easterly and possibly, southerly. Enviro's attributed the anomaly in the southwest corner to development filling and regrading; it also is possible that the anomaly could result from preferential pathways such as utility pipe bedding in the fill.

As seen on Figure 2, tidal influence at the site is not negligible over the tidal range captured in the March 3 measurements. The tidal influence does not reverse the groundwater flow direction at the property, but it does influence groundwater elevations in the southwest corner of the property sufficiently to reduce the anomaly in that area. Under the influence of a low tide, groundwater flow in the southwest portion of the property appears to flow easterly, with a negligible southerly component.

The southerly flow component reflected in the March 3 high tide data was evaluated further due to its implications with respect to groundwater contamination that remains in the south central portion of the property. For this, a limited number of additional water level measurements were collected on March 17, 2006 on a tidal phase that, as closely as possible during daylight hours, matched the March 3 post-high-tide data (the March 17 data were collected 1.5 hours after the day's high tide of 14.2 ft). Those measurements, converted to groundwater elevations and plotted on Figure 3, indicate no southerly flow component. This is interpreted to indicate that the groundwater gradient anomaly in the southwest corner of the site that is induced by extreme high tides is only transient in nature, and because it apparently does not occur during the majority of high tides (the mean tide in Budd Inlet is 8.5 ft and Mean High High Water in Budd Inlet is 14.6 ft), it would not result in appreciable, if any, flow to the south along the property's southern boundary.

Also as seen on Figures 1 and 2, the March 3 water level data included several measurements that are not consistent with the surrounding water levels, and because of the magnitude of the differences, were not used in contouring. These inconsistent measurements occurred at MW-2 in both data sets, and at MW-10 in the afternoon data set. The consistency of the MW-2 variance suggests a well-related issue (e.g., different screened interval) and was not investigated further for this evaluation (the well log for MW-2 was not available for review). The inconsistency in the measurement at MW-10 was theorized to be a data recording error, and was further evaluated using the additional water level data collected on March 17. The March 17 data support the theory that the anomalous value from the March 3 low tide data set was a transcription error.

**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. WE MAKE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES AS TO MERCHANTABILITY OR FITNESS OF THE SITE FOR A PARTICULAR PURPOSE.

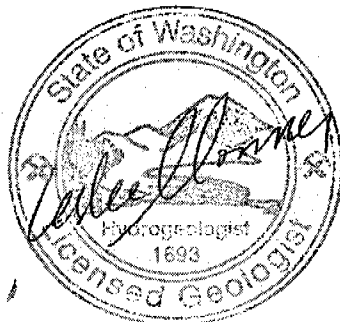
Sincerely,  
**KTA Associates, Inc.**



Leslee Conner  
Senior Hydrogeologist

Attachments:

- 1 Table
- 3 Figures



Leslee L. Conner

Table 1  
Phoenix Inn Monitoring Wells

Date	Time	MW-1			MW-2			MW-6			MW-10			PMW-1		
		Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)
		10.52			10.69			10.76			10.73			11.37		
3-Mar-06	8:30 AM		5.38	5.14		4.34	6.35		5.4	5.36		5.35	5.38		6.34	5.03
3-Mar-06	3:30 PM		5.66	4.86		4.45	6.24		5.4	5.36		3.9	6.83		6.45	4.92
17-Mar-06	8:15 AM		---	---		---	---		5.3	5.46		5.32	5.41		6.3	5.07

Date	Time	PMW-2			PMW-3			PMW-4			PMW-5			PMW-6		
		Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)
		11.41			11.23			10.56			11.34			11.46		
3-Mar-06	8:30 AM		6	5.41		5.71	5.52		5.18	5.38		5.97	5.37		5.94	5.52
3-Mar-06	3:30 PM		6.11	5.3		5.77	5.46		5.28	5.28		5.98	5.36		6.2	5.26
17-Mar-06	8:15 AM		6.08	5.33		5.69	5.54		5.18	5.38		---	---		---	---

Date	Time	PMW-7			PMW-8			PMW-9			PMW-10			PMW-11		
		Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)
		10.93			11.6			11.56			12.32			12.33		
3-Mar-06	8:30 AM		5.45	5.48		6.14	5.46		6.11	5.45		6.99	5.33		6.93	5.4
3-Mar-06	3:30 PM		5.58	5.35		6.24	5.36		6.2	5.36		7.02	5.3		6.97	5.36
17-Mar-06	8:15 AM		5.57	5.36		---	---		6.19	5.37		7.02	5.3		---	---

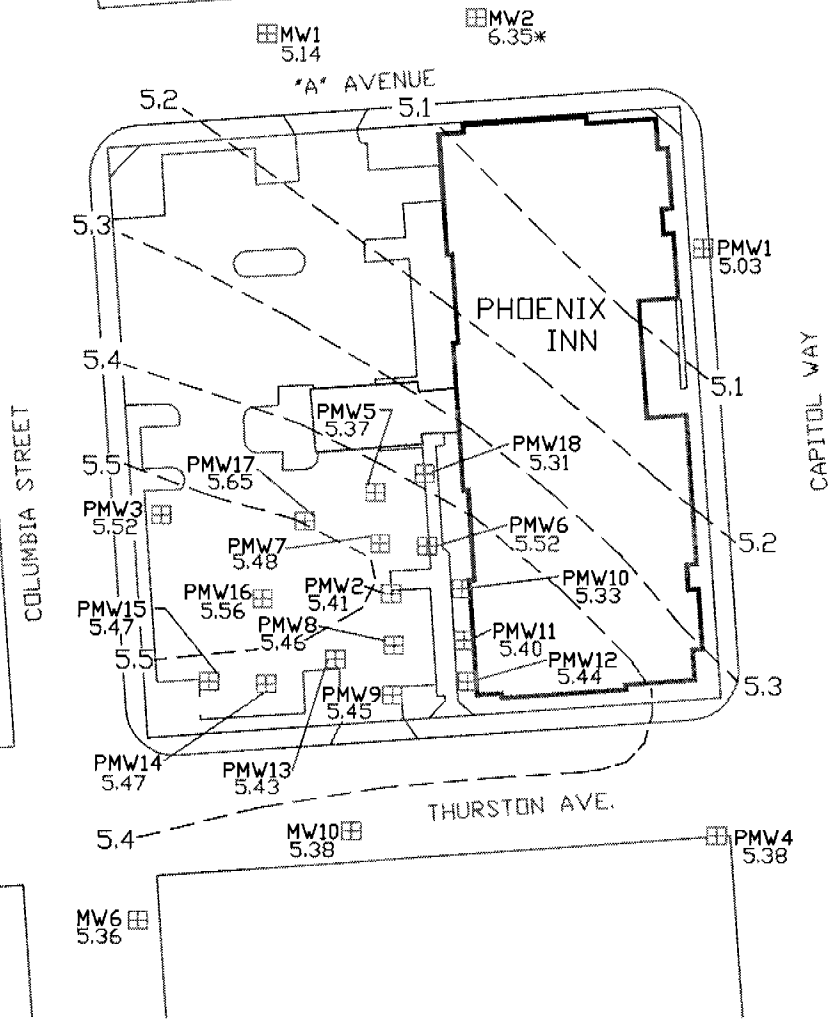
**Notes:**

- 3-Mar-06 8:30 AM Measurements taken following daily High High tide of 16.0 ft at 7:38 am.
- 3-Mar-06 3:30 PM Measurements taken following daily Low Low tide of 0.5 ft at 2:27 pm.
- 17-Mar-06 8:15 AM Measurements taken following daily High High tide of 14.2 ft at 6:40 am.

Table 1  
Phoenix Inn Monitoring Wells


Date	Time	PMW-12			PMW-13			PMW-14			PMW-15			PMW-16		
		Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)
		12.35			11.13			10.8			11.26			10.16		
3-Mar-06	8:30 AM		6.91	4.02		5.7	5.9		5.33	6.23		5.79	6.53		4.6	7.73
3-Mar-06	3:30 PM		7.05	3.88		5.75	5.85		5.39	6.17		5.79	6.53		4.72	7.61
17-Mar-06	8:15 AM		7.01	3.92		---	---		5.39	6.17		5.76	6.56		4.73	7.6


Date	Time	PMW-17			PMW-18		
		Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)	Ref Elev (ft MSL)	Depth to Water (ft)	Water Level Elevation (ft MSL)
		10.28			11.8		
3-Mar-06	8:30 AM		4.63	5.65		6.49	5.31
3-Mar-06	3:30 PM		4.84	5.44		6.48	5.32
17-Mar-06	8:15 AM		4.87	5.41		---	---



\* Value not used in contouring  
 \*\* Following 7:38am high tide of 16.0 ft. in Budd Inlet

NOTE: Site plan based on information received from W&H Pacific and City of Olympia, WA

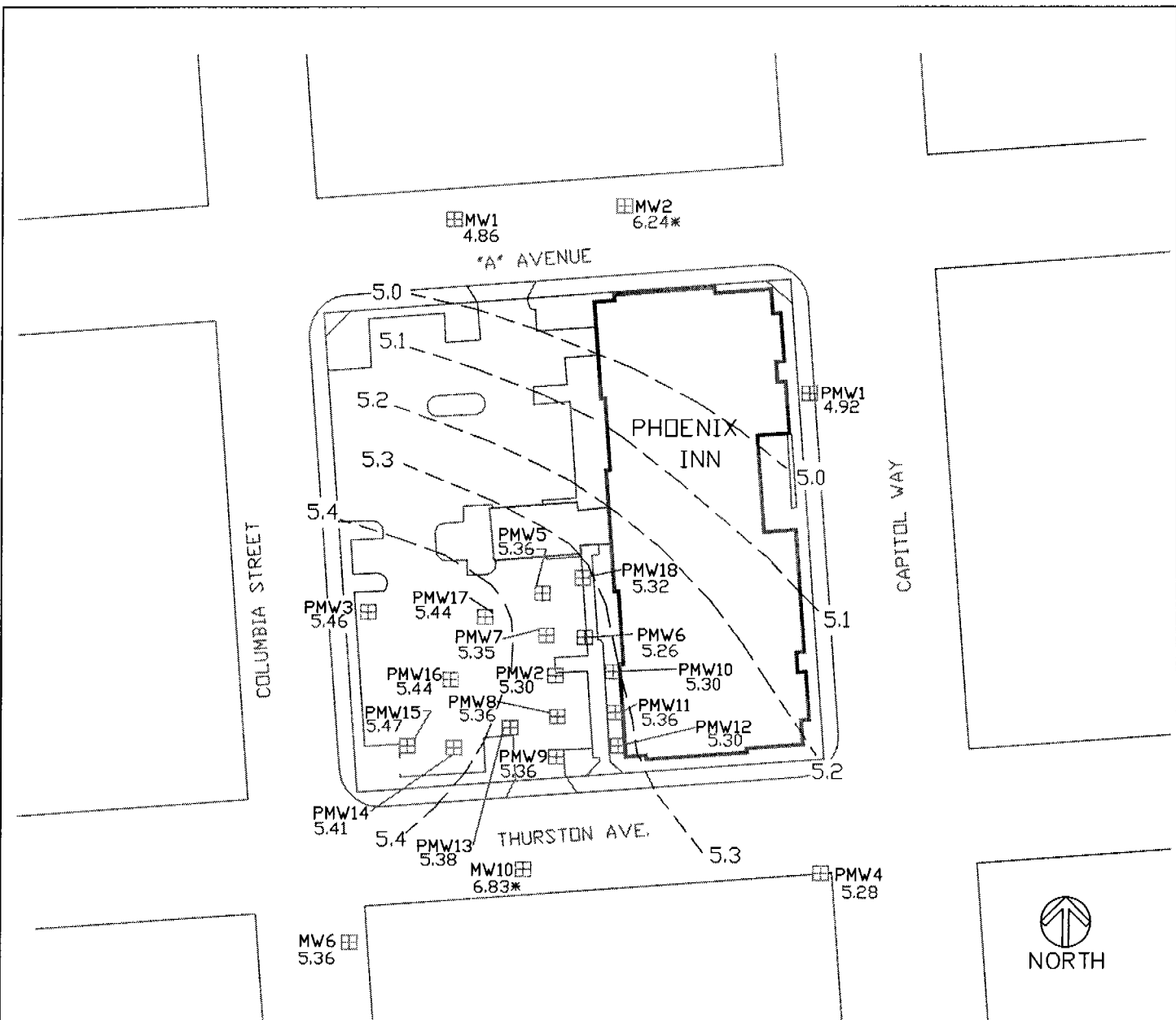
  
 VERTICAL DATUM  
 MEAN SEA LEVEL (MSL)  
 ELEV. = 10.63

LEGEND	
	MONITORING WELL



Inferred & Generalized  
 Groundwater Contours  
 Groundwater Elevations March 3, 2006 at 8:30am \*\*  
 PHOENIX INN OLYMPIA, WASHINGTON

Scale: 1"=80'-0"	Drawn by: cct
Date: 3/17/2006	FIGURE



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

LEGEND	
	MONITORING WELL

\* Value not used in contouring  
\*\* Following 2:27 pm low tide of 0.5 ft. in Budd Inlet

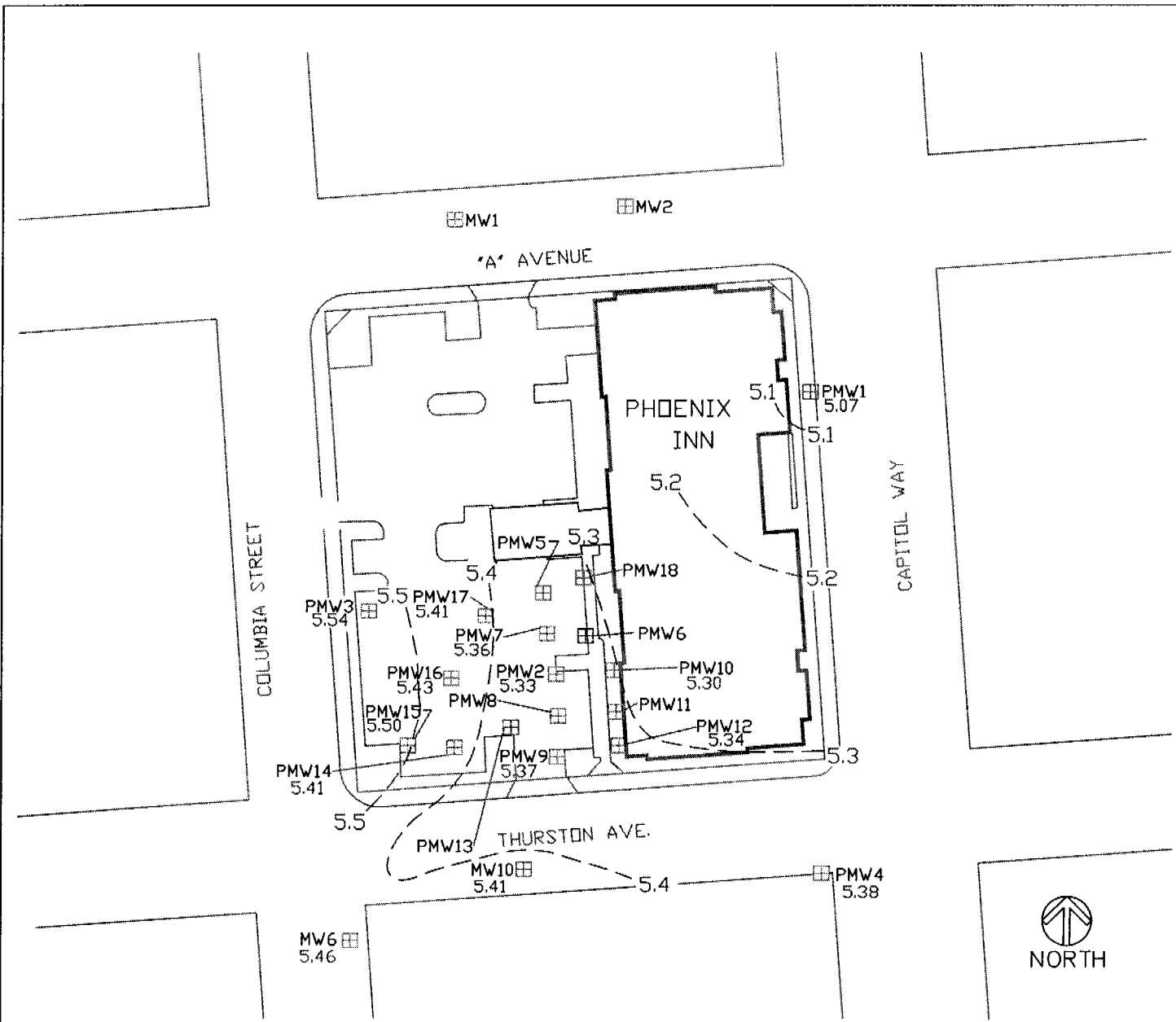
NOTE: Site plan based on information received from W&H Pacific and City of Olympia, WA



Inferred & Generalized  
Groundwater Contours  
Groundwater Elevations March 3, 2006 at 3:30pm \*\*  
PHOENIX INN OLYMPIA, WASHINGTON

Scale:  
1"=80'-0"  
Date:  
3/20/2006

Drawn by:  
cct  
FIGU



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

\* Following 6:40am high tide of 14.2 ft. in Budd Inlet

NOTE: Site plan based on information received from W&H Pacific and City of Olympia, WA

LEGEND	
	MONITORING WELL



Inferred & Generalized  
Groundwater Contours  
Groundwater Elevations March 17, 2006 at 8:15am \*  
PHOENIX INN OLYMPIA, WASHINGTON

Scale: 1"=80'-0"	Drawn by: cct
Date: 3/17/2006	FIGURE

**TABLE 1**

**SOIL LABORATORY ANALYSES CHARTS FOR SOIL BORINGS**

METHOD 8021B

**BTEX COMPOUNDS (PPM)**

**TOTAL PETROLEUM  
HYDROCARBONS (PPM)**

SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	BTEX COMPOUNDS (PPM)			ETHYL-BENZENE	TOTAL XYLENES	TOTAL PETROLEUM HYDROCARBONS (PPM)				
			BENZENE	TOLUENE	BENZENE			GASOLINE	DIESEL	OIL	MINERAL OIL	
S-1 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-2 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-3 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-4 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-5 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	5600	ND	ND
S-6 4/8	1/13/2006	8'	2.7	2.2	16	7.3	440	750	200	3500	ND	ND
S-7 4/8	1/13/2006	8'	12	17	21	35	1300	820	ND	ND	ND	ND
S-8 4/8	1/13/2006	8'	0.08	0.11	2	1.5	40	ND	ND	ND	ND	ND
S-9 4/8	1/13/2006	8'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-10 4/8	1/13/2006	8'	0.1	0.14	0.27	0.14	73	5800	ND	ND	ND	ND
S-2 8/12	1/17/2006	11'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-4 8/12	1/17/2006	11'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-5 8/12	1/17/2006	11'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-6 8/12	1/17/2006	11'	17	12	55	20	2500	2300	ND	ND	ND	ND
S-8 8/12	1/17/2006	11'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
S-11 4/8	1/20/2006	7'	ND	ND	ND	0.31	ND	9700	ND	ND	ND	ND
S-11 8/12	1/20/2006	11'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method 'A Clean Up Levels			0.03	7	6	9	30	2000	2000	4000		

**TABLE 2**

**WATER LABORATORY ANALYSES CHARTS FOR SOIL BORINGS**

**METHOD 8021B**

**BTEX COMPOUNDS (PPB)**

**TOTAL PETROLEUM  
HYDROCARBONS (PPB)**

SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH*	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL	MINERAL OIL
S-1-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-2-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-3-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-4-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-5-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-6-W	1/13/2006	5'	250	130	830	290	19000	18000	ND	ND
S-8-W	1/13/2006	5'	1.9	2.6	31	11	790	ND	ND	ND
S-9-W	1/13/2006	5'	ND	ND	ND	ND	ND	ND	ND	ND
S-10-W	1/13/2006	5'	ND	ND	ND	ND	ND	42000	ND	ND

Method "A" Clean Up Levels

5

1000

700

1000

800

500

500

500

\* Approximate groundwater sample depth measurements are based on depths below ground surface at individual sampling locations

**TABLE 3**

**WATER LABORATORY ANALYSES CHARTS FOR MONITORING WELL SAMPLES**

METHOD 8021B

BTEX COMPOUNDS (PPB)

TOTAL PETROLEUM  
HYDROCARBONS (PPB)

SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE	DIESEL	OIL	MINERAL OIL
MW-10	1/27/2006	4.99"	ND	ND	ND	ND	ND	ND	ND	ND
6MW	1/27/2006	5.00"	ND	ND	ND	ND	ND	ND	ND	ND
PMW-1	1/27/2006	6.29"	ND	ND	ND	ND	ND	ND	ND	ND
PMW-2	1/27/2006	5.84'	15	43	24	7.7	3800	3000	ND	ND
PMW-3	1/27/2006	5.33'	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	1/27/2006	4.59'	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	1/30/2006	4.01'	ND	ND	ND	ND	ND	ND	ND	ND
PMW4	3/16/2006	5.25'	ND	ND	ND	ND	ND	ND	ND	ND
Method "A" Clean Up Levels			5	1000	700	1000	800	500	500	500