Cleanup Action Report

Former Olympia Manufactured Gas Plant Property
320 Columbia Street NW
Olympia, Washington

for
Puget Sound Energy

January 4, 2013

GeoEngineers
Earth Science + Technology

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320 Columbia Street NW
Olympia, Washington

File No. 0186-774-02

January 4, 2013

Prepared for:

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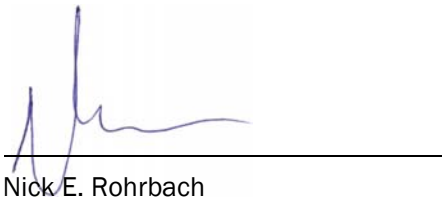

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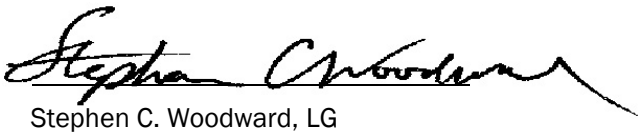

Stephen C. Woodward, LG
Principal

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1.0 INTRODUCTION

This Cleanup Action Report (CAR) has been prepared for Puget Sound Energy's (PSE's) former Olympia manufactured gas plant (MGP) property located at 320 Columbia Street NW in Olympia, Washington (Property), as shown on Figure 1. PSE performed the Property cleanup under the Washington State Department of Ecology's (Ecology's) Voluntary Cleanup Program (VCP). The objective of the cleanup was to implement a remedy on the Property that is permanent to the maximum extent practicable and obtain a property-specific "No Further Action" determination from Ecology. The cleanup action addresses concentrations of carcinogenic polycyclic aromatic hydrocarbons (cPAHs), petroleum hydrocarbons, and certain metals beneath the Property in general accordance with the revised Cleanup Action Plan (CAP) dated July 30, 2012 (GeoEngineers, 2012a) and the Construction Work Plan (Work Plan) dated September 19, 2102 (GeoEngineers, 2012b). These contaminants are collectively referred to as the constituents of concern (COCs).

2.0 BACKGROUND

The Property occupies approximately 0.33 acres at the southeast corner of the intersection of Columbia Street NW and Thurston Avenue NW in Olympia, Washington and is currently vacant. It is identified as Thurston County tax parcel number 78500200100 and is located in the southwest quarter (SW 1/4) of the northwest quarter (NW 1/4) of Section 14, Township 18 North, Range 2 West of the Public Land Survey System land grid. The Property is bounded by Thurston Avenue NE to the north, Columbia Street NW to the west, and commercial properties to the east and south. Budd Inlet is located approximately 300 feet west of the Property (Figure 1).

The Property was developed as an MGP in 1908 by the Olympia Gas and Power Company. The Olympia MGP produced gas from oil and distributed the gas through underground pipes to limited areas of Olympia for residential uses such as lighting, heating, and cooking. The Olympia MGP was a primary source of Olympia's residential gas supply between April 1908 and August 1910. By August 1910, construction of a gas pipeline between Tacoma and Olympia was completed. This pipeline carried gas produced at an MGP in Tacoma and became Olympia's primary gas source. Consequently, from 1910 until approximately 1923 or 1924, the Olympia MGP served as a backup/auxiliary plant, producing gas only as needed during temporary interruptions in the Tacoma gas supply.

Historical records indicate that all gas production at the Olympia MGP ceased by approximately 1924. The Property was used for the storage and distribution of Tacoma-produced gas from approximately 1924, or possibly as early as 1910, until the late 1940s. A 50-foot diameter, aboveground spherical gas storage tank called a "Hortonsphere" was present on the Property from at least 1934 until the late 1940s. By the early 1950s, it appears that all gas production and storage facilities were dismantled, and a new office building/warehouse had been constructed on the Property. The Property was owned by Washington Natural Gas from the early 1950s until 1974, and a private law firm (Bean & Gentry) owned the Property from 1974 until 2008. The

Property is currently owned by The Rants Group and has been vacant since October 2009, when the office building was demolished to allow environmental sampling within the building footprint.

A 1,000-gallon gasoline underground storage tank (UST) and a fuel dispenser were installed by Washington Natural Gas in 1965. Bean & Gentry removed the UST and fuel dispenser in 1990.

3.0 PREVIOUS STUDIES

Four phases of environmental investigation were conducted at the Property between 2006 and 2011. Detailed summaries of these previous investigations are presented in the Data Summary Report (GeoEngineers, 2011). The previous investigations identified cPAHs, benzene, gasoline- and lube oil-range petroleum hydrocarbons, lead, and mercury in Property soil at concentrations exceeding the MTCA Method A cleanup levels. In addition, cPAHs have been detected in shallow groundwater at concentrations exceeding the MTCA Method A cleanup level near the eastern Property boundary. These chemicals were identified as COCs in the revised CAP (GeoEngineers, 2012a).

Arsenic also was consistently detected in groundwater at concentrations exceeding the MTCA Method A cleanup level during previous studies. Multiple lines of evidence, however, indicate that the arsenic is not related to historical MGP operations. Consequently, arsenic was not identified as a COC for cleanup.

The preferred cleanup alternative for the Property, as identified in the revised CAP, was excavation of soil containing COC concentrations exceeding MTCA Method A cleanup levels, followed by disposal of the excavated soil at a permitted facility and implementation of institutional controls. This remedy was performed to address soil contamination within the Property boundaries to the maximum extent practicable.

In addition to mitigating risks associated with direct contact with contaminated soil, the selected remedy also should reduce the risk of impacts to groundwater as a result of removing most of the contaminated soil from the Property. The effects of the remedy on groundwater quality will be confirmed through post-construction monitoring.

4.0 REMEDIAL CONSTRUCTION ACTIVITIES

Remedial construction activities were conducted to remove COCs between October 8 and October 31, 2012. Remedial excavation activities were completed by Wyser Construction Company, Inc. (Wyser) of Snohomish, Washington. GeoEngineers observed and documented the remedial excavation activities for general compliance with the Work Plan.

4.1. Site Preparation

Prior to initiating remedial excavation activities, Wyser coordinated locating and marking underground utilities by contacting the public “One-call” utility locating service and a private utility locating service. Existing and temporary chain link fencing was utilized to secure the Property to

prevent public access to the Property during cleanup. Erosion control measures were implemented in accordance with the Work Plan prior to and during remedial activities at the Property.

A maple tree located on the southwest corner of the Property was removed in accordance with a City of Olympia tree removal permit prior to initiating excavation activities (Photograph 1, Appendix A). No other trees were located within the Property boundaries.

All existing on-Property groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, and MW-8) were decommissioned on September 5, 2012 in accordance with the requirements of WAC 173-160 by a Washington State licensed well driller. Decommissioning documentation is presented in Appendix B. Casings of the decommissioned wells were removed above the base of the excavation during the remedial action.

A grid system, as presented in Appendix B of the Work Plan, was established to facilitate confirmation soil sampling. The grid system was marked in the field prior to beginning excavation, and was maintained during the cleanup activities. The grid system consisted of approximately 20-foot by 20-foot grid cells.

4.2. Earthwork

Earthwork activities were completed in general accordance with the revised CAP and Work Plan. Elements of remedial excavation activities are further described below.

4.2.1. Excavation

The remedial excavation limits are depicted in Figure 2. Typical subsurface conditions encountered during excavation activities are shown on Photographs 2 and 3 (Appendix A). The limits of the completed excavation measured approximately 120 feet by 120 feet and extended to a total depth of 6 feet below ground surface (bgs) in accordance with the revised CAP and Work Plan, with two exceptions. The excavation extended to a depth of 6½ feet bgs in a portion of Cell A-4 and 7 feet bgs in a portion of Cell E-1 to remove visually stained soil. Groundwater was encountered at approximately 6 feet bgs within the remedial excavation limits.

Orange filter fabric was placed at the interface between clean backfill and the excavation sidewalls to demarcate where residual contaminated soil may remain at the Property boundaries.

4.2.1.1. REMOVAL OF SUBSURFACE STRUCTURES

Subsurface concrete foundations and piping, apparently associated with former MGP facilities, were encountered during remedial excavation activities (Figure 3 and Photographs 4 and 5). These features were demolished to a manageable size for transport and disposal at a permitted off-site disposal facility (Photograph 6).

Wood piling also was encountered during remedial excavation in the central and southern portions of the Property (Photographs 7 and 8). The wood piles did not appear to be treated based on visual observations and were removed in their entirety or cut at the base of the excavation.

4.2.1.2. EASTERN EXCAVATION SIDEWALL

Due to the presence of existing buildings supported on shallow foundations adjacent to the eastern Property line, a 3-foot offset was maintained between the eastern Property line and the top of

eastern excavation sidewalls. The eastern excavation sidewall was originally intended to be cut at an inclination of approximately 2H:1V (horizontal:vertical). During construction, GeoEngineers observed exposed soil along the east excavation sidewall and determined that the temporary cut slope could be safely steepened from 2H:1V to 1H:1V, as shown in Figure 5. This resulted in the removal of approximately 80 cubic yards of additional soil along the eastern Property line.

4.2.1.3. UTILITY POLE

A small area of soil, measuring approximately 4 foot long by 4 foot wide by 6 feet deep, was left in-place along the northern Property boundary approximately 25 feet west of the northeast corner of the Property (Figure 2). This soil was left in-place due to stability concerns associated with a utility pole.

4.2.1.4. WATER SUPPLY WELL

An apparent water supply well was encountered at the base of the remedial excavation as shown in Figure 3 and Photograph 9. The well exhibited artesian flow at the elevation it was encountered (approximately 4 to 5 feet below ground surface). The well casing was extended to the restored ground surface to facilitate subsurface efforts to abandon the well. The well will be decommissioned by a Washington State licensed well driller during future compliance groundwater monitoring well installation activities.

4.2.1.5. MAPLE TREE STUMP

A portion of the maple tree stump (southwest corner of the Property) was unable to be removed without damaging nearby City right-of-ways (ROWs) and utilities (Photograph 10). Soil beneath the stump was removed to the maximum extent practicable. Stump remnants measure approximately 8 feet long by 2 feet wide by 3 feet deep as shown on Figure 3.

4.2.2. Materials Disposal

All soil and debris (asphalt, concrete, metal pipes and wood) generated during remedial excavation were loaded into dump trucks for transport and disposal at Waste Management's Riverbend Subtitle D Landfill located in McMinnville, Oregon. A total of approximately 4,400 tons of material were removed from the Property between October 10 and October 26, 2012 and disposed in the landfill. Disposal documentation is presented in Appendix C.

4.2.3. Utility Abandonment

Abandoned utilities encountered during remedial excavation were cut, capped and abandoned at the Property boundaries to facilitate future Property development, with one exception. A 4-inch ductile iron pipe of unknown use, was cut, capped and abandoned within the sloped eastern sidewall (Figure 3), approximately three feet west of the eastern Property boundary.

4.3. Confirmation Soil Sampling

Discrete confirmation soil samples were collected at the limits of the remedial excavation in accordance with the sampling and analysis plan (SAP) provided in the Work Plan. Confirmation sampling involved collecting soil samples from the base and sidewalls of the completed remedial excavation. The confirmation soil samples were collected using a sampling grid, as shown in Figure 2. The specific sampling locations along the eastern sidewall were biased toward stained soil to characterize contamination remaining at that location.

Soil samples from all A- through C-designated grid cells (Figure 2) were submitted for analysis of all COCs because these constituents were detected at concentrations exceeding cleanup levels at several locations in the eastern portion of the Property during past studies. Based on a similar rationale, all soil samples from C- through F-designated grid cells were submitted for analysis of only cPAHs, lead and mercury. Chemical analytical results for confirmation soil samples collected from the limits of the remedial excavation are presented in Table 1.

The objective of the cleanup was to remove contaminated soil within the Property boundaries to the extent practicable, as explained in the revised CAP. Contaminated soil remaining beneath the Property after the cleanup is characterized by the confirmation soil sampling program described above. Some soil samples collected during previous studies also characterize soil outside of the excavation boundary. All soil analytical data obtained during or prior to the cleanup that identifies remaining contamination at concentrations exceeding MTCA Method A cleanup levels is posted in Figure 2. Additional details for soil analytical results from previous studies is available in the "Supplemental Site Investigation Report, Former Columbia Street Manufactured Gas Plant Property, Olympia, Washington" (GeoEngineers 2010) and the "Data Summary Report, Former Olympia Manufactured Gas Plant Site, Olympia, Washington" (GeoEngineers, 2011).

Soil sampling and field screening techniques used during the collection of confirmation soil samples are described in the Work Plan. Confirmation soil samples were analyzed by OnSite Environmental, Inc. (OnSite) of Redmond, Washington. Chemical analytical reports are included in Appendix D and GeoEngineers' data quality review is presented in Appendix E.

4.4. Property Restoration

4.4.1. Structural Backfill

The remedial excavation was backfilled to approximately match original grade using clean imported structural fill meeting WSDOT standard specification 9-03.14(3). The structural fill was placed and compacted in general accordance with the Work Plan.

GeoEngineers periodically visited the site to observe backfill placement and compaction. In-place density testing conducted by GeoEngineers indicated that fill was compacted to at least 90 percent of maximum dry density (MDD), as specified in the Work Plan.

4.4.2. Final Grade

The Work Plan indicated that the final grade should slope approximately 2 percent down toward the center of the Property. Final grade was actually constructed differently, with the high point in the center of the Property, sloping approximately 2 percent down toward the Property boundaries. In our opinion, this final grade, in combination with the surfacing material (crushed rock), will not likely result in stormwater runoff or erosion problems.

The City of Olympia (City) approved final site restoration conditions during City permit closure activities.

4.4.3. Fencing Removal

Temporary chain link fencing was removed by Wyser at the completion of restoration activities. Permanent chain link fencing that was present before the remedial action was left in-place.

5.0 CLOSURE

PSE performed the Property cleanup as an independent action under the Washington State Department of Ecology's (Ecology's) Voluntary Cleanup Program (VCP). The objective of the cleanup was to implement a remedy on the Property that is permanent to the maximum extent practicable and to obtain a property-specific "No Further Action" determination from Ecology.

It is GeoEngineers' opinion that remedial actions were completed in general accordance with the revised CAP and Work Plan, thereby satisfying the objective of the cleanup. Report limitations and guidelines for use are presented in Appendix F.

6.0 REFERENCES

GeoEngineers, Inc., 2010. "Supplemental Site Investigation Report, Former Columbia Street Manufactured Gas Plant Property, Olympia, Washington." GEI File No. 0186-774-00, January 29, 2010.

GeoEngineers, Inc., 2011. "Data Summary Report, Former Olympia Manufactured Gas Plant Site, Olympia, Washington." GEI File No. 0186-774-00, October 17, 2011.

GeoEngineers, Inc., 2012a. "Revised Cleanup Action Plan, Former Columbia Street Manufactured Gas Plant Property, Olympia, Washington." GEI File No. 0186-774-00, July 30, 2012.

GeoEngineers, Inc., 2012b. "Construction Work Plan, Former Olympia Manufactured Gas Plant Site, Olympia, Washington." GEI File No. 0186-774-02, September 19, 2012.

TABLES

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Table 1

Summary of Analytical Results for Confirmation Soil Samples

Former Olympia Manufactured Gas Plant Property
Olympia, Washington

Analyte/Groups	Units	Cleanup Level [1]	BS-A1-6 10/09/12	BS-A2-6 10/09/12	BS-A3-6 10/09/12	BS-A4-6.5 10/10/12	BS-A4-6.5 DUP* 10/10/12	BS-A5-6 10/10/12	BS-A6-6 10/10/12	BS-B1-6 10/10/12	BS-B2-6 10/10/12	BS-B3-6 10/10/12	BS-B4-6 10/10/12	BS-B5-6 10/11/12	BS-B6-6 10/11/12	BS-C1-6 10/12/12	BS-C2-6 10/12/12
TPH by NWTPH-GX/NWTPH-Dx																	
Gasoline-range hydrocarbons	mg/kg	30 [2]	6.4 U	6.8 U	**930**	7.8 U	8.1 U	7.7 U	6.8 U	8.5 U	8.4 U	**150 J**	7.8 U	6.7 U	6.1 U	7.4 U	7.9 U
Diesel-range hydrocarbons	mg/kg	2000	31 U	33 U	210 J	34 U	34 U	34 U	31 U	33 U	35 U	300 J	32 U	32 U	30 U	33 U	33 U
Lube Oil-range Hydrocarbons	mg/kg	2000	83	65 U	150	68 U	69 U	67 U	62 U	67 U	69 U	590	64 U	63 U	59 U	66 U	66 U
Metals by SW6010C/SW7471																	
Lead	mg/kg	250	90	21	9.2	6.8 U	6.8 U	6.7 U	6.2 U	6.6 U	8.1 J	16 J	9 J	6.3 U	5.9 U	6.6 U	6.6 U
Mercury	mg/kg	2	**110**	0.33 U	0.34 U	0.34 U	0.34 U	0.34 U	0.31 U	0.33 U	0.72	0.35 U	0.32 U	0.32 U	0.3 U	0.33 U	0.33 U
BTEX by SW8021B																	
Benzene	mg/kg	0.03	0.02 U	0.02 U	**3.3**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	**0.49**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
CPAHs by SW8270SIM																	
Benzo(a)anthracene	mg/kg		3	0.0087 U	0.18 U	0.057 J	0.16 J	0.009 U	0.0083 U	0.0089 U	0.0092 U	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Benzo(a)pyrene	mg/kg		**4.6**	0.0087 U	0.046 U	0.1 J	**0.28 J**	0.009 U	0.0083 U	0.0089 U	0.02	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Benzo(b)fluoranthene	mg/kg		4.5	0.0087 U	0.046 U	0.074 J	0.22 J	0.009 U	0.0083 U	0.0089 U	0.017	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Benzo(j,k)fluoranthene	mg/kg		1.3	0.0087 U	0.046 U	0.023 J	0.059 J	0.009 U	0.0083 U	0.0089 U	0.0092 U	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Chrysene	mg/kg		3.6	0.0087 U	0.18 U	0.063 J	0.14 J	0.009 U	0.0083 U	0.0089 U	0.011	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Dibenzo(a,h)anthracene	mg/kg		0.42	0.0087 U	0.046 U	0.0091 U	0.016	0.009 U	0.0083 U	0.0089 U	0.0092 U	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Indeno(1,2,3-cd)pyrene	mg/kg		3.4	0.0087 U	0.046 U	0.064 J	0.17 J	0.009 U	0.0083 U	0.0089 U	0.019	0.047 U	0.0085 U	0.0084 U	0.0079 U	0.0088 U	0.0088 U
Total cPAH TEQ (ND=0.5RL)	mg/kg	0.1	**5.898 T**	0.0066 UT	0.0421 UT	**0.1229 JT**	**0.3439 JT**	0.0068 UT	0.0063 UT	0.0067 UT	0.0251 T	0.0355 UT	0.0064 UT	0.0063 UT	0.006 UT	0.0066 UT	0.0066 UT

Analyte/Groups	Units	Cleanup Level [1]	BS-C3-6 10/12/12	BS-C4-6 10/16/12	BS-C5-6 10/16/12	BS-C6-6 10/16/12	BS-D1-6 10/17/12	BS-D2-6 10/17/12	BS-D3-6 10/17/12	BS-D4-6 10/18/12	BS-D5-6 10/18/12	BS-D6-6 10/18/12	BS-E1-7 10/24/12	BS-E2-6 10/24/12	BS-E3-6 10/24/12	BS-E4-6 10/22/12	BS-E5-6 10/22/12
TPH by NWTPH-GX/NWTPH-Dx																	
Gasoline-range hydrocarbons	mg/kg	30 [2]	7.5 U	6.7 U	7.3 U	7.6 U	--	--	--	--	--	6.9 U	--	--	--	--	--
Diesel-range hydrocarbons	mg/kg	2000	32 U	33 U	32 U	**10000**	--	--	--	--	--	30 U	--	--	--	--	--
Lube Oil-range Hydrocarbons	mg/kg	2000	65 U	65 U	64 U	830 U	--	--	--	--	--	61 U	--	--	--	--	--
Metals by SW6010C/SW7471																	
Lead	mg/kg	250	6.5 U	6.5 U	6.4 U	6.5 U	7.3 U	84	6.5 U	6.4 U	6 U	15	10 J	6.3 U	6.1 U	12	6.3 U
Mercury	mg/kg	2	0.32 U	0.33 U	0.32 U	0.33 U	0.36 U	0.31 U	0.32 U	0.32 U	0.3 U	0.3 U	0.35 U	0.32 U	0.31 U	0.29 U	0.32 U
BTEX by SW8021B																	
Benzene	mg/kg	0.03	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	0.02 U	--	--	--	--	--
CPAHs by SW8270SIM																	
Benzo(a)anthracene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	0.059	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.047	0.0085 U
Benzo(a)pyrene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	**0.19**	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	**0.11**	0.0085 U
Benzo(b)fluoranthene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	0.17	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.11	0.0085 U
Benzo(j,k)fluoranthene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	0.034	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.027	0.0085 U
Chrysene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.11	0.0097 U	0.081	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.063	0.0085 U
Dibenzo(a,h)anthracene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	0.013	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.009	0.0085 U
Indeno(1,2,3-cd)pyrene	mg/kg		0.0086 U	0.0087 U	0.0085 U	0.087 U	0.0097 U	0.18	0.0086 U	0.0067 U	0.008 U	0.0081 U	0.0094 U	0.0084 U	0.0082 U	0.097	0.0085 U
Total cPAH TEQ (ND=0.5RL)	mg/kg	0.1	0.0065 UT	0.0066 UT	0.0064 UT	0.0664 T	0.0073 UT	**0.2364 T**	0.0065 UT	0.0051 UT	0.006 UT	0.0061 UT	0.0071 UT	0.0063 UT	0.0062 UT	**0.1396 T**	0.0064 UT

Analyte/Groups	Units	Cleanup Level [1]	BS-E5-6 DUP* 10/22/12	BS-E6-6 10/22/12	BS-F1-6 10/24/12	BS-F2-6 10/24/12	BS-F3-6 10/26/12	BS-F4-6 10/22/12	BS-F5-6 10/22/12	BS-F6-6 10/22/12	SS-A1(E)-3.5 10/09/12	SS-A1(E)-4.5 10/09/12	SS-A3(E)-3.5 10/09/12	SS-A3(E)-4.5 10/09/12	SS-A4(E)-3.5 10/10/12	SS-A4(E)-4.5 10/10/12
TPH by NWTPH-GX/NWTPH-Dx																
Gasoline-range hydrocarbons	mg/kg	30 [2]	--	--	--	--	--	--	--	--	6.9 U	5.8 U	5.9 U	6 U	11 U	7.9 U
Diesel-range hydrocarbons	mg/kg	2000	--	--	--	--	--	--	--	--	340 U	30 U	250 U	28 U	1100	35 U
Lube Oil-range Hydrocarbons	mg/kg	2000	--	--	--	--	--	--	--	--	1700	59 U	1700	55 U	**5500**	69 U
Metals by SW6010C/SW7471																
Lead	mg/kg	250	6.4 U	6.4 U	6.3 U	6.4 U	6.6 U	6.5 U	5.9 U	8.4	**1400**	9.7	**570**	5.5 U	**550 J**	**1400 J**
Mercury	mg/kg	2	0.32 U	0.32 U	0.31 U	0.32 U	0.33 U	0.32 U	0.3 U	0.35 U	**24**	0.3 U	**3**	0.28 U	0.6	1
BTEX by SW8021B																
Benzene	mg/kg	0.03	--	--	--	--	--	--	--	--	0.02 U	0.02 U	0.02 U	0.02 U	**0.15**	0.02 U
CPAHs by SW8270SIM																
Benzo(a)anthracene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.0086 U	0.0079 U	0.014	3	0.084	5.2	0.024	97	0.48
Benzo(a)pyrene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.036	0.0079 U	0.035	**8.9**	**0.11**	**19**	0.053	**200**	**1.1**
Benzo(b)fluoranthene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.038	0.0079 U	0.031	7.7	0.12	16	0.056	170	1.1
Benzo(j,k)fluoranthene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.0086 U	0.0079 U	0.0093 U	2.2	0.042	4.4	0.016	49	0.34
Chrysene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.013	0.0079 U	0.02	3.8	0.11	7	0.032	90	0.6
Dibenzo(a,h)anthracene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.0086 U	0.0079 U	0.0093 U	1.3	0.016	2.6	0.0074 U	19	0.11
Indeno(1,2,3-cd)pyrene	mg/kg		0.0086 U	0.0085 U	0.0083 U	0.0085 U	0.0088 U	0.045	0.0079 U	0.03	9.5	0.052	34	0.037	140	1.2
Total cPAH TEQ (ND=0.5RL)	mg/kg	0.1	0.0065 UT	0.0064 UT	0.0063 UT	0.0064 UT	0.0066 UT	0.0457 T	0.006 UT	0.0436 T	**11.308 T**	**0.1425 T**	**25.29 T**	0.067 T	**248.4 T**	**1.429 T**

Analyte/Groups	Units	Cleanup Level [1]	SS-A6(E)-3.5 10/10/12	SS-A6(E)-4.5 10/10/12	SS-B1(N)-3 10/18/12	SS-B6(S)-3 10/18/12	SS-C1(N)-3 10/18/12	SS-C6(S)-4.5 10/18/12	SS-E1(N)-3 10/24/12	SS-E6(S)-3 10/22/12	SS-F1(N)-3 10/24/12	SS-F1(W)-3 10/25/12	SS-F3(W)-3 10/25/12	SS-F4(W)-3 10/22/12	SS-F6(S)-3 10/25/12	SS-F6(W)-3 10/25/12
TPH by NWTPH-GX/NWTPH-Dx																
Gasoline-range hydrocarbons	mg/kg	30 [2]	6.5 U	5.9 U	5.9 U	7.2 U	5.4 U	5.4 U	--	--	--	--	--	--	--	--
Diesel-range hydrocarbons	mg/kg	2000	1000	28 U	27 U	370 U	27 U	**4500**	--	--	--	--	--	--	--	--
Lube Oil-range Hydrocarbons	mg/kg	2000	**4900**	56 U	54 U	**2500**	54 U	470 U	--	--	--	--	--	--	--	--
Metals by SW6010C/SW7471																
Lead	mg/kg	250	**980 J**	8.7 J	28	**740**	100	8.9	120 J	100	12 J	5.7 U	5.5 U	5.2 U	5.3 U	5.1 U
Mercury	mg/kg	2	0.3 U	0.28 U	0.27 U	0.31 U	0.27 U	0.27 U	0.27 U	0.27 U	**2.3**	0.28 U	0.27 U	0.26 U	0.26 U	0.26 U
BTEX by SW8021B																
Benzene	mg/kg	0.03	**0.052**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	--	--	--	--	--	--	--	--
CPAHs by SW8270SIM																
Benzo(a)anthracene	mg/kg		46	0.012	0.062	0.13	0.55	0.042	0.31	0.1	0.019	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Benzo(a)pyrene	mg/kg		**140**	0.032	**0.18**	**0.18**	**1.2**	0.035 U	**0.99**	**0.19**	0.048	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Benzo(b)fluoranthene	mg/kg		110	0.026	0.16	0.33	1.1	0.035 U	0.91	0.22	0.042	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Benzo(j,k)fluoranthene	mg/kg		27	0.0092	0.036	0.091	0.34	0.035 U	0.21	0.056	0.013	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Chrysene	mg/kg		50	0.014	0.087	0.26	0.73	0.077	0.43	0.18	0.027	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Dibenzo(a,h)anthracene	mg/kg		13	0.0074 U	0.011	0.082 U	0.13	0.035 U	0.12	0.036 U	0.0079 U	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Indeno(1,2,3-cd)pyrene	mg/kg		89	0.025	0.15	0.12	0.86	0.035 U	0.84	0.13	0.035	0.0076 U	0.0073 U	0.0069 U	0.0071 U	0.0068 U
Total cPAH TEQ (ND=0.5RL)	mg/kg	0.1	**169 T**	0.0397 T	**0.2228 T**	**0.2538 T**	**1.5053 T**	0.0295 T	**1.2333 T**	**0.2442 T**	0.0596 T	0.0057 UT	0.0055 UT	0.0052 UT	0.0054 UT	0.0051 UT

Note:

[1]MTCA Method A soil cleanup levels for unrestricted land use (WAC 173-340-740[2]).

[2]Cleanup level for gasoline-range total petroleum hydrocarbons is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.

Excavation confirmation base samples will be named according to the following example: BS-A1-6 where, "BS-" indicates a confirmation base sample, "A1" indicates the grid ID presented on Figure 2, and "6" indicates the sample depth of 6 feet bgs.

Excavation confirmation sidewall samples will be named according to the following example: SS-E6(S)-3 where, "SS" indicates a confirmation sidewall sample, "E6" indicates the grid ID presented on Figure 2, "(S)" indicates the sample was collected from the south sidewall, and "3" indicates the sample depth of 3 feet bgs.

cPAHs = Carcinogenic polycyclic aromatic hydrocarbons

mg/kg = Milligrams per kilogram

MTCA = Washington State Model Toxics Control Act

TEQ = Total toxic equivalent concentration calculated per WAC 173-340-708[8][e][iii][A]. For non-detected constituents, one-half the method reporting limit was used in the calculation. All values calculated using toxocity equivalency factors from WAC 173-340 Table 708-2 (Nov. 2007).

*Field duplicate sample

-- = Constituent not analyzed or cleanup level not established

U = The analyte was analyzed for, but was not detected above the listed method reporting limit.

T = Calculated by GeoEngineers.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Chemical analyses performed by OnSite Environmental, Inc. in Redmond, Washington.

Detections are shown in **bold** typeface.

Gray highlighted cells indicate values that exceed the associated MTCA cleanup level.

FIGURES

GeoEngineers

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

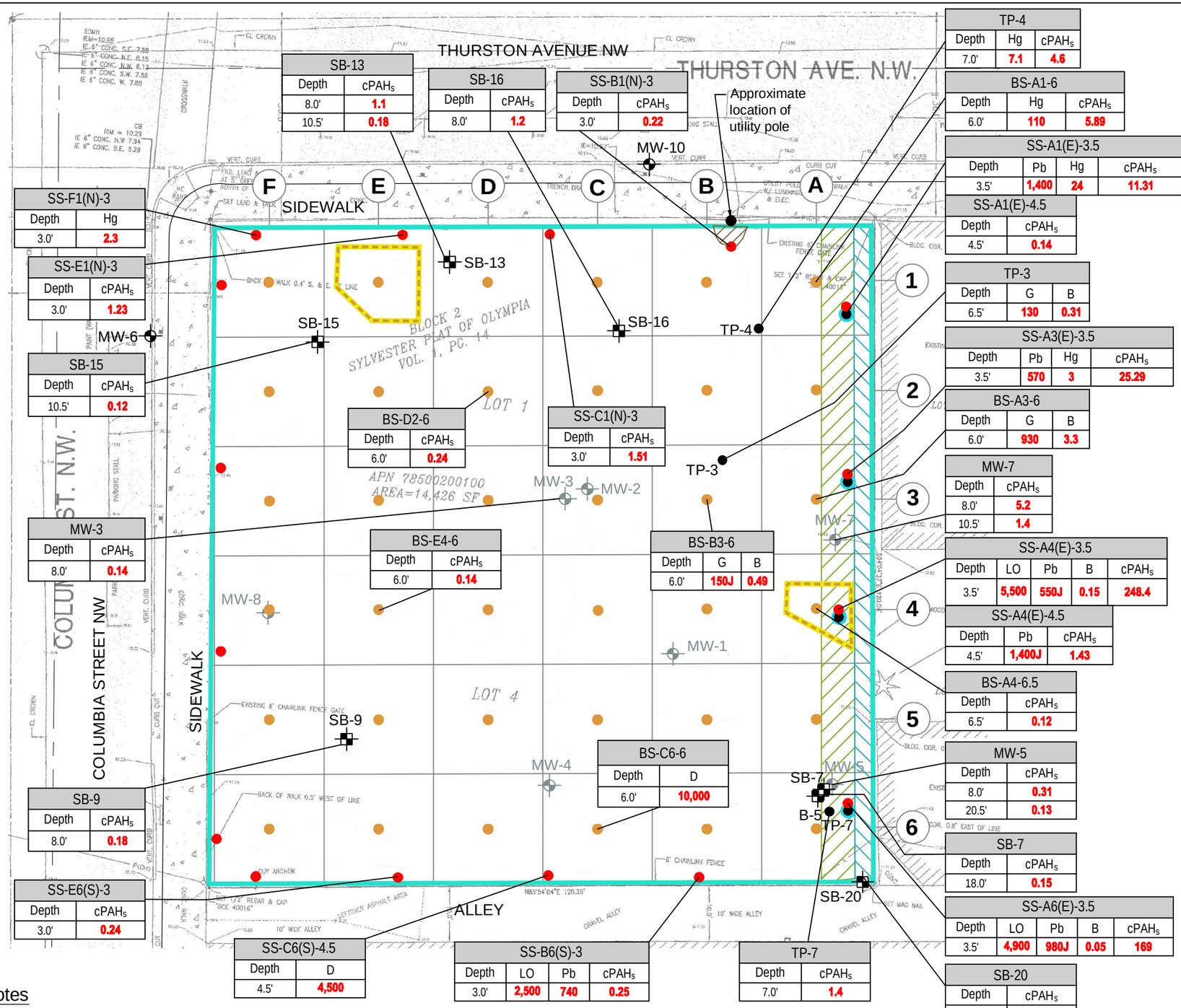
Vicinity Map

Former Olympia MGP Site
Olympia, Washington

GeoEngineers

Figure 1

Office: SEA Path: \\sea\projects\0\0186774\GIS\0186774GIS\018677400_F1_VM.mxd Map Revised: 14 October 2011 amanza



SB-13	
Depth	cPAHs
8.0'	1.1
10.5'	0.18

SB-16	
Depth	cPAHs
8.0'	1.2

SS-B1(N)-3	
Depth	cPAHs
3.0'	0.22

TP-4		
Depth	Hg	cPAHs
7.0'	7.1	4.6

BS-A1-6		
Depth	Hg	cPAHs
6.0'	110	5.89

SS-A1(E)-3.5			
Depth	Pb	Hg	cPAHs
3.5'	1,400	24	11.31

SS-A1(E)-4.5	
Depth	cPAHs
4.5'	0.14

SS-F1(N)-3	
Depth	Hg
3.0'	2.3

SS-E1(N)-3	
Depth	cPAHs
3.0'	1.23

TP-3		
Depth	G	B
6.5'	130	0.31

SS-A3(E)-3.5			
Depth	Pb	Hg	cPAHs
3.5'	570	3	25.29

SB-15	
Depth	cPAHs
10.5'	0.12

BS-D2-6	
Depth	cPAHs
6.0'	0.24

SS-C1(N)-3	
Depth	cPAHs
3.0'	1.51

BS-A3-6		
Depth	G	B
6.0'	930	3.3

MW-7	
Depth	cPAHs
8.0'	5.2
10.5'	1.4

MW-3	
Depth	cPAHs
8.0'	0.14

BS-E4-6	
Depth	cPAHs
6.0'	0.14

BS-B3-6		
Depth	G	B
6.0'	150J	0.49

SS-A4(E)-3.5				
Depth	LO	Pb	B	cPAHs
3.5'	5,500	550J	0.15	248.4

SS-A4(E)-4.5		
Depth	Pb	cPAHs
4.5'	1,400J	1.43

BS-A4-6.5	
Depth	cPAHs
6.5'	0.12

BS-C6-6	
Depth	D
6.0'	10,000

MW-5	
Depth	cPAHs
8.0'	0.31
20.5'	0.13

SB-9	
Depth	cPAHs
8.0'	0.18

SB-7	
Depth	cPAHs
18.0'	0.15

SS-E6(S)-3	
Depth	cPAHs
3.0'	0.24

SS-A6(E)-3.5				
Depth	LO	Pb	B	cPAHs
3.5'	4,900	980J	0.05	169

SS-C6(S)-4.5	
Depth	D
4.5'	4,500

SS-B6(S)-3			
Depth	LO	Pb	cPAHs
3.0'	2,500	740	0.25

TP-7	
Depth	cPAHs
7.0'	1.4

SB-20	
Depth	cPAHs
8.0'	0.36
10.5'	0.15

Legend

- Property boundary/ Excavation Limit
- Area where excavation depth was greater than 6-feet (to remove stained soil)
- Existing Building
- Existing fence
- Confirmation soil sample (excavation base)
- Confirmation soil sample (excavation sidewall)
- Confirmation soil sample (excavation sidewall) where two samples were collected at two separate depths
- MW-10 — Existing groundwater monitoring well
- MW-8 — Groundwater monitoring well decommissioned prior to commencing remedial excavation activities
- Soil boring (completed during a previous investigation)
- Test pit location (completed during a previous investigation)
- B-2 — Confirmation sampling grid
- Sidewall sloped 1-foot horizontal: 1-foot vertical
- 3-foot setback from property line
- 4-foot setback from utility pole

Soil analytical results (mg/kg) for contamination that remains in-place at concentrations greater than MTCA A cleanup levels.

B = Benzene
cPAHs = Total carcinogenic polycyclic aromatic hydrocarbons – toxic equivalent concentration
LO = Lube oil-range hydrocarbons
D = Diesel-range hydrocarbons
G = Gasoline-range hydrocarbons
Hg = Mercury
Pb = Lead
J = The result is an estimated value.

Red/bold values exceed MTCA Method A cleanup levels

Note: Analytical results were less than MTCA Method A cleanup levels for confirmation soil samples with no posted data.

N W E S

20 0 20
FEET

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

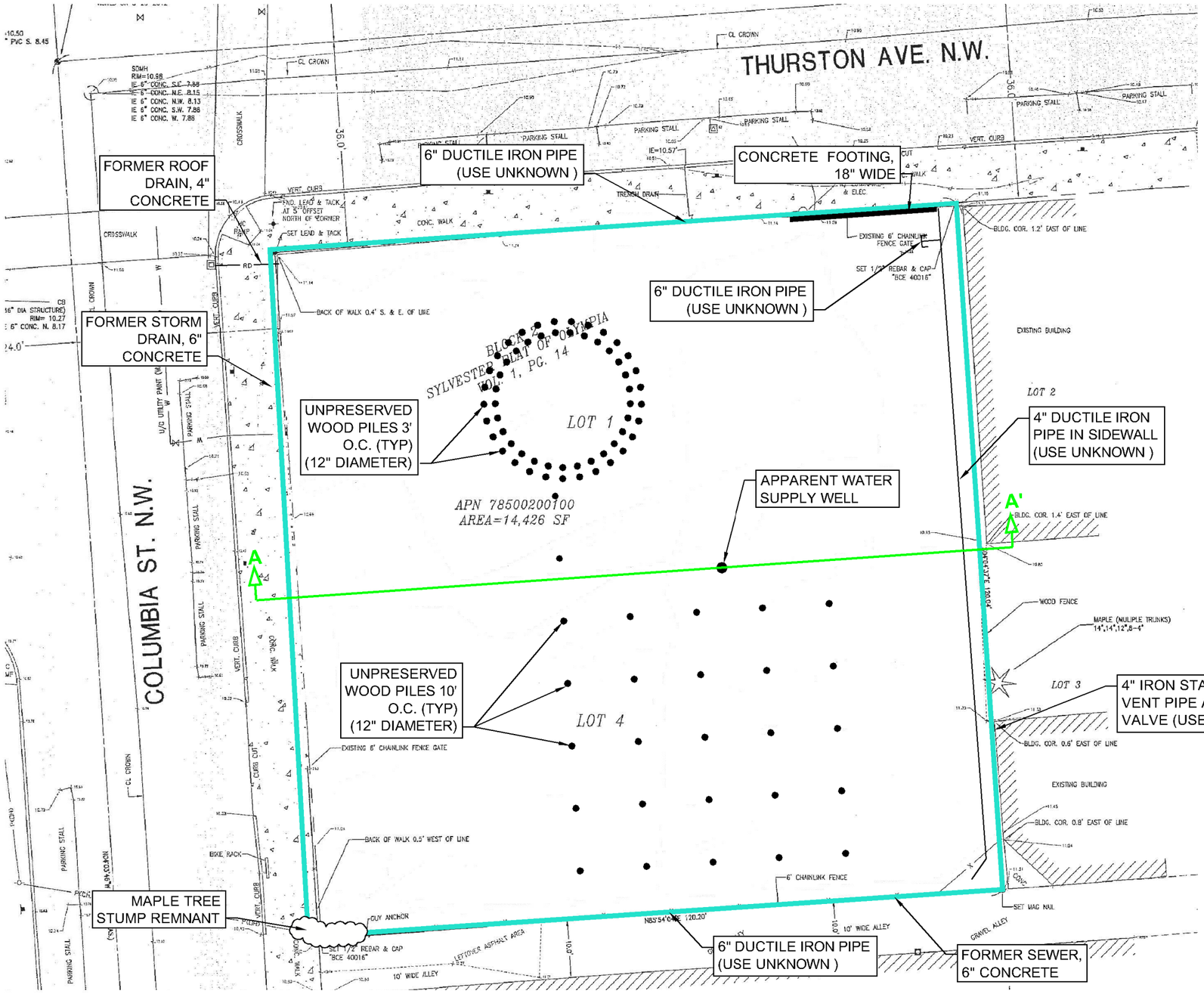
Remedial Excavation Limits and Soil Analytical Results

Former Olympia MGP Site
Olympia, Washington

GeoEngineers

Figure 2

OFFICE: SEA Dwg name: W:\Seattle\Projects\0\0186774\02\CAD\RACR\018677402_T500_RACR_F2.dwg User: cvanslyke Plot time: Dec-11-12 @ 9:07am



Legend

- Property Boundary/ Excavation Limit
- Existing tree
- Existing sidewalk
- RD — Existing Roof Drain line
- W — Existing waterline
- P(OH) — Existing Overhead power
- O.C. — On Center
- TYP — Typical
- A — A' — Cross Section (see Figure 5)

N W E S

20 0 20
FEET

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guaiantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. All locations are approximate.

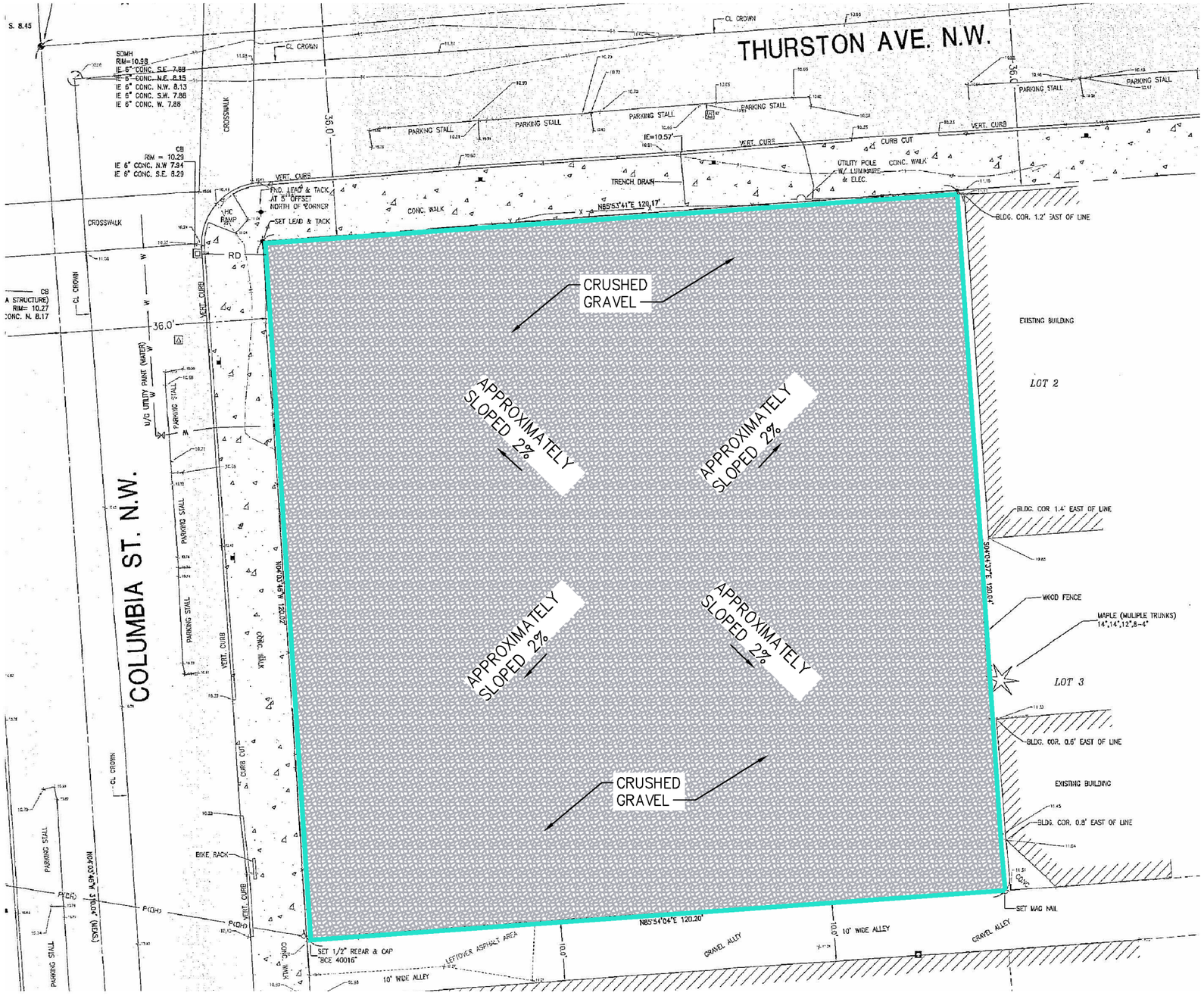
Reference: Background image provided by Barghausen dated 3/27/2012.

Former MGP Utilities and Structures Remaining After Excavation

Former Olympia MGP Site
Olympia, Washington

GeoEngineers

Figure 3



Legend

- Property Boundary/ Excavation Limit
- Existing tree
- Existing sidewalk
- Crushed Surfacing (gravel)
- P(OH) — Existing overhead power
- RD — Existing Roofdrain line
- W — Existing waterline

N W E S

20 0 20
FEET

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed im an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

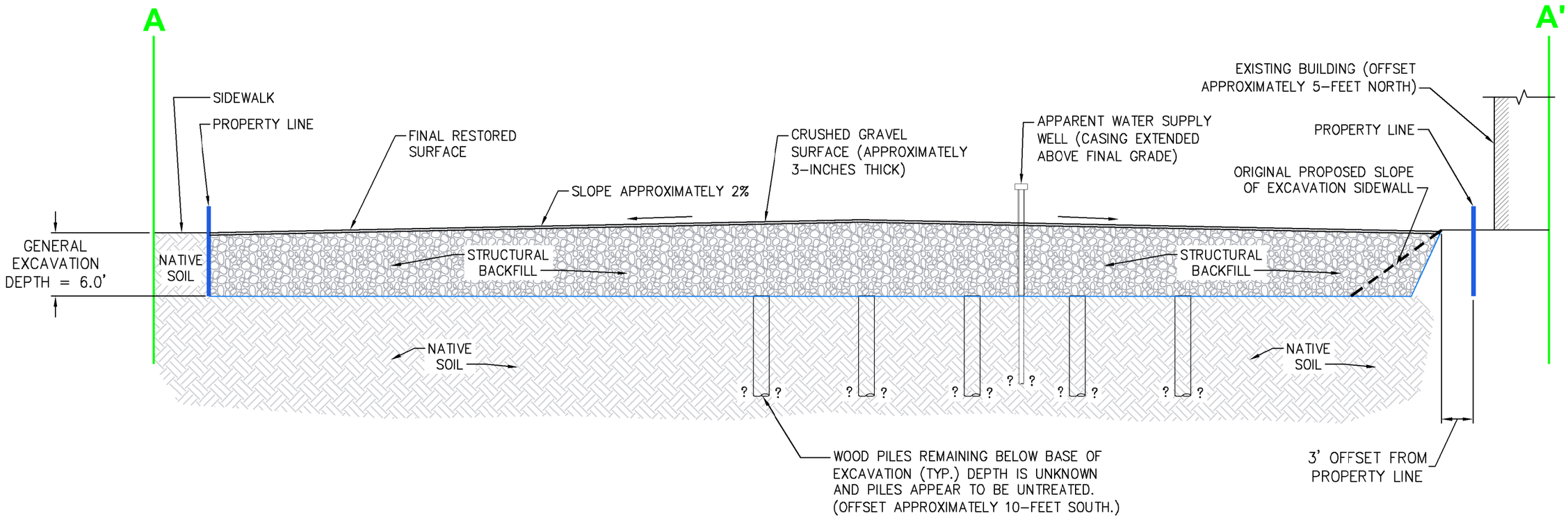
Reference: Background image provided by Barghausen dated 3/27/2012..

Restored Property (Plan View)

Former Olympia MGP Site
Olympia, Washington

GeoEngineers

Figure 4



Note:

1. See Figure 3 for Section A-A' location

HORIZONTAL SCALE: 1"= 10'
VERTICAL SCALE: 1"= 5'
VERTICAL EXAGGERATION: 2X

10 0 10
FEET

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Data based on sketch provided by GeoEngineers staff.

Restored Property (Cross Section View)

Former Olympia MGP Site
Olympia, Washington

GeoEngineers

Figure 5

APPENDICES

GeoEngineers

APPENDIX A
Site Photographs

Photograph 1: Tree being removed (southwest corner of property)

Photograph 2: Typical subsurface excavation conditions

Site Photographs	
Former Olympia Manufactured Gas Plant Olympia, Washington	
GeoEngineers	Appendix A

Photograph 3: Excavation sidewall vertical cut activities

Photograph 4: Remnant underground piping (northeast corner of property)

Site Photographs	
Former Olympia Manufactured Gas Plant Olympia, Washington	
GeoEngineers	Appendix A

Photograph 5: Apparent concrete footing for the former gas holder (left side of photo) located towards the north-northwest portion of the site

Photograph 6: Concrete footing/foundation and piping debris removed from excavation

Site Photographs	
Former Olympia Manufactured Gas Plant Olympia, Washington	
GeoEngineers	Appendix A

Photograph 7: Unpreserved wood piles (southeast corner of property)

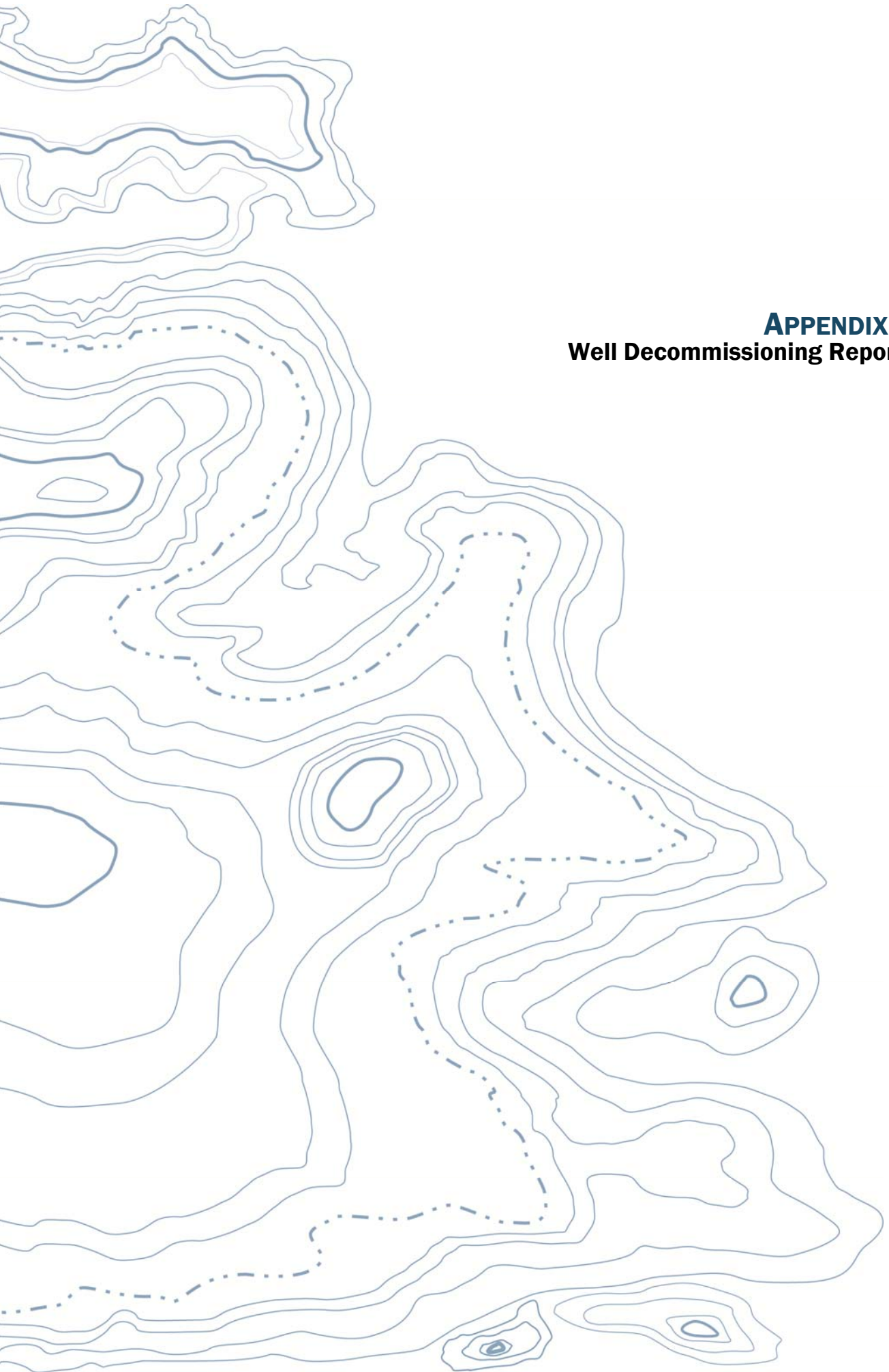
Photograph 8: Unpreserved wood piles (south-central area of property))

Site Photographs	
Former Olympia Manufactured Gas Plant Olympia, Washington	
GeoEngineers	Appendix A

Photograph 9: Apparent water supply well encountered during excavation activities (east-central property area)

Photograph 10: Maple tree stump remnants (southwest corner of property)

Site Photographs	
Former Olympia Manufactured Gas Plant Olympia, Washington	
GeoEngineers	Appendix A



APPENDIX B
Well Decommissioning Reports

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission ("x" in box)

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE03748

Consulting Firm _____

Unique Ecology Well IDTag No. BBM 796

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well ("x in box)

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

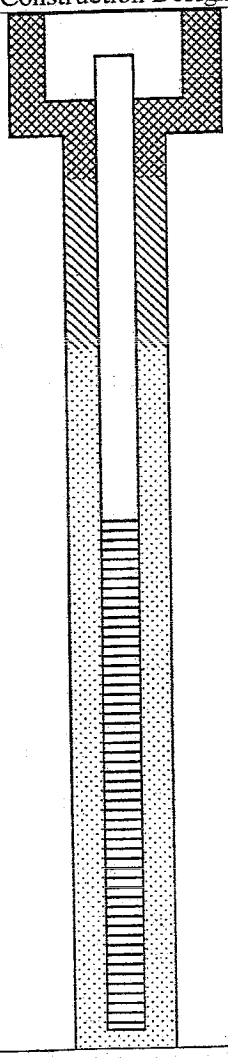
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 5.5'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-5'

SCREEN: 5-15'

WELL DEPTH: 20'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

☒ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 1 OF 7

ECY 050-12 (Rev. 7/06)

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Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE03748

Consulting Firm _____

Unique Ecology Well IDTag No. BBM 797

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

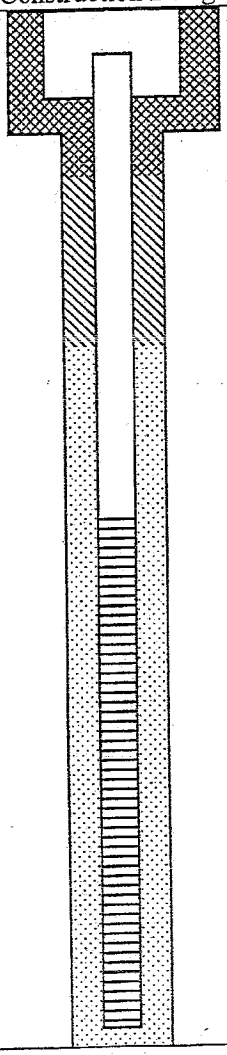
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 5.4'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-5'

SCREEN: 5-15'

WELL DEPTH: 20

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

X WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 2 OF 7

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE03748

Consulting Firm _____

Unique Ecology Well IDTag No. BBM798

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

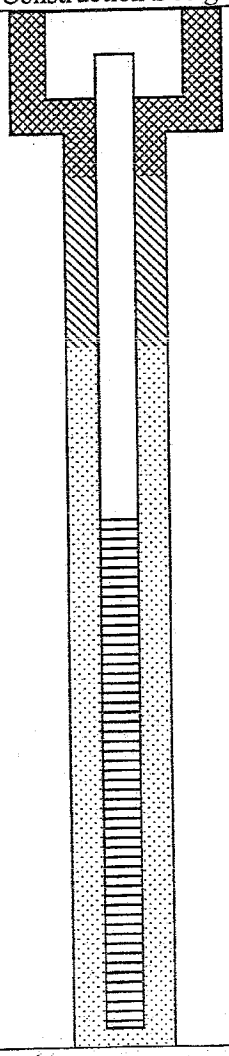
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 6'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-5'

SCREEN: 5'-20'

WELL DEPTH: 20'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: YES / NO

X WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 3 OF 7

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE02502

Consulting Firm

Unique Ecology Well IDTag No. APE 299

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

Long Deg ____ Min ____ Sec ____

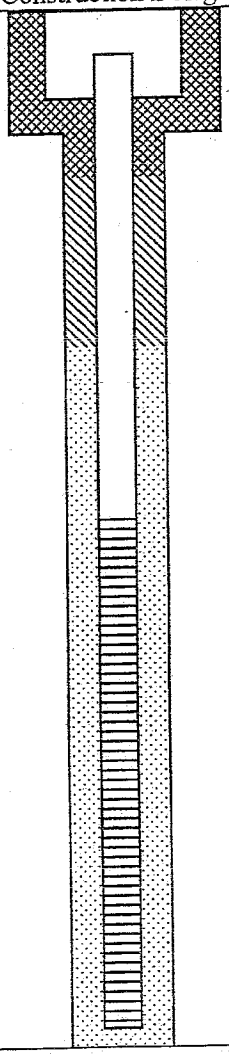
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 5.5'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-5'

SCREEN: 5-15'

WELL DEPTH: 20'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

☒ WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 4 OF 7

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE02502

Consulting Firm _____

Unique Ecology Well IDTag No. APE 300

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

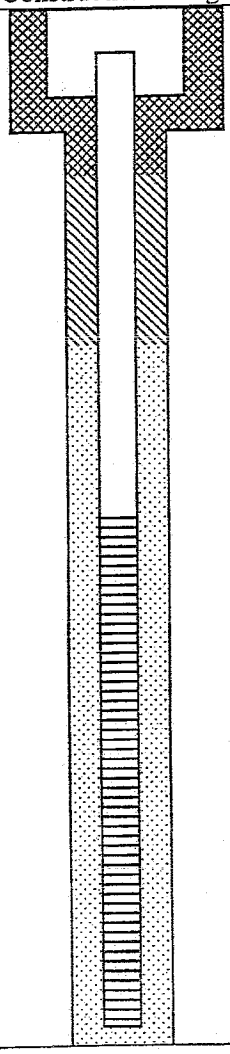
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 4.85'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: YES/NO

PVC BLANK: 0-5'

SCREEN: 5-15'

WELL DEPTH: 20'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

X WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 5 OF 7

ECY 050-12 (Rev. 7/06)

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Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE02502

Consulting Firm _____

Unique Ecology Well IDTag No. APE297

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

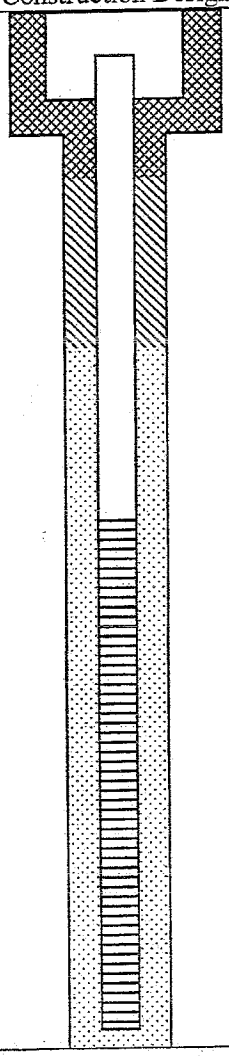
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 5.5'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-23'

SCREEN: 23-28'

WELL DEPTH: 28'

Formation Description

FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

X WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

SCALE: 1"= NA PAGE 6 OF 7

ECY 050-12 (Rev. 7/06)

Ecology is an Equal Opportunity Employer

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE18779

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☐ Construction

☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number: RE02502

Consulting Firm _____

Unique Ecology Well IDTag No. APE 298

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name) Mefford, John

Driller/Engineer /Trainee Signature John Mefford

Driller or Trainee License No. 2815

If trainee, licensed driller's Signature and License Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Evergreen Olympic Properties LLC

Site Address 320 Columbia St NW

City Olympia County Thurston

Location NW1/4-1/4 SW1/4 Sec 14 Twn 18 R 02

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Min _____ Sec _____

Long Deg _____ Min _____ Sec _____

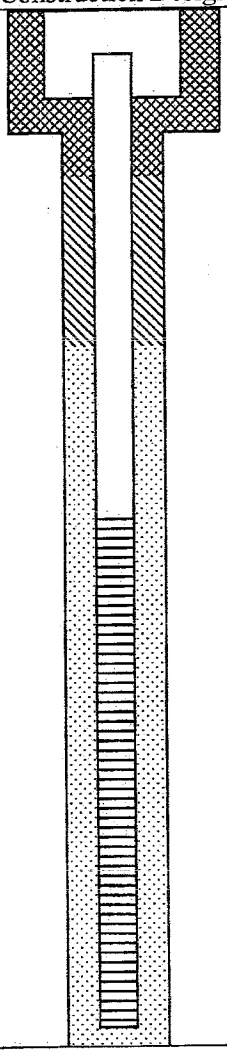
Tax Parcel No. 78500200100

Cased or Uncased Diameter 2.0 Static Level 5.4'

Work/Decommission Start Date 9/5/12

Work/Decommission Completed Date 9/5/12

Construction Design



Well Data

MONUMENT TYPE: flush, steel 12"

REMOVED MONUMENT: ~~YES~~/NO

PVC BLANK: 0-39'

SCREEN: 39-44'

WELL DEPTH: 44'

Formation Description

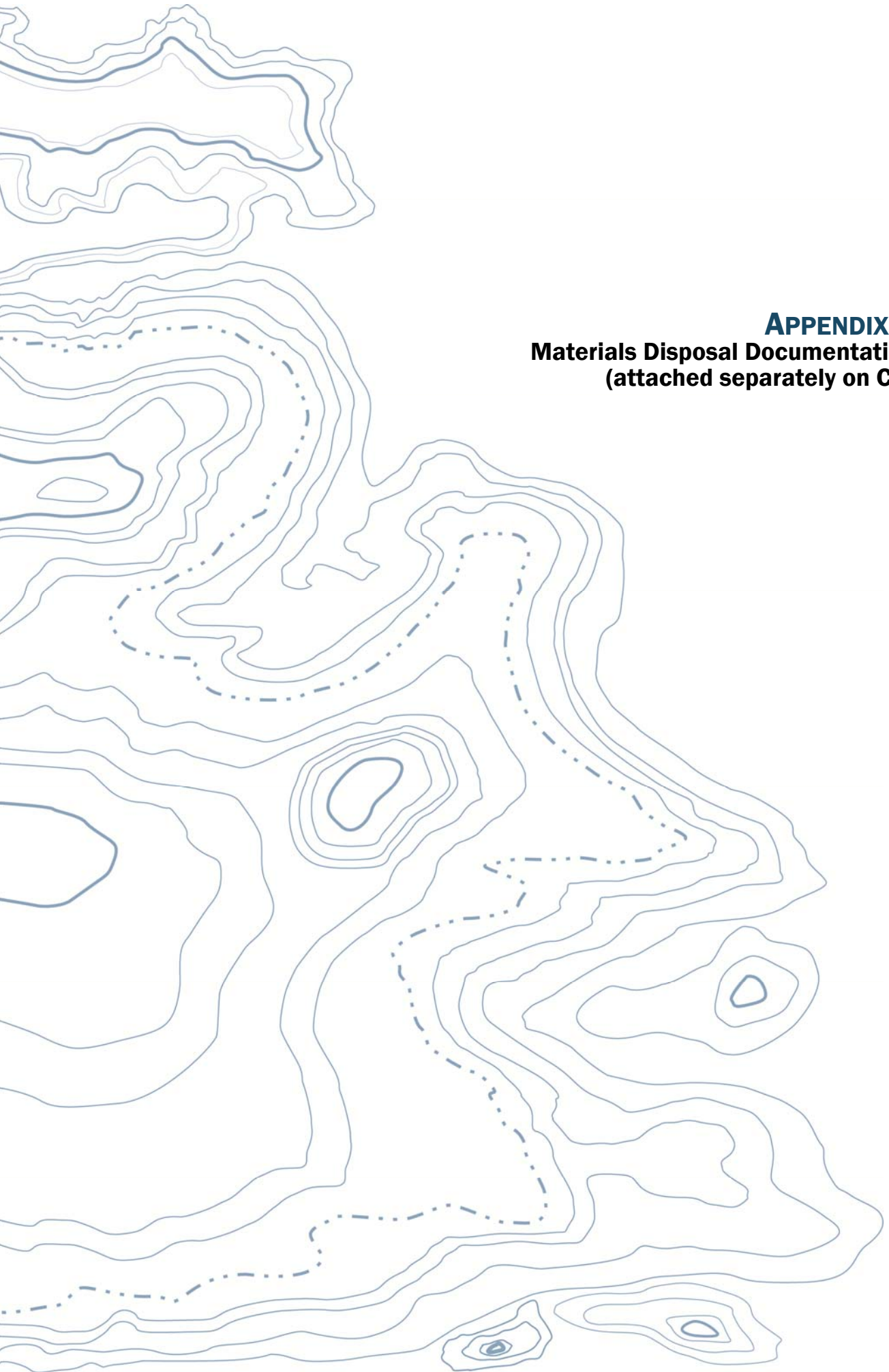
FORMATION NOT OBSERVED – WELL WAS DECOMMISSIONED

REMOVED MONUMENT: ~~YES~~ / NO

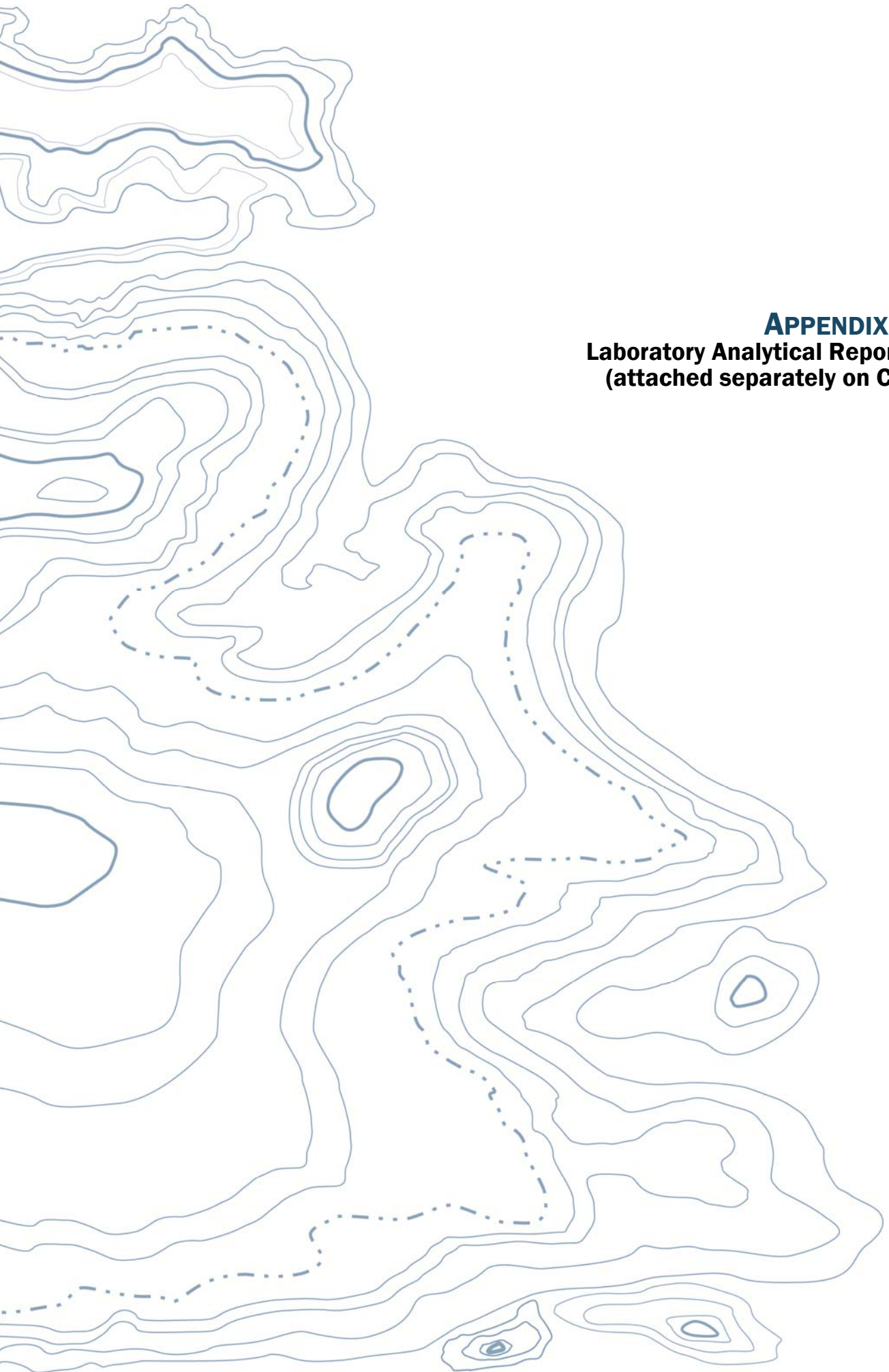
X WELL WAS CHIPPED/GROUTED IN PLACE

☐ ALL CASING WAS REMOVED AND BACKFILLED BOTTOM UP

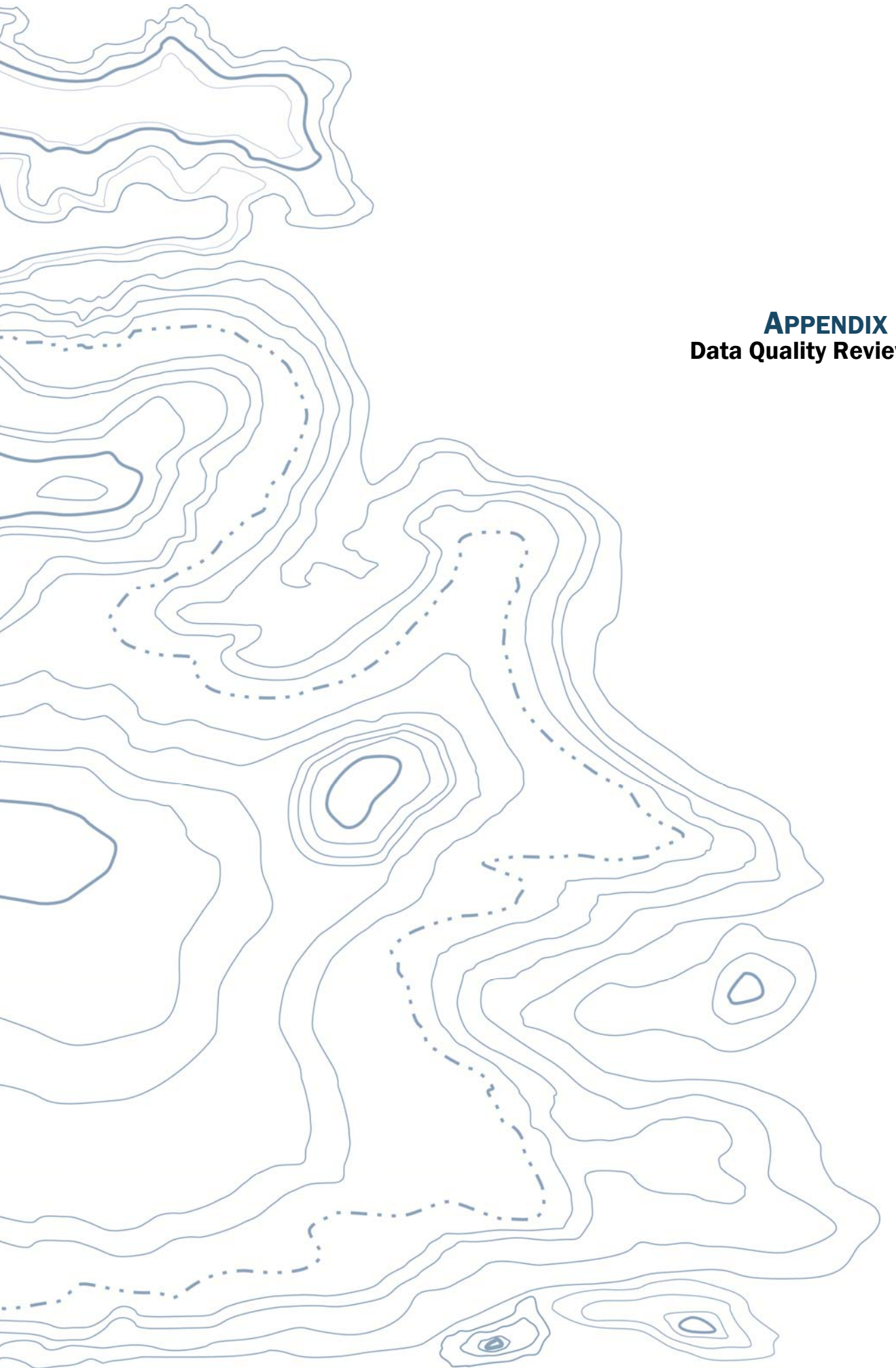
SCALE: 1"= NA PAGE 7 OF 7



APPENDIX C
Materials Disposal Documentation
(attached separately on CD)



APPENDIX D
Laboratory Analytical Reports
(attached separately on CD)



APPENDIX E
Data Quality Review

DATA QUALITY ASSESSMENT SUMMARY

TOTAL PETROLEUM HYDROCARBONS BY METHODS NWTPH-GX AND NWTPH-DX, LEAD AND MERCURY BY METHODS SW6010 AND SW7471, BENZENE BY SW8021B, CPAHS BY SW8270-SIM

OnSite Laboratory SDG	Samples Validated (Bold indicates the sample was qualified)
1210-093	BS-A1-6, BS-A2-6, **BS-A3-6**, SS-A1(E)-3.5, SS-A1(E)-4.5, SS-A3(E)-3.5, SS-A3(E)-4.5, TRIP BLANK_121009
1210-120	BS-B5-6, BS-B6-6, BS-C1-6, BS-C2-6, BS-C3-6, TRIP BLANK_121012
1210-112	**BS-A4-6.5, BS-A4-6.5 DUP**, BS-A5-6, BS-A6-6, BS-B1-6, **BS-B2-6, BS-B3-6, BS-B4-6, SS-A4(E)-3.5, SS-A4(E)-4.5, SS-A6(E)-3.5, SS-A6(E)-4.5**, TRIP BLANK_121010
1210-154	BS-C4-6, BS-C5-6, BS-C6-6, TRIP BLANK_121016
1210-163	BS-D1-6, BS-D2-6, BS-D3-6
1210-180	BS-D4-6, BS-D5-6, BS-D6-6, SS-B1(N)-3, SS-B6(S)-3, SS-C1(N)-3, SS-C6(S)-4.5, TRIP BLANK_121018
1210-198	BS-E5-6, BS-E5-6 DUP, BS-E6-6, BS-F5-6, BS-F6-6
1210-210	BS-E1-6, BS-E4-6, SS-E6(S)-3, BS-F4-6, SS-F4(W)-3
1210-223	**BS-E1-7**, BS-E2-6, BS-E3-6, BS-F1-6, BS-F2-6, **SS-E1(N)-3, SS-F1(N)-3**
1210-243	BS-F3-6, SS-F1(W)-3, SS-F3(W)-3, SS-F6(S)-3, SS-F6(W)-3

PROJECT: PSE-COLUMBIA ST. MGP (0186-774-02)

This report documents the results of an Environmental Protection Agency (EPA) level 2a data validation of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. The review included the following:

- Chain of Custody
- Holding Times and Sample Preservation
- Surrogates
- Method and Trip Blanks
- Laboratory Control Samples
- Matrix Spikes/Matrix Spike Duplicates
- Laboratory and Field Duplicates
- Miscellaneous

OBJECTIVE

The objective of the data validation was to review laboratory analytical procedures and quality control (QC) results to evaluate whether:

- The samples were analyzed using well-defined and acceptable methods that provide detection limits below applicable regulatory criteria;
- The precision and accuracy of the data are well defined and sufficient to provide defensible data; and
- The quality assurance/quality control (QA/QC) procedures utilized by the laboratory meet acceptable industry practices and standards.

Fifty-eight (58) soil samples, including two field duplicates, and five trip blanks were analyzed by one or more of the analytical methods listed in the title of this appendix.

DATA PACKAGE COMPLETENESS

OnSite Environmental, located in Redmond, Washington, analyzed the soil samples evaluated as part of this data quality assessment. The laboratory provided all required deliverables for the assessment according to the National Functional Guidelines. The laboratory followed adequate corrective action processes and all identified anomalies were discussed in the case narrative.

DATA QUALITY ASSESSMENT SUMMARY

The results for each of the QC elements are summarized below. The data assessment was performed using guidance in the USEPA Contract Laboratory Program *National Functional Guidelines for Inorganic Data Review* (USEPA, 2002) and USEPA Contract Laboratory Program *National Functional Guidelines for Organic Data Review* (USEPA, 2008).

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. There were no anomalies noted on the COC forms; proper COC protocols appear to have been followed for each sampling event.

Holding Times and Sample Preservation

The holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for all analyses.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in any environmental sample. Surrogates are used for organic analyses and are added to all samples, standards and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added at a known concentration and percent recoveries are calculated following analysis. All surrogate recoveries for field samples were within the laboratory control limits, with the following exceptions.

SDG 1210-112 (CPAHs): The %R value for terphenyl-d14 exceeded the control limit in Sample SS-A4(E)-3.5. No action was required for this outlier because at least two other base-neutral fraction surrogates were within their respective control limits.

SDG 1210-154 (NWTPH-Gx): The surrogate in Sample BS-C6-6 could not be assessed because the high concentration of the target analyte range was masking the surrogate peak in the sample.

SDG 1210-180 (CPAHs): The %R value for terphenyl-d14 exceeded the control limit in Sample SS-B6(S)-3. No action was required for this outlier because at least two other base-neutral fraction surrogates were within their respective control limits.

Method and Trip Blanks

Method blanks are analyzed to ensure that laboratory procedures and reagents do not introduce measurable concentrations of the analytes of interest. Method blanks were analyzed with each batch of samples, at a frequency of 1 per 20 samples. For all sample batches, method blanks for all applicable methods were analyzed at the required frequency. None of the analytes of interest were detected above the reporting limits in any of the method blanks.

Trip blanks are analyzed to ensure that the methods of storage and transportation to and from the site do not introduce measureable concentrations of the volatile analytes of interest. One Trip blank is usually analyzed per sample cooler. In this sampling event, five blanks were analyzed at the required frequency. None of the volatile analytes were detected above the reporting limits in these blanks.

Matrix Spikes/Matrix Spike Duplicates (MS/MSD)

Because the actual analyte concentration in an environmental sample is not known, the accuracy of a particular analysis is usually inferred by performing a matrix spike (MS) analysis. One aliquot of sample is analyzed in the normal manner, and then a second aliquot of the sample is spiked with a known amount of analyte concentration and analyzed. From these analyses, a percent recovery (%R) is calculated.

Matrix spike duplicates (MSD) analyses are generally performed for organic analyses as a precision check.

For matrix spikes, analyses should be performed once per analytical batch or every 20 field samples, whichever is more frequent. The recovery criteria for matrix spikes and laboratory control samples are specified in the laboratory documents as are the relative percent difference values. The frequency requirements were met for all analyses and the %R/RPD values were within the proper control limits, with the following exceptions.

SDG 1210-112 (Metals): A MS/MSD sample set was performed on Sample SS-A6(E)-3.5. The %R values for lead were outside the control limits. The presicion and accuracy could not be properly assessed because the native sample concentration for lead was greater than four times the amount spiked into the sample. No further action was taken.

SDG 1210-210 (CPAHs): A MS/MSD sample set was performed on Sample BS-E1-6. The %R values for several target analytes were outside the control limits. The presicion and accuracy could not be properly assessed because the native sample concentrations for each of these analytes were greater than four times the amount spiked into the sample. No further action was taken.

SDG 1210-223 (Metals): A MS/MSD sample set was performed on Sample SS-E1(N)-3. The MSD %R value for lead was outside the control limits. However, the corresponding MS %R value for lead was within the control limits. No further action was taken.

The RPD value for lead was outside the control limits in the same QC sample set. The positive results for lead were qualified as estimated for precision (J) in all samples in this SDG: SS-E1(N)-3, BS-E1-7, SS-F1(N)-3.

Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

A laboratory control sample is essentially a blank sample that is spiked with a known amount of analyte concentration and analyzed. It is to be treated much like a matrix spike, without the possibility for matrix interference. As there is no actual sample matrix in the analysis, the analytical expectations for accuracy and precision are usually more rigorous and qualification would apply to all samples in the batch, instead of the parent sample only.

Laboratory control sample analyses should be performed once per analytical batch or every 20 field samples, whichever is more frequent. The recovery criteria for laboratory control samples are specified in the laboratory documents as are the relative percent difference values. The frequency requirements were met for all analyses, and the %R/RPD values were within the proper control limits.

Laboratory Duplicates (Metals and Fuels analyses only)

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory, and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration greater than five times the reporting limit for that sample, the absolute difference is used instead of the RPD.

Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met with the following exceptions.

SDG 1210-112: A laboratory duplicate was performed on Sample SS-A6(E)-3.5. The RPD value for lead exceeded the control limit. The positive results for lead were qualified as estimated for precision (J) in all the Samples in this SDG: BS-B2-6, BS-B3-6, BS-B4-6, SS-A4(E)-3.5, SS-A4(E)-4.5, SS-A6(E)-3.5, and SS-A6(E)-4.5.

SDG 1210-223: A laboratory duplicate was performed on Sample SS-E1(N)-3. The RPD value for lead exceeded the control limit. The positive results for lead were qualified as estimated for precision (J) in all the Samples in this SDG: SS-E1(N)-3, BS-E1-7, SS-F1(N)-3.

Field Replicates/Duplicates

Field duplicate samples were collected and analyzed along with the reviewed sample batches. The duplicate samples were analyzed for the same parameters as the associated parent samples. As mentioned above for the laboratory duplicates the RPD is used as the criteria for assessing precision, unless one or more of the samples used has a concentration greater than five times the reporting limit for that sample, the absolute difference is used instead of the RPD.

SDG 1210-112: A field duplicate was performed on Sample BS-A4-6.5. The RPD/absolute difference values exceeded the control limits of 50%/2 times the reporting limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(j,k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and the resulting cPAH-TEQ calculation. The positive results for these compounds were qualified as estimated (J) in the both the parent and the duplicate samples.

SDG 1210-180: A field duplicate was performed on Sample BS-E5-6. The precision parameters mentioned above were met for all target analytes.

Miscellaneous

SDG 1210-093: The laboratory indicated that the chromatogram for Sample BS-A3-6 did not match the calibration standard for diesel range hydrocarbons. The positive result for diesel in this sample was qualified as estimated high (J) for this reason.

SDG 1210-112: The laboratory indicated that the chromatogram for Sample BS-B3-6 did not match the calibration standard for gasoline range hydrocarbons. The positive result for gasoline range hydrocarbons in this sample was qualified as estimated high (J) for this reason.

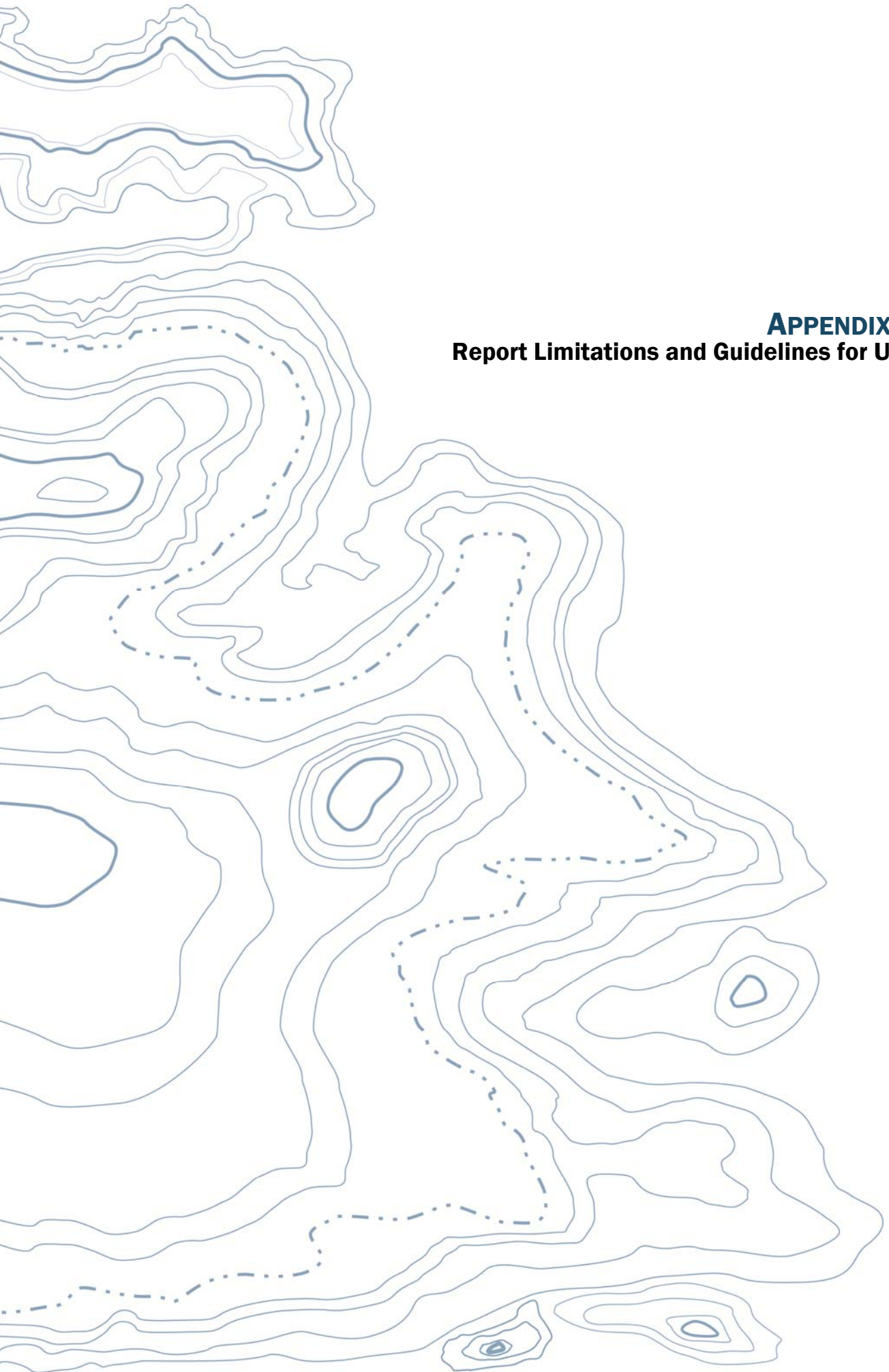
The laboratory indicated that the chromatogram for Sample BS-B3-6 did not match the calibration standard for diesel range hydrocarbons. The positive result for diesel range hydrocarbons in this sample was qualified as estimated high (J) for this reason.

OVERALL ASSESSMENT

As was determined by this data quality assessement, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD %R values. Precision was acceptable, as demonstrated by the field duplicate, laboratory duplicate, LCS/LCSD and MS/MSD RPD values.

Data were qualified because of the MS/MSD precision, field duplicate precision, laboratory duplicate precision, and because of chromatography mismatches.

The data are acceptable for the intended use.



APPENDIX F
Report Limitations and Guidelines for Use

APPENDIX F
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Environmental Services Are Performed For Specific Purposes, Persons And Projects

This report has been prepared for the exclusive use by Puget Sound Energy, their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report Is Based On A Unique Set Of Project-Specific Factors

This report has been prepared for Puget Sound Energy's former Olympia manufactured gas plant (MGP) property at 320 Columbia Street NW in Olympia, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

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[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions For Third Parties

No other party may rely on the product of our services unless we agree in advance and in writing to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Environmental Regulations Are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance change, or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Study Is Completed

No environmental assessment can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil And Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?
Please let us know by visiting **www. geoengineers.com/feedback**.

GeoEngineers