STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

CERTIFIED MAIL
7007 2560 0000 6214 0280

February 23, 2009

Mr. John Rork
Puget Sound Energy
P.O. Box 90868
PSE-11N
Bellevue, Washington 98009-0868

Re: Further Action at a Property associated with a Site:

- Property Address: 320 Columbia Street, Olympia, Washington
- Facility/Site No.: 91682829
- VCP Project No.: SW0984

Dear Mr. Rork:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of a Property associated with the Columbia Square Properties (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issues Presented and Opinion

1. Is further remedial action necessary at the Property to clean up contamination associated with the Site?

   YES. Ecology has determined that further remedial action is necessary at the Property to clean up contamination associated with the Site.

2. Is further remedial action also necessary elsewhere at the Site?

   YES. Ecology has determined that further remedial action is also necessary elsewhere at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Property and the Site

This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

1. Description of the Property.

The Property includes the following tax parcel that was affected by the Site and addressed by your cleanup:

- Thurston County Tax Parcel #78500200100

Enclosure A includes a legal description of the Property. The location of the Property within the Site is illustrated in **Enclosure B.**

2. Description of the Site.

The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline-range organics (GRO), diesel-range organics (DRO), and heavy oil-range (ORO) total petroleum hydrocarbons into the soils.
- Gasoline-range organics into the groundwater.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) into the soils.
- Semivolatile organic compounds (SVOCs), including carcinogenic polycyclic aromatic hydrocarbons (cPAHs), into the soils and groundwater.
- Metals into the soils and groundwater.

Those releases may have affected more than one parcel of real property, including the parcel identified above.

Enclosure B includes a detailed description and diagram of the Site, as currently known to Ecology.

3. Identification of Other Sites that may affect the Property.

Please note that a parcel of real property can be affected by multiple sites. At this time, we have no information that this Property is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. GeoEngineers, Inc., **Site Investigation Report, Former Columbia Street MGP Site, File No. 0186-774-00,** November 26, 2008.
2. Environmental Partners, Inc., **Summary of Findings, Historical Review and Focused Baseline Environmental Assessment, Parcels 7850-02-00100, 9900-00-06800, and 9900-08-32500 in Thurston County, 320 Columbia Street NW, Olympia, Washington,** September 13, 2006.
3. Estern Geotechnical, Inc. **Hazardous Waste Investigation for Columbia Square Properties,** 9-11-90.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary at the Property to clean up contamination associated with the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards for the Site and select a cleanup for the Property. The Site is described above and in **Enclosure B.**

Characterization of the entire Site could not be conducted due to structures on the adjacent properties to the east and south of the affected parcel. It is likely that contamination exists beyond the eastern and southern boundaries of the Property.

Based on a review of the work plan and the newly instituted Ecology guidance on property cleanups, Ecology has the following comments:

1. To further characterize the Property, Ecology recommends installation of two additional monitoring wells to collect and analyze Property soils and groundwater to a maximum depth of 30 feet below ground surface. A monitoring well in the southeast corner of the Property is needed to characterize whether off-Property sources are impacting the Property. A monitoring well in the former underground storage tank (UST) excavation location is needed to evaluate the soils and groundwater beneath the former UST. Ecology recommends that the Site soil samples be analyzed for GRO, DRO, ORO, BTEX, and other constituents, as appropriate, in accordance with MTCA Table 830-1. If 1-2 dibromoethane (EDB), 1-2 dichloroethane (EDC), and methyl tertiary-butyl ether (MTBE) are detected in Property groundwater samples, the Property soils should also be analyzed for EDB, EDC, and MTBE.

2. Total arsenic, total chromium, and total lead are present in Property groundwater above their respective MTCA Method A Cleanup Levels (CUL) for groundwater. Further characterization of the groundwater is needed to delineate the Site plume.

3. In accordance with WAC 173-340-7490, a Terrestrial Ecological Evaluation (TEE) needs to be completed for the Property. If the Property qualifies for an exclusion, please fill out the TEE Exclusion form and submit it to Ecology. The form can be found on our website at http://www.ecy.wa.gov/biblio/ecy090300.html.

4. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-Site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

2. Establishment of cleanup standards for the Site.

Ecology has determined the cleanup levels you established for the Site meet the substantive requirements of MTCA.

a. Cleanup levels.

Based on current information, MTCA Method A CUL for unrestricted land use for Property soils and groundwater will be used. When a Method A CUL is not established for soil or groundwater, an appropriate MTCA Method B CUL should be used.

b. Points of compliance.

Standard points of compliance are being used for the Site. The point of compliance for protection of groundwater will be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 feet below ground surface (bgs). In addition, the point of compliance for the groundwater is established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

The Property is part of the suspected, larger Site. Additional data is required as noted above to define the areal and vertical extent of contamination, including, if warranted, the need for permanent monitoring wells to sample and monitor groundwater. As a result, points of compliance have not been fully established.

3. Selection of cleanup for the Property.

Ecology has determined the cleanup you selected for the Site does not meet the substantive requirements of MTCA because the Site has not yet been fully characterized.

The Property is part of the suspected, larger Site. Other than the UST source removal, no cleanup activities have been conducted on the Property.

Since the areal and vertical extent of soil and groundwater contamination beneath the Site has not been fully defined, selection of a final cleanup action is premature at this time. Future cleanup activities will likely result in significant removal of contaminants from the Property and additional Site characterization may be warranted if known Site conditions change.

As noted above, the Property is part of the suspected, larger Site. Additional characterization of the Property is needed to define the nature and extent of contamination. Cleanup alternatives cannot be identified until soil and groundwater characterization is complete.

4. Cleanup of the Property.

Ecology has determined the cleanup you performed does not meet cleanup standards within the Property.

To date, the UST source removal is the only remedial activity conducted on the Property and it is not clear if that activity removed any contaminated soils from the Property and it did not address other sources of contamination. Additional characterization of the Property is warranted before a final cleanup action can be identified.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Change the boundaries of the Site.
- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up your Property under the Voluntary Cleanup Program (VCP).

After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me at (360) 407-7404 or via email at erad461@ecy.wa.gov.

Sincerely,

Eugene Radcliff, L.G.
VCP Site Manager
SWRO Toxics Cleanup Program

GER/ksc:Columbia Square Properties property further action

Enclosures (2): A – Legal Description of the Property
B – Description and Diagram of the Site
Table 2 – Soil Analytical Results
Figure 5 – Constituents Detected Above MTCA Method A Cleanup Levels in Soil
Table 3 – Groundwater Analytical Results
Figure 6 – Constituents Detected Above MTCA Method A Cleanup Levels in Groundwater

cc: Rob Leet, GeoEngineers, Inc.
Patrick Rants, The Rants Group
Gerald Tousley, Thurston County Health Department
Scott Rose – Ecology
Carol Johnson – Ecology

Enclosure A

Legal Description of the Property

The Property is located at 320 Columbia Street NE, Olympia, Washington. This property is identified as Thurston County parcel no: 178500200100. The legal description for the Property supplied in the Voluntary Cleanup Application was Township 18N, Range 2W, Section 14, and Quarter-Quarter SW-NW. The legal/tax description, as found in the Thurston County Assessor-Treasurer records, is Section 14 Township 18 Range 2W Quarter SW NW Plat SYLVESTER TOWN OF OLYMPIA 2 1 & 4 Document 001/014.

Thurston County Map

Disclaimer: Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.
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Thurston GeoData Center
2404 Heritage Court SW, 3rd Floor
Olympia, WA 98502-6031

LEGEND

- Major Roads
- Roads
- Streams
- Contours
- Wetlands
- Wetland Buffers
- Flood Zones
- Water Bodies
- Zoning
- Cities
- Parcels

Enclosure B

Description and Diagram of the Site

The former Columbia Street Manufactured Gas Plant (MGP) Site is located at 320 Columbia Street NW in Olympia, Washington (Property). The Property consists of one contiguous parcel (Thurston County Tax Parcel # 78500200100) totaling 0.33 acres located on the east side of Columbia Street. This Property is located approximately 300 feet east of West Bay. The entire Property is flat and is paved with one building in the northwest corner of the lot. The total 0.33 acres of the Property are fenced and has no public access. Columbia Street and Thurston Street bound the Property on the west and north, respectively. Commercial buildings bound the Property to the east and south.

Near-surface conditions encountered at the Property consist of 1.5 to 4 feet of fine to medium sand with varying amounts of silt and gravel, interpreted as structural fill. Soils encountered below the structural fill generally consist of gray to brown, fine to coarse sand with variable amounts of silt, gravel, and shell fragments. This material was interpreted as hydraulic fill from dredging of Budd Inlet in the 1800s and early 1900s. Groundwater was encountered approximately 6 to 8 feet below ground surface (bgs) and groundwater measurements imply a shallow groundwater gradient that migrates towards West Bay.

In 1990, Estern Geotechnical, Inc. (Estern) conducted an underground storage tank (UST) removal. The tank volume was approximately 1,000 gallons and reported to have been unused for 10 years. Approximately 121 gallons of gasoline and water was removed from the UST. The UST was reported to be corroded and had holes in the bottom. Estern sampled the soils in the side walls and bottom of the UST excavation for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX). The analytical results for the excavation bottom exceeded the soil cleanup standard of 100 parts per million (ppm) for TPH. Estern allowed the excavation bottom soils to aerate for one week and then collected new samples and analyzed them; the new soil results were reported at 11 ppm for TPH. Estern did not discuss whether they removed contaminated soils from the Property or placed those soils back into the excavation, nor was there any mention of the UST fate. Estern considered the soils in the excavation bottom to be below the soil cleanup standard and no further action was taken.

In 2006, Environmental Partners, Inc. (EPI) conducted a Historical Review and Focused Baseline Environmental Assessment (EA). The EPI Historical Review reported that a MGP and gas storage plant had operated on the Property from approximately 1908 to 1924 and then as gas storage until 1957. Around 1957, the Property housed a warehouse, which operated until 1974. The Property was utilized as a commercial property sometime after 1974.

The 2006 Focused Baseline EA by EPI advanced six borings to assess environmental conditions at the Site. EPI collected soil samples from five borings at a depth of 4 feet bgs and analyzed them for Volatile Organic Compounds (VOCs), gasoline-range total petroleum hydrocarbons (TPH-G), diesel-range total petroleum hydrocarbons (TPH-D), oil-range total petroleum hydrocarbons (TPH-O), polycyclic aromatic hydrocarbons (PAHs), and metals. Property soil

sample analysis did not detect VOCs, TPH-G, and TPH-D above the method detection limits (MDL) and did not indicate soil contamination above the Model Toxics Control Act (MTCA) Method A cleanup levels (CUL) for soils for TPH-O. Soil metals analysis detected chromium, lead, and mercury below MTCA Method A CUL. Total carcinogenic PAHs (cPAH) concentrations were found in the Property soils that exceeded MTCA Method A and Method B soil CUL for unrestricted uses at concentrations up to 123 milligrams per kilogram (mg/kg) when adjusted using the toxicity equivalency factors for cPAH compounds. No soil samples were collected for analysis at the 1990 UST excavation location (B-3) below the 5-foot bottom depth of the excavation.

EPI collected seven groundwater samples and analyzed them for VOCs, TPH-G, TPH-D, TPH-O, PAHs, and metals. No TPH-G, TPH-D, and TPH-O were detected in any groundwater sample above the MDL. VOCs below MTCA Method A CUL were detected in two temporary wells on the Property. Analytical results found cPAH compounds present in the groundwater on the Property above the MTCA Method A CUL for groundwater to a maximum concentration of 9.0 micrograms per liter (µg/l). Groundwater analysis also found arsenic contamination above MTCA Method A CUL across the Property and in one off-Property monitoring well. Arsenic and cPAH contamination appeared to be more concentrated in the southeast corner of the Property. Soil and groundwater data from the 2006 EPI investigation are included in Figure 5 and Figure 6, respectively.

In 2008, GeoEngineers, Inc. (GeoEngineers) conducted a Site Investigation on the Property. GeoEngineers conducted the fieldwork in two phases. During Phase I of field work, seven test pits were excavated at locations coinciding with the former MGP structures, including the generator, wash boxes, scrubbers, purifiers, and gas holders to document soil and groundwater conditions (Figure 5). Soil samples were submitted for laboratory analysis from each test pit. Phase II involved the advancement of soil borings from 20 to 50 feet bgs, with four borings completed as monitoring wells. Soil and groundwater samples collected during the field investigation were analyzed for the following constituents based on previous investigations: TPH-G, TPH-D, TPH-O, BTEX, Semivolatile organic compounds (SVOCs), metals, and cyanide.

Several constituents were detected in soil at concentrations exceeding MTCA Method A CUL (Table 2). Carcinogenic PAHs were detected in several soil samples at concentrations exceeding the MTCA Method A CUL for total cPAHs (0.1 mg/kg). The cPAH exceedances all occurred in samples obtained from depths shallower than 7 feet bgs, except for a sample obtained from 18 feet bgs in boring SB-7. The highest total cPAH concentration was 120 mg/kg from TP-7 (Figure 5). Several other constituents were detected in soil at concentrations exceeding MTCA Method A CUL, including TPH-G (130 mg/kg), TPH-O (2,400 mg/kg), benzene (0.31 mg/kg), lead (2,800 mg/kg), and mercury (29 mg/kg) (Table 2).

In August 2008, total arsenic and total lead were the only constituents detected at concentrations exceeding MTCA Method A CUL in the unfiltered groundwater samples. Total arsenic concentrations exceeded the MTCA Method A CUL in all six monitoring wells, ranging from 5.6 µg/l (MW-6) to 120 µg/l (MW-4). Total lead concentrations exceeded the MTCA Method A CUL in MW-3 (18 µg/l) and total chromium exceeded the MTCA Method A CUL in MW-4 (52 µg/l) (Table 3). One groundwater sample (MW-2) contained detectable cPAHs below the MTCA Method A CUL.

In October 2008, GeoEngineers sampled the groundwater again. GeoEngineers collected groundwater samples to evaluate dissolved and total concentrations of arsenic and lead. Total and dissolved arsenic concentrations in five of the six wells sampled in October exceeded the MTCA Method A CUL (Table 3). Total lead concentrations were below the MTCA Method A CUL in all six monitoring wells, dissolved lead was not detected. GeoEngineers did not analyze the groundwater samples for TPH-G, TPH-O, BTEX, and SVOCs in October 2008. Groundwater data from the EPI 2006 report are included in Figure 6.

Table 2
Soil Analytical Results (In mg/kg)
Former Columbia Street MGP
Olympia, Washington

Location	Sample ID[1]	Date	Depth (ft bgs)	BTEX[4]					Total Petroleum Hydrocarbons			Metals[6]							Total Cyanide[8]
				Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Gasoline-Range[4]	Diesel-Range[5]	Heavy Oil-Range[5]	Arsenic	Chromium (total)[7]	Chromium VI	Copper	Lead	Mercury	Cadmium	
TP-1/MW-1	TP1-3.0	8/6/08	3.0	<0.020	<0.051	<0.051	<0.051	<0.051	<5.1	110	690	<12	22	--	18	310	0.63	--	0.534
	TP1-4.0	8/12/08	4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW1-2-070	8/22/08	7.0	<0.020	<0.059	<0.059	<0.059	<0.059	<5.9	<30	160	<12	14	--	9.1	<6.0	<0.30	--	<0.052
	MW1-5-130	8/22/08	13.0	0.021	<0.061	<0.061	<0.061	<0.061	--	<33	<65	--	--	--	--	--	--	--	--
	MW1-9-200	8/22/08	20.0	<0.020	<0.079	<0.079	<0.079	<0.079	--	<32	<64	--	--	--	--	--	--	--	--
TP-2/MW-3	TP2-4.5	8/6/08	4.5	<0.020	<0.047	<0.047	<0.047	<0.047	<4.7	62	300	<11	14	--	13	130	<0.26	--	0.417
	TP2-7.5	8/12/08	7.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW3-03-080	8/20/08	8.0	<0.020	<0.063	<0.063	<0.063	<0.063	<6.3	<30	<60	<12	13	--	7.9	<6.0	<0.30	--	0.318
	MW3-13-280	8/20/08	27.5	<0.020	<0.063	<0.063	<0.063	<0.063	--	<30	<60	--	--	--	--	--	--	--	--
	MW3-22-450	8/20/08	44.5	<0.020	<0.067	<0.067	<0.067	<0.067	--	<31	<61	--	--	--	--	--	--	--	--
TP-3/SB-6	TP3-2.5	8/6/08	2.5	0.021	<0.054	<0.054	<0.054	<0.054	11	540	2,400	<11	15	--	77	600	9.2	--	0.244
	TP3-6.5	8/6/08	6.5	0.31	<0.70 U1	2.2	0.90	<0.14	130	<33	<66	<13	15	--	6.6	20	<0.33	--	<0.065
	SB6-5-130	8/22/08	13.0	<0.020	<0.055	<0.055	<0.055	<0.055	<5.5	<27	<53	--	--	--	--	--	--	--	--
	SB6-9-200	8/22/08	20.0	<0.020	<0.055	<0.055	<0.055	<0.055	--	<30	<60	--	--	--	--	--	--	--	--
TP-4	TP4-3.5	8/6/08	3.5	<0.020	<0.048	<0.048	<0.048	<0.048	<4.8	200	810	<11	14	--	22	600	29	--	0.208
	TP4-7.0	8/6/08	7.0	<0.020	<0.055	<0.055	<0.055	<0.055	<5.5	54	280	<13	12	--	15	74	7.1	--	0.154
	TP4-7.0-Dup*	8/6/08	7.0	<0.020	<0.072	<0.072	<0.072	<0.072	<7.2	43	170	<14	19	--	20	89	0.83	--	0.282
TP-5/SB-5	TP5-3.5	8/6/08	3.5	<0.020	<0.052	<0.052	<0.052	<0.052	--	<26	<53	<11	14	--	6.5	<5.3	<0.26	--	<0.048
	TP5-6.0	8/6/08	6.0	<0.020	<0.060	<0.060	<0.060	<0.060	--	<31	<63	<13	14	--	6.2	<6.3	<0.31	--	<0.056
	SB5-9-220	8/21/08	22.0	<0.020	<0.065	<0.065	<0.065	<0.065	--	<31	<61	15	14	--	11	<6.1	<0.30	--	<0.101
	SB5-18-400	8/21/08	40.0	<0.020	<0.059	<0.059	<0.059	<0.059	--	<30	<60	<12	19	--	12	<6.0	<0.30	--	0.241
	SB5-18-400-D*	8/21/08	40.0	<0.020	<0.067	<0.067	<0.067	<0.067	--	<30	<60	<12	19	--	11	<6.0	<0.30	--	0.274
TP-6	TP6-2.5	8/12/08	2.5	<0.020	<0.045	<0.045	<0.045	<0.045	<4.5	<35	220	<11	11	--	11	21	9.1	--	0.060
TP-7/SB-7	TP7-4.0	8/6/08	4.0	0.28	0.29	<0.086	0.23	0.088	--	800	3,900	<14	23	--	44	2,800	<0.35	--	2.12
	TP7-7.0	8/6/08	7.0	<0.020	<0.059	<0.059	<0.059	<0.059	--	<29	71	<12	17	--	7.1	18	<0.29	--	<0.052
	SB7-6-180	8/21/08	18.0	<0.020	<0.053	<0.053	<0.053	<0.053	--	<29	<57	--	--	--	--	--	--	--	--
	SB7-14-340	8/21/08	34.0	<0.020	<0.071	<0.071	<0.071	<0.071	--	<31	<63	--	--	--	--	--	--	--	--
	SB7-19-500	8/21/08	50.0	<0.020	<0.075	<0.075	<0.075	<0.075	--	<33	<65	--	--	--	--	--	--	--	--
MW-4	MW4-02-040	8/20/08	4.0	<0.020	<0.062	<0.062	<0.062	<0.062	<6.2	<31	130	<12	21	--	21	330	<0.30	--	0.247
	MW4-03-060	8/20/08	6.0	<0.020	<0.057	<0.057	<0.057	<0.057	<5.7	<26	57	<11	14	--	8.2	<5.3	<0.26	--	<0.110
	MW4-08-160	8/20/08	16.0	<0.020	<0.063	<0.063	<0.063	<0.063	--	<31	<63	--	--	--	--	--	--	--	--
	MW4-15-300	8/20/08	28.5	<0.020	<0.063	<0.063	<0.063	<0.063	--	<30	<60	--	--	--	--	--	--	--	--
SB-8	SB8-1-020	8/22/08	2.0	0.024	<0.055	<0.055	<0.055	<0.055	<5.5	270	840	<11	21	--	74	140	8.4	--	<0.052
	SB8-3-060	8/22/08	6.0	<0.025	<0.12	<0.12	<0.12	<0.12	<12	180	1,300	<11	11	--	7.8	19	<0.28	--	0.059
	SB8-6-120	8/22/08	12.0	<0.023	<0.12	<0.12	<0.12	<0.12	--	52	88	--	--	--	--	--	--	--	--
	SB8-10-200	8/22/08	20.0	<0.020	<0.054	<0.054	<0.054	<0.054	--	<28	<56	--	--	--	--	--	--	--	--
Stockpile	STK-Comp-1	8/22/08	SP	<0.020	<0.065	<0.065	<0.065	<0.065	<6.5	<35	270	<12	21	<1.2	28	180	0.57	0.61	--
MTCA Cleanup Level				0.03	7	6	9 (b)	9 (b)	30/100	2,000	2,000	20	19/2,000	19	3,000	250	2	2	1,600

Notes: (see notes on page 1)

Table 3
Groundwater Analytical Results
Former Columbia Street MGP
Olympia, Washington

Location	Screened Interval (ft bgs)	Date	Sample ID	BTEX[2] (ug/L)					Total Petroleum Hydrocarbons			SVOCs[4] (ug/L)									Metals[6] (ug/L)							Total Cyanide[6] (mg/L)
												ncPAHs	cPAHs															
				Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Gasoline-Range[2] (ug/L)	Diesel-Range[3] (mg/L)	Heavy Oil-Range[3] (mg/L)	Benzo(g,h,i)perylene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(e)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs (TEC)[5]	Total Arsenic	Dissolved Arsenic[7]	Total Chromium	Total Copper	Total Lead	Dissolved Lead[7]	Total Mercury	
MW-1	5.0-20.0	8/28/08	MW-1	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.40	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	24	–	22	12	3.2	–	<0.50	<0.005
		10/6/08	MW-1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16	17	–	–	2.3	<1.0	–	–
MW-2	5.0-20.0	8/28/08	MW-2	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.40	0.081	0.012	0.0099	0.020	<0.0095	0.021	0.028	<0.0095	0.028	10	–	13	7.1	5.1	–	<0.50	<0.005
		10/6/08	MW-2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12	11	–	–	3.6	<1.0	–	–
MW-3	39.5-44.5	8/28/08	MW-3	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.26	<0.41	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	83	–	43	40	18	–	<0.50	<0.005
		8/28/08	D-08-28-08*	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.40	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	64	–	45	40	18	–	<0.50	<0.005
		10/6/08	MW-3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	52	34	–	–	7.2	<1.0	–	–
MW-4	23.5-28.5	8/28/08	MW-4	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.41	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	120	–	52	26	6.2	–	<0.50	<0.005
		10/6/08	MW-4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	67	42	–	–	3.9	<1.0	–	–
MW-6	15[1]	8/28/08	MW-6	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.40	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	5.6	–	13	<11	2.2	–	<0.50	<0.005
		10/6/08	MW-6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	<3.3	<3.0	–	–	8.6	<1.0	–	–
MW-10	15[1]	8/28/08	MW-10	<0.50	<0.50	<0.50	<1.0	<1.0	<100	<0.25	<0.40	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0072	12	–	<11	<11	<1.1	–	<0.50	<0.005
		10/6/08	MW-10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	11	10	–	–	4.7	<1.0	–	–
MTCA Cleanup Level				5	1,000	700	1,000 (a)	1,000 (a)	800/1,000	0.5	0.5	–	–	–	–	–	–	–	–	0.1	5	5	50	590	15	15	2	0.2

Notes:
ug/L = Micrograms per liter
mg/L = Milligrams per liter
BTEX = Benzene, toluene, ethylbenzene and xylenes
SVOCs = Semivolatile organic compounds
ncPAHs = Non-carcinogenic polycyclic aromatic hydrocarbons
cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
ft bgs = Feet below ground surface
MTCA = Washington State Model Toxics Control Act
* Field duplicate sample
– = Constituent not analyzed or cleanup level not established
[1]Approximate depth to bottom of well casing measured with an electronic water level indicator on October 6, 2008. This well was installed by others.
[2]BTEX analyzed by Ecology Method NWTPH-Gx/BTEX or EPA Method 8021B; gasoline-range hydrocarbons analyzed by Ecology Method NWTPH-Gx. Gasoline-range cleanup level is 800 ug/L when benzene is present and 1,000 ug/L when benzene is not present.
[3]Analyzed by Ecology Method NWTPH-Dx.
[4]Analyzed by EPA Method 8270D/SIM. The target analyte list included 78 compounds. Results for all cPAH compounds are shown; results for other SVOCs are shown only if the compound was detected in at least one sample.
[5]Toxic equivalent concentration, calculated using MTCA TEC methodology (WAC 173-340-708[5][e]). For non-detected cPAHs, one-half the practical quantitation limit was used in the calculation.
[6]Analyzed by EPA Method 200.8/7470A.
[7]Groundwater samples analyzed for dissolved arsenic and dissolved lead were field-filtered with a 45 micron filter.
[8]Analyzed by EPA Method 335.4.
Yellow-highlighted values are MTCA Method A cleanup levels for groundwater (WAC 173-340-720[3]).
Blue-highlighted values are MTCA Method B cleanup levels (standard formula values) for groundwater (WAC 173-340-720[4][b]).
Green-highlighted values are Federal Primary Maximum Contaminant Levels (MCLs) (40 C.F.R. 141).
(a) Total value for all xylenes.
Detections are shown in bold typeface.
Gray shading indicates value exceeds the associated MTCA cleanup level when rounded to the same number of significant figures as the cleanup level.
Chemical analyses (except cyanide) performed by OnSite Environmental Inc. in Redmond, WA; cyanide analysis performed by Analytical Resources Inc. in Seattle, WA.

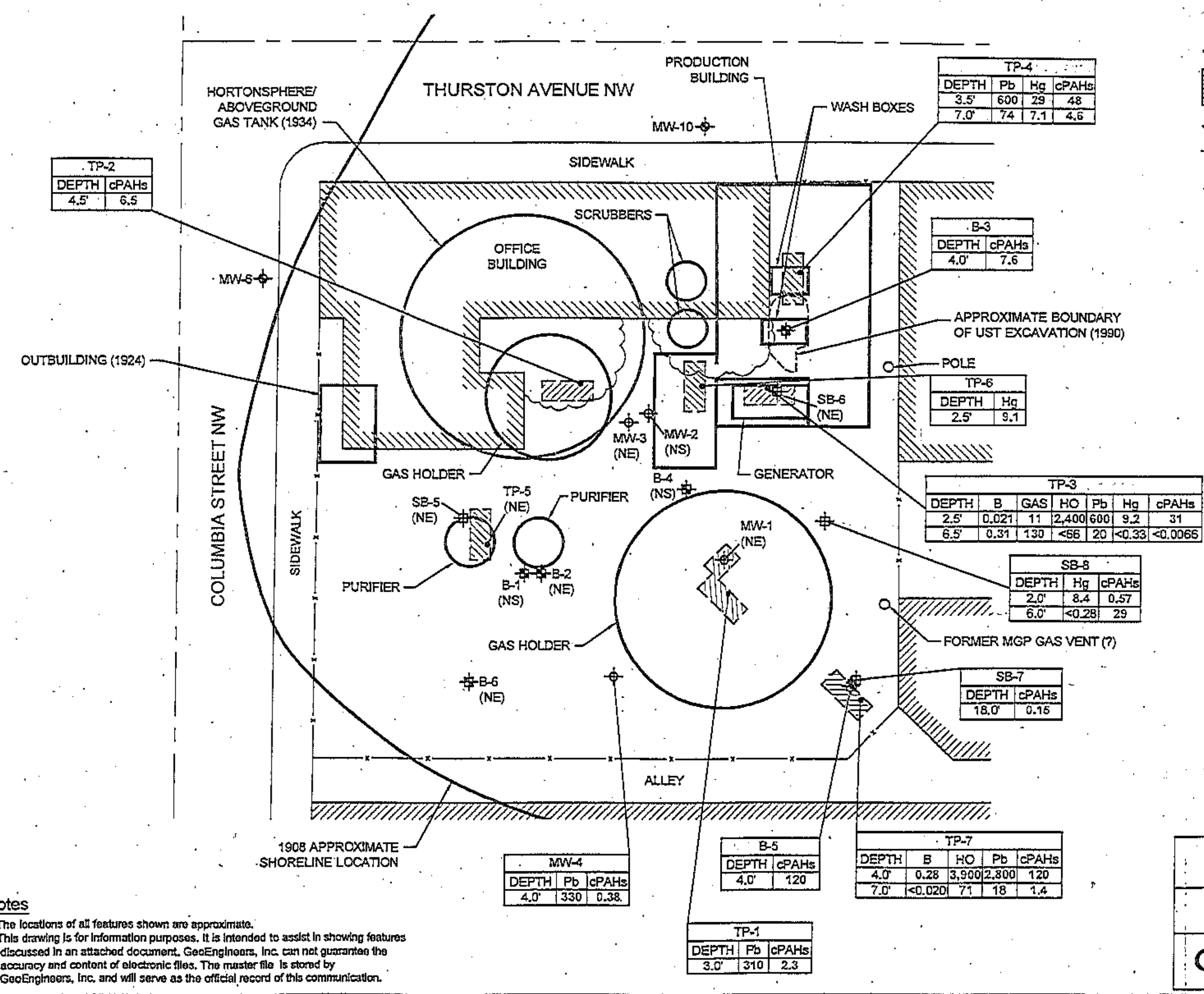
Table 2
Soil Analytical Results (in mg/kg)
Former Columbia Street MGP
Olympia, Washington

				SVOCs[2]																											
											ncPAHs												cPAHs								
Location	Sample ID[1]	Date	Depth (ft bgs)	Hexachlorocyclopentadiene	4-Nitrophenol	Dibenzofuran	2,3,4,6-Tetrachlorophenol	Pentachlorophenol	Carbazole	bis(2-Ethylhexyl)phthalate	Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(g,h,i)perylene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Total cPAHs (TEC)[3]
TP-1/MW-1	TP1-3.0	8/6/08	3.0	0.71	<0.20	<0.20	<0.20	<0.98	<0.20	<0.20	<0.20	<0.20	<0.20	0.22	<0.20	<0.20	<0.20	<0.20	0.83	0.95	7.7	0.41	0.65	0.98	0.87	1.7	3.1	0.35	2.3
	TP1-4.0	8/12/08	4.0	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	0.016	<0.0079	<0.0079	0.0079	<0.0079	<0.0079	0.011	<0.0079	0.0071
	MW1-2-070	8/22/08	7.0	<0.040	<0.040	<0.040	<0.040	<0.40	<0.040	0.087	<0.0079	0.080	0.052	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0060
	MW1-5-130	8/22/08	13.0	<0.043	<0.043	<0.043	<0.043	<0.43	<0.043	0.048	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0066
	MW1-9-200	8/22/08	20.0	<0.043	<0.043	<0.043	<0.043	<0.43	<0.043	<0.043	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0085	<0.0064
TP-2/MW-3	TP2-4.5	8/6/08	4.5	<0.035	<0.035	<0.035	<0.035	<0.18	<0.035	<0.035	0.045	<0.035	<0.035	1.5	0.13	<0.035	1.3	0.20	7.8	10	0.1	2.1	2.3	3.0	2.6	5.4	0.63	0.87	6.8
	TP2-7.5	8/12/08	7.5	<0.042	<0.042	<0.042	<0.042	<0.21	<0.042	<0.042	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	0.013	0.018	<0.0084	<0.0084	<0.0084	<0.0084	<0.0084	0.011	<0.0084	0.0070
	MW3-03-080	8/20/08	8.0	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0080	<0.0080	<0.0080	0.034	<0.0080	<0.0080	0.076	<0.0080	0.20	0.28	0.19	0.061	0.072	0.077	0.071	0.11	0.12	0.012	0.14
	MW3-13-280	8/20/08	27.5	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0060
	MW3-22-450	8/20/08	44.5	<0.041	<0.041	<0.041	<0.041	<0.20	<0.041	<0.041	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.008	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0061
TP-3/SB-6	TP3-2.5	8/6/08	2.5	<0.18	<0.18	<0.18	<0.18	<0.91	0.24	<0.18	0.88	<0.18	<0.18	2.2	<0.18	0.29	4.5	1.3	21	31	46	8.0	11	16	11	25	20	1.7	31
	TP3-6.5	8/6/08	6.5	<0.044	<0.044	<0.044	<0.044	<0.22	<0.044	<0.044	<0.0088	0.27	0.14	<0.0088	<0.0088	<0.0088	0.010	<0.0088	<0.0088	0.0092	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0066
	SB6-5-130	8/22/08	13.0	<0.035	<0.035	<0.035	<0.035	<0.35	<0.035	0.084	<0.0071	0.0088	<0.0071	<0.0071	<0.0071	<0.0071	0.016	<0.0071	0.024	0.042	0.046	0.0076	0.011	0.018	<0.0071	0.019	0.022	<0.0071	0.025
	SB6-9-200	8/22/08	20.0	<0.037	<0.037	<0.037	<0.037	<0.37	<0.037	<0.037	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0057
TP-4	TP4-3.5	8/6/08	3.5	<0.19	<0.19	<0.19	<0.19	<0.93	0.57	<0.19	0.98	<0.19	<0.19	3.5	<0.19	0.64	16	3.2	58	73	45	19	26	23	22	38	31	5.8	48
	TP4-7.0	8/6/08	7.0	<0.042	<0.042	<0.042	<0.042	<0.21	<0.042	<0.042	0.11	<0.042	<0.042	0.42	<0.042	<0.042	0.86	0.10	4.1	5.3	4.8	1.5	2.0	2.5	1.1	3.7	3.1	0.26	4.8
	TP4-7.0-Dup*	8/6/08	7.0	<0.048	<0.048	<0.048	<0.048	<0.24	<0.048	<0.048	0.13	<0.048	<0.048	0.33	<0.048	<0.048	0.62	0.10	4.4	5.8	4.2	1.5	2.1	2.4	1.3	3.5	2.9	0.27	4.4
TP-5/SB-5	TP5-3.5	8/6/08	3.5	<0.035	<0.035	<0.035	<0.035	<0.18	<0.035	<0.035	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	0.0074	0.0080	0.016	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	0.0088	<0.0070	0.0056
	TP5-6.0	8/6/08	6.0	<0.042	<0.042	<0.042	<0.042	<0.21	<0.042	<0.042	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0063
	SB5-9-220	8/21/08	22.0	<0.041	<0.041	<0.041	<0.041	0.21	<0.041	<0.041	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0061
	SB5-18-400	8/21/08	40.0	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	<0.0060
	SB5-18-400-D*	8/21/08	40.0	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0060
TP-6	TP6-2.5	8/12/08	2.5	<0.035	<0.035	<0.035	<0.035	<0.18	<0.035	<0.035	<0.0070	<0.0070	<0.0070	0.010	<0.0070	<0.0070	0.016	<0.0070	0.071	0.087	0.20	0.045	0.065	0.058	0.063	0.086	0.067	0.014	0.082
TP-7/SB-7	TP7-4.0	8/6/08	4.0	<0.23	<0.23	<0.23	<0.23	<1.2	0.36	<0.23	2.9	0.36	<0.23	7.4	<0.23	0.73	9.6	3.2	93	130	120	33	47	62	44	96	62	5.3	120
	TP7-7.0	8/6/08	7.0	<0.039	<0.039	<0.039	<0.039	<0.20	<0.039	<0.039	<0.039	<0.039	<0.039	0.070	<0.039	<0.039	0.090	<0.039	1.1	1.5	1.4	0.42	0.60	0.72	0.53	1.1	0.91	<0.039	1.4
	SB7-8-180	8/21/08	18.0	<0.038	<0.038	<0.038	<0.038	<0.19	<0.038	0.063	<0.0077	<0.0077	<0.0077	<0.0077	<0.0077	<0.0077	0.045	<0.0077	0.18	0.25	0.16	0.056	0.063	0.073	0.071	0.12	0.11	0.012	0.15
	SB7-14-340	8/21/08	34.0	<0.042	0.044	<0.042	0.043	0.26	<0.042	<0.042	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0063
	SB7-19-500	8/21/08	50.0	<0.043	<0.043	<0.043	<0.043	0.23	<0.043	<0.043	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0066
MW-4	MW4-02-040	8/20/08	4.0	<0.041	<0.041	<0.041	<0.041	<0.20	<0.041	<0.041	0.012	<0.0081	<0.0081	0.064	<0.0081	0.011	0.25	0.023	0.38	0.45	0.55	0.14	0.22	0.19	0.17	0.22	0.33	0.044	0.36
	MW4-03-060	8/20/08	6.0	<0.035	<0.035	<0.035	<0.035	<0.18	<0.035	<0.035	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0070	<0.0053
	MW4-08-160	8/20/08	16.0	<0.042	<0.042	<0.042	<0.042	<0.21	<0.042	<0.042	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0083	<0.0063
	MW4-15-300	8/20/08	28.5	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	0.011	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080	<0.0060
SB-8	SB8-1-020	8/22/08	2.0	<0.72	<0.72	<0.72	<0.72	<7.2	<0.72	<0.72	0.057	0.032	0.015	0.051	0.021	0.023	0.19	0.044	0.79	0.91	1.2	0.20	0.30	0.46	0.11	0.41	0.72	0.066	0.57
	SB8-3-060	8/22/08	6.0	<1.9	<1.9	<1.9	<1.9	<19	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	23	27	30	7.7	12	13	13	23	20	<1.9	29
	SB8-6-120	8/22/08	12.0	<0.037	<0.037	0.13	<0.037	<0.37	0.047	0.053	<0.0075	0.016	0.012	<0.0075	0.23	0.27	1.1	0.26	0.77	0.51	0.077	0.098	0.11	0.058	0.057	0.075	0.051	0.0082	0.10
	SB8-10-200	8/22/08	20.0	<0.037	<0.037	<0.037	<0.037	<0.37	<0.037	<0.037	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0056
Stockpile	STK-Comp-1	8/22/08	SP	<0.78	<0.78	<0.78	<0.78	<7.8	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	<0.78	2.3	<0.78	4.7	4.4	2.1	1.5	1.9	1.5	1.3	1.9	1.4	<0.78	2.5
MTCA Cleanup Level				480	—	160	2,400	8.3	50	71	5 (a)	5 (a)	5 (a)	—	4,800	3,200	—	24,000	3,200	2,400	—	—	—	—	—	—	—	—	0.1

Notes:

mg/kg = Milligrams per kilogram
BTEX = Benzene, toluene, ethylbenzene and xylenes
SVOCs = Semivolatile organic compounds
ncPAHs = Non-carcinogenic polycyclic aromatic hydrocarbons
cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
ft bgs = Feet below ground surface
SP = Composite sample of stockpiled soil
MTCA = Washington State Model Toxics Control Act
* Field duplicate sample
— = Constituent not analyzed or cleanup level not established

U1 = The practical quantitation limit is elevated due to interferences present in the sample.
[1]Sample locations are shown in Figure 2.
[2]Analyzed by EPA Method 8270D/SIM. The target analyte list included 75 compounds. Results for all cPAH compounds are shown; results for other SVOCs are shown only if the compound was detected in at least one sample.
[3]Toxic equivalent concentration, calculated using MTCA TEC methodology (WAC 173-340-708[8][e]). For non-detected cPAHs, one-half the practical quantitation limit was used in the calculation.
[4]BTEX analyzed by Ecology Method NWTPH-Gx/BTEX or EPA Method 8021B; gasoline-range hydrocarbons analyzed by Ecology Method NWTPH-Gx. Gasoline-range cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
[5]Analyzed by Ecology Method NWTPH-Dx.
[6]Analyzed by EPA Method 6010B/7471A/7196A.
[7]Chromium VI cleanup level = 19 mg/kg; chromium III cleanup level = 2,000 mg/kg. Only the stockpile sample was analyzed for chromium VI. Based on the non-detect result for this constituent, it is assumed that chromium VI concentrations in the samples collected from test pits and soil borings were below the 19 mg/kg cleanup level.
[8]Analyzed by EPA Method 335.4.
Yellow-highlighted values are MTCA Method A soil cleanup levels for unrestricted land use (WAC 173-340-740[2]).
Blue-highlighted values are MTCA Method B soil cleanup levels (standard formula values) for unrestricted land use (WAC 173-340-740[3][b]).
(a) Total value for naphthalene, 1-methylnaphthalene and 2-methylnaphthalene.
(b) Total value for all xylenes.
Detections are shown in bold typeface.
Gray shading indicates value exceeds the associated MTCA cleanup level when rounded to the same number of significant figures as the cleanup level.
Chemical analyses (except cyanide) performed by OnSite Environmental Inc. in Redmond, WA; cyanide analysis performed by Analytical Resources Inc. in Seattle, WA.



TP-2

DEPTH	cPAHs
4.5'	6.5

TP-4

DEPTH	Pb	Hg	cPAHs
3.5'	600	29	48
7.0'	74	7.1	4.6

B-3

DEPTH	cPAHs
4.0'	7.6

TP-6

DEPTH	Hg
2.5'	9.1

TP-3

DEPTH	B	GAS	HO	Pb	Hg	cPAHs
2.5'	0.021	11	2,400	600	9.2	31
6.5'	0.31	130	<56	20	<0.33	<0.0066

SB-8

DEPTH	Hg	cPAHs
2.0'	8.4	0.57
6.0'	<0.28	29

SB-7

DEPTH	cPAHs
18.0'	0.15

MW-4

DEPTH	Pb	cPAHs
4.0'	330	0.38

B-5

DEPTH	cPAHs
4.0'	120

TP-7

DEPTH	B	HO	Pb	cPAHs
4.0'	0.28	3,900	2,800	120
7.0'	<0.020	71	18	1.4

TP-1

DEPTH	Pb	cPAHs
3.0'	310	2.3

Legend

- 1908 Site facilities / features
- Existing structure
- Edge of vegetation
- Existing fence
- Pre-existing monitoring well
- Previous soil boring (EPI 2006); all soil samples collected at 4 ft bgs
- Test pit (GeoEngineers 2008)
- Test pit sidewall soil sampling location
- Soil boring (GeoEngineers 2008)
- Monitoring well (GeoEngineers 2008)

Soil results in mg/kg

cPAHs = Total carcinogenic polycyclic aromatic hydrocarbons – toxic equivalent concentration

B = Benzene

GAS = Gasoline-range hydrocarbons

HO = Heavy oil-range hydrocarbons

Pb = Lead

Hg = Mercury

(NS) = No soil samples analyzed

(NE) = No MTCA exceedances

Red/bold values exceed MTCA Method A cleanup levels

Constituents Detected Above MTCA Method A Cleanup Levels in Soil

Former Columbia Street MGP Site
Olympia, Washington

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Figure 5

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.

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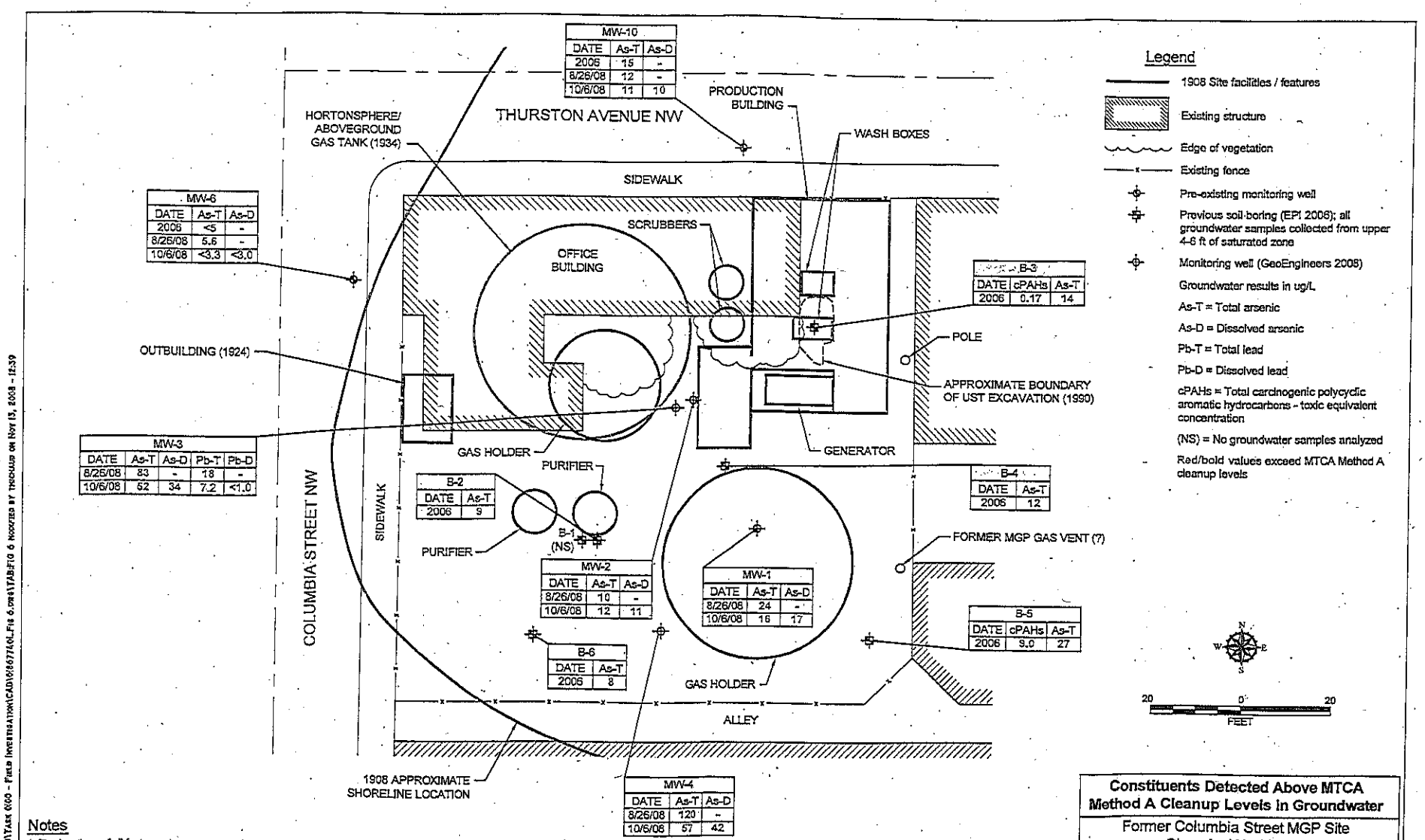

Notes

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.

Constituents Detected Above MTCA Method A Cleanup Levels in Groundwater

Former Columbia Street MGP Site
Olympia, Washington

GeoEngineers

Figure 6