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March 24, 2016

Mr. Dale Myers
Washington State Department of Ecology
Northwest Regional Office
3190 160th Ave SE
Bellevue, WA 98008-5452

Re: Response to Opinion Letter
Olympic Pipeline Company – Kent Block Valve
74th Avenue South & South 259th Street
Kent, Washington 98032
VCP No.: NW2705

Dear Mr. Myers:

On behalf of Remediation Management (a BP affiliated company) and Olympic Pipeline Company (OPLC), Antea®Group (Antea Group) has prepared this letter for the OPLC Kent Block Valve located near the intersection of 74th Avenue South & South 259th Street in Kent, King County, Washington (hereinafter referred to as the "Site"). This letter was prepared in response to the *Opinion Letter* issued by the Washington State Department of Ecology (Ecology) on June 12, 2013, and to provide data to support the request for a No Further Action (NFA) determination.

The Right-of-Way (ROW) where the block valve is located is owned by Puget Sound Energy (PSE) and leased by OPLC. The block valve is part of an underground pipeline that supplies refined petroleum products from refineries in north Washington State to bulk terminals and other facilities for distribution. The actual Model Toxics Control Act (MTCA) Site location is an area extending approximately 60 feet to the southeast, 100 feet to the east, and 530 feet to the southwest of Kent Block Valve (the Property). A Site Location Map is presented as Figure 1. An Expanded Site Map detailing the Site features is presented as Figure 2. A copy of Ecology's *Opinion Letter* is included as Appendix A.

The *Opinion Letter* states "Based on a review of supporting documentation listed above, pursuant to requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 73-340 WAC, for characterizing and addressing the following release at the Site, Ecology has determined":

- ***"Confirmation soil sampling throughout the facility to assess current soil conditions is required. Additionally, current soil conditions between the block valve property and the Valley Freeway Building remain unknown".***

ANTEA GROUP Response: On August 12 and 13, 2015, Antea Group conducted a subsurface investigation to confirm the degradation of petroleum hydrocarbon concentrations in soil and characterize current soil conditions near the Valley Freeway Building (adjacent property west of the block valve). Antea Group directed the advancement of 14 soil borings to an approximate depth of 20 feet below ground surface (bgs) to assess soil conditions across the Site. The locations of the soil borings were based on hydrocarbon concentrations that remained following the 1989 remedial excavation activities, or groundwater monitoring well installations where soil data had not been collected. Six borings were advanced adjacent to or between historically impacted soil sample points OP-1, OP-3, OP-5, OP-7, OP-12, OP-14, OP-16, OP-23, and OP-24. Eight borings were advanced adjacent to or between historically impacted groundwater monitoring wells MW-1, MW-6, MW-8, MW-10, MW-11, and MW-13 through MW-16. One additional boring was proposed next to MW-9, but could not be completed due to safety concerns regarding its location underneath high voltage transmission lines and its proximity to a 16-inch PSE high pressure gas line. Figures 3 depicts the locations of all the soil boring locations.

Quantitative laboratory analysis indicated concentrations of total petroleum hydrocarbons as gasoline (TPH-G) in excess of MTCA Method A Cleanup Levels in soil samples CB-4-6, CB-4-15, CB-5-5, CB-5-10, CB-5-15, CB-5-20, CB-6-15, CB-6-18, and CB-6-20. TPH-G concentrations in excess of MTCA Method A Cleanup Levels ranged from 35 milligrams per kilogram (mg/kg) to 1,300 mg/kg. Benzene concentrations in excess of MTCA Method A Cleanup Levels were detected in soil samples CB-4-6, CB-4-20, CB-5-5, CB-5-10, CB-5-15, and CB-6-18. Benzene concentrations ranged from 0.034 mg/kg to 0.39 mg/kg. Concentrations of toluene, ethylbenzene, xylenes, total petroleum hydrocarbons as diesel (TPH-D), total petroleum hydrocarbons as oil (TPH-O), and total lead were not detected in excess of MTCA Method A Cleanup Levels.

Antea Group elected to develop Method B Cleanup Levels for soil at the Site, as allowed under the MTCA Regulation and Statue (WAC 173-340-705). Confirmatory soil samples CB-4-6, CB-5-10, CB-6-18, and CB-6-20 were analyzed for extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH). The EPH/VPH values were used in calculating a Site-specific Method B Cleanup Level for TPH. Ecology's *Guidance for Remediation of Petroleum Contaminated Site* and *Workbook Tools for Calculating Soil and Ground Water Cleanup Levels under the Model Toxic Control Act Cleanup Regulation* were referenced in calculating the Method B Cleanup Level. Per the guidance documents, the laboratory method detection limits (MDLs) were used in the Method B calculations. Approximate

MDL results with the "J" qualifier were used as the value reported and EPH/VPH equivalent carbon (EC) fractions that were not detected above MDLs were assigned ½ the detection limit. The TPH Method B Cleanup Levels for soil samples CB-4-6, CB-5-10, CB-6-18, and CB-6-20 were calculated at 3,255 mg/kg, 2,339 mg/kg, 3,535 mg/kg, and 2,219 mg/kg, respectively. The median cleanup level for the four samples is 2,797 mg/kg. The calculated Method B Cleanup Level for TPH in soil at the Site is therefore 2,797 mg/kg. According to Ecology's Cleanup Level and Risk Calculation (CLARC) Data Tables, the Method B Cleanup Levels for BTEX in soil are 18.2 mg/kg, 6,400 mg/kg, 8,000 mg/kg, and 16,000 mg/kg, respectively. All soil samples collected at the Site between August 12 and 13, 2015, do not contain concentrations of TPH or BTEX in excess of the MTCA Method B Cleanup Level for direct human contact for the Site.

Soil analytical results are summarized in Tables 1 and 2. The Soil Analytical Data Map is presented as Figure 3. Additional information regarding the August 12 and 13, 2015, Subsurface Investigation may be found in Antea Group's *Subsurface Investigation Report* dated November 18, 2015.

- ***"Because the Site does not qualify for the exclusion, Site Specific Terrestrial Ecological Evaluation must be performed for the Site".***

ANTEA GROUP Response: A Site-specific Terrestrial Ecological Evaluation (TEE) was completed by Ecological Land Services, Inc. (ELS). On October 29, 2013, ELS conducted a Site visit to gather current on- and off-Site information to supplement background information compiled from various sources. A Site-specific TEE was conducted according to the requirements in WAC 173-340-7493. The Site-specific TEE noted the following issues, which have been addressed:

(i) Chemicals of ecological concern – the chemicals of potential concern include those commonly associated with automobile fuel: gasoline, diesel, oil, benzene, ethylbenzene, toluene, xylenes, and lead. The TPH-G indicator soil concentrations for the protection of soil biota and wildlife are 100 mg/kg and 5,000 mg/kg, respectively. Soils at the Site generally do not exceed the concentrations for the potential chemicals of concern listed in Table 749-3 with three exceptions:

- CB-4: TPH-G at 6 feet bgs (110 mg/kg) – Exceeds 100 mg/kg for soil biota
- CB-5: TPH-G at 5 feet bgs (180 mg/kg) – Exceeds 100 mg/kg for soil biota
  TPH-G at 10 feet bgs (1,300 mg/kg) – Exceeds 100 mg/kg for soil biota
  TPH-G at 15 feet bgs (150 mg/kg) – Exceeds 100 mg/kg for soil biota
- CB-6: TPH-G at 20 feet bgs (150 mg/kg) – Exceeds 100 mg/kg for soil biota

However, ELS concluded that the depth to groundwater in the general location of CB-4, CB-5, and CB-6 ranged between 14 and 21 feet bgs, therefore the residual soil with elevated TPH-G concentrations

is seldom, if ever, exposed to groundwater. Most likely, the gasoline range organics in the soil will biodegrade without increased risk to human heal or the terrestrial environment.

(ii) Exposure Pathways – ELS did not identify any complete exposure pathways to expose terrestrial plants or animals to the potential chemicals of concern associated with petroleum products in soils. Soils at the site are below MTCA Method B Cleanup Levels for soil, groundwater is clean (below MTCA Method A Drinking Water Standards) in down-gradient monitoring wells, and exposure to residual soils in the vicinity of the previously excavated area are inaccessible to plants, soil biota, and wildlife. Nearly the entire Site is covered with asphalt, building, and sidewalks; which restrict potential exposure to potentially contaminated surface soil and dust.

(iii) Terrestrial ecological receptors of concern – ELS concluded that potential receptors utilizing the subject Site for habitation, forage, reproduction or migration are few and likely limited to passerine birds and small mammals (mice) adapted to developed urban environments. Potential receptors utilizing Foster Park and Green River open water/riparian system include passerine birds, raptors, small mammals, amphibians/reptiles, and waterfowl.

(iv) Toxicological Assessment – ELS concluded that potential receptors are not likely to be significantly impacted by potential chemicals of concern due to the low concentrations in soil/groundwater and the lack of direct exposure pathways.

Based on the analysis completed by ELS, the Site does not pose a threat to the terrestrial environment. The *Terrestrial Ecological Evaluation* report completed by ELS in included in Appendix B.

- ***"To complete the soil vapor pathway investigation, refer to Ecology's "Guidance for Evaluation Soil Vapor Intrusion in Washington State: Investigation and Remedial Action" Review Draft October 2009, Publication No. 09-09-047".***

ANTEA GROUP Response: Upon review of the draft Ecology soil vapor intrusion survey requirements, and per the guidelines issued by the Interstate Technology & Regulatory Council (ITRC) and the United States Environmental Protection Agency (EPA), it is evident that soil and groundwater conditions do not warrant a soil gas survey for the Site.

Washington Department of Ecology Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State

The Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action (Ecology Draft VI Guidance), published by Ecology in 2009, provides guidance for determining whether or not the concentrations of chemicals of concern (COCs) at a given site are capable of posing a threat to indoor air quality. Chapter 2 of this guidance refers the reader to Appendix B for a table listing common VOCs and screening levels

which could cause a threat to indoor air quality and subsequently necessitate further vapor intrusion assessment. Ecology published revisions to this table on April 6, 2015, and has requested that it be used in the place of the table in the 2009 Draft Guidance Document. This table lists the following shallow groundwater screening levels which would necessitate further assessment for the COCs at the Site:

Benzene – 2.40 µg/L
Toluene – 15,600 µg/L
Ethylbenzene – 2,780 µg/L
Total Xylenes – 7,500 µg/L

Based on the groundwater screening values presented in the Ecology Draft VI Guidance and data obtained at the Site (Table 2), further vapor intrusion assessment is not necessary. The toluene, ethylbenzene and total xylenes screening levels have never been exceeded in any groundwater sample collected at the Site, and benzene has not exceeded the screening level in any well since 2009. A copy of historical groundwater monitoring data is included as Appendix C.

ITRC Guidance Document for Petroleum Vapor Intrusion

Ecology recommends the use of the ITRC Guidance Document for Petroleum Vapor Intrusion (ITRC Document) Published in October 2014. This document presents Site conditions which would necessitate vapor intrusion assessment in Chapter 3. Table 3-1 in Chapter 3 provides the following indicators for petroleum vapor intrusion (PVI) screening.

Table 3-1. General LNAPL indicators for PVI screening

Indicator [1]	Comments
Groundwater	
• Benzene: > 1 - 5 mg/L [2,3] • $TPH_{(gasoline)}$: > 30 mg/L[4] • BTEX: > 20 mg/L[5] • Current or historical presence of LNAPL (including sheens) [2,3]	There is not a specific PHC concentration in groundwater that defines LNAPL because of varying product types and degrees of weathering.
Soil	
• Current or historical presence of LNAPL (including sheens, staining) [2,3] • Benzene > 10 mg/kg [2] • $TPH_{(gasoline)}$ > 250 [2] - 500 [5] mg/kg • Ultraviolet fluorescence (UV) or laser induced fluorescence (LIF) fluorescence response in LNAPL range [6] • PID or FID readings > 500 ppm [7]	• The use of TPH soil concentration data as LNAPL indicators should be exercised with caution. • TPH soil concentrations can be affected by the presence of soil organic matter. • TPH soil concentrations are not well correlated with TPH or O_2 soil gas concentrations (Lahvis and Hers 2013b).

Light non-aqueous phase liquid (LNAPL) is not present at the Site, and groundwater data indicates that benzene, toluene, ethylbenzene, xylenes (BTEX compounds), TPH-G, TPH-D, and TPH-O concentrations have been below

Ecology's Model Toxics Control Act (MTCA) Method A Cleanup Levels, respective laboratory method reporting limits (MRLs), and/or the concentrations indicated in Table 3-1 for a minimum of four consecutive quarters.

Recent confirmatory soil sampling indicate TPH-G concentrations in excess of the Table 3-1 screening level of 250 mg/kg are present in two samples (CB-5-10 and CB-6-20). Chapter 3 of the ITRC Document also provides vertical and lateral inclusion zones which are used in determining whether a building is close enough to a petroleum vapor source to be considered for PVI screening. Chapter 3, Section 3 of the ITRC document states that if the building is located within the lateral inclusion zone, then vertical screening distance can be applied. In addition, Chapter 3, Section 3 defines the vertical screening distance as 5 feet from dissolved-phase sources and 15 feet from LNAPL sources at petroleum UST sites. As previously stated, LNAPL is not present at the Site and groundwater at the Site does not contain dissolved-phase concentrations of petroleum hydrocarbons which necessitate vapor intrusion assessment. The lateral inclusion zone is defined as the area from the edge of the petroleum vapor source to the edge of a building foundation. As defined in section 3.1.5, the lateral and vertical screening distances should be approximately the same, and a conservative 30-foot lateral inclusion distance may be considered appropriate to incorporate the uncertainty in regards to the location of the lateral edge of a contaminant plume. At the Site, there is approximately 90 feet of lateral separation from the Valley Freeway building to the nearest identified soil contamination, and the detected soil impacts are greater than five feet bgs. Based on this distance, and the fact that groundwater concentrations are below MTCA Method A Cleanup Levels and the Table 3.1 indicators for vapor screening, further PVI assessment is not warranted.

The screening levels and distances outlined in the ITRC guidance document were based on several empirical studies and the values are conservatively defined. Based on the guidance presented in the ITRC Document, sufficient data is available for the Site to determine that no further evaluation of the PVI pathway is necessary.

- ***"Environmental sampling data for all cleanup sites must be submitted both in printed and electronic form. The electronic data can be submitted using Ecology's EIM Environmental Information Management we page http://www.ecy.wa.gov/eim/".***

ANTEA GROUP Response: As of February 25, 2016, all data has been submitted and accepted into Ecology EIM database.

CONCLUSIONS

It is in Antea Group's professional opinion that cleanup activities at this Site have been performed in compliance with the regulations set forth by the MTCA Cleanup Regulation, and sufficient sampling and modeling has been performed in order to effectively demonstrate that the Site does not contain petroleum hydrocarbon contamination in excess of the applicable cleanup levels for the Site. Antea Group believes the data submitted in this response letter satisfy all recommendations in Ecology's *Opinion Letter* and respectfully requests a NFA determination for the Site.

If you have any questions, or if you require additional information concerning this letter, please contact me at (425) 498-7711.

Sincerely,

Megan Richard
Project Manager

Date: March 24, 2016

Bryan Taylor
Consultant

Date: March 24, 2016

Matthew Miller, LG
Senior Project Manager

State of Washington 532 Licensed Geologist Matthew Miller

Date: March 24, 2016

cc: Mr. Paul Supple, Atlantic Richfield Company (Electronic Copy – Enfos Upload)
Ms. Kelli Gustaf, OPLC, Renton, WA (Electronic Copy)
File, Antea Group

Enclosures

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Appendix A	Opinion Letter – June 12, 2013
Appendix B	Site Specific Terrestrial Ecological Evaluation
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Tables

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St & 74th Ave S
Kent, WA

CONSTITUENT		B	T	E	X	TPH	Lead
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date						
MTCA METHOD B CLEANUP LEVELS		**18.2**	**6400**	**8000**	**1600**	**2797**	**--**
CB-1-20	8/12/2015	< 0.027	< 0.067	< 0.067	< 0.067	< 105.1	2.7
CB-2-15	8/12/2015	< 0.027	0.037 J	< 0.069	< 0.069	< 104.2	2.1
CB-3-15	8/12/2015	< 0.029	< 0.072	< 0.072	< 0.072	< 113.7	2.5
CB-4-6	8/12/2015	0.041	0.030 J	0.027 J	0.23	580	33
CB-4-15	8/12/2015	0.012 J	0.021 J	0.018 J	0.050 J	482	4.0
CB-4-20	8/12/2015	0.39	0.040 J	1.4	4.1	< 155	13
CB-5-5	8/12/2015	0.15	0.057	0.19	0.72	590	23
CB-5-10	8/12/2015	0.037	0.036 J	0.12	0.19	2260	5.6
CB-5-15	8/12/2015	0.034	0.014 J	0.44	0.058 J	807	4.0
CB-5-16	8/12/2015	< 0.021	< 0.054	< 0.054	0.014 J	< 121	2.6
CB-5-20	8/12/2015	0.020 J	0.007 J	0.48	3.7	< 169	6.3
CB-6-10	8/13/2015	0.0059 J	0.018 J	0.0029 J	0.0051 J	< 84.7	2.9
CB-6-15	8/13/2015	0.039	0.023 J	0.027 J	0.17	331	15

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St & 74th Ave S
Kent, WA

CONSTITUENT		B	T	E	X	TPH	Lead
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date						
MTCA METHOD B CLEANUP LEVELS		**18.2**	**6400**	**8000**	**1600**	**2797**	**--**
CB-6-18	8/13/2015	0.06	0.034 J	0.11	0.24	469	16
CB-6-20	8/13/2015	< 0.021	0.040 J	0.28	0.065	683	4.8
CB-7-15	8/13/2015	< 0.029	0.032 J	0.0051 J	0.018 J	< 105	3.8
CB-7-20	8/13/2015	< 0.05	0.0098 J	0.0086 J	0.029 J	< 121	3.9
CB-8-10	8/13/2015	< 0.0073 J	< 0.084	< 0.084	< 0.084	< 114.9	6.8
CB-9-10	8/13/2015	< 0.0067 J	0.0066 J	< 0.076	< 0.076	< 114.5	4.4
CB-9-15	8/13/2015	< 0.022	< 0.055	< 0.055	< 0.055	< 107	2.7
CB-10-8	8/13/2015	< 0.026	0.012 J	< 0.064	< 0.064	< 98.4	3.2
CB-11-15	8/13/2015	< 0.023	< 0.057	< 0.057	< 0.057	< 105	4.0
CB-12-10	8/13/2015	< 0.024	< 0.061	< 0.061	< 0.061	< 108	3.3
CB-13-10	8/13/2015	< 0.024	< 0.06	< 0.06	< 0.06	< 152	2.0
CB-14-9	8/13/2015	< 0.029H	< 0.072H	< 0.072H	< 0.072H	< 108.6	5.0

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St & 74th Ave S
Kent, WA

CONSTITUENT		B	T	E	X	TPH	Lead
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date						
MTCA METHOD B CLEANUP LEVELS		**18.2**	**6400**	**8000**	**1600**	**2797**	**--**

Notes:
B = Benzene
T = Toluene
E = Ethyl benzene
X = Xylenes, Total
TPH = Total petroleum hydrocarbons
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
mg/kg = Milligrams per kilogram (ppm)
MTCA = Model Toxics Control Act
-- = No MTCA Method B Cleanup level for lead
Results in **bold** indicate concentrations in excess of MTCA Method B Cleanup Levels
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate valve.
H = Sample was prepped or analyzed beyond the specified holding time

Table 2
Extended Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

CONSTITUENT		Aliphatic C6-C8	Aliphatic C10-C12	Aliphatic C10-C12	Aliphatic C12-C16	Aliphatic C16-C21	Aliphatic C21-C34	Aliphatic C5-C6	Aliphatic C8-C10	Aromatic C12-C16	Aromatic C16-C21	Aromatic C21-C34	Aromatic C8-C10	Aromatic C10-C12	Aromatic C10-C12	Total VPH
		VPH	VPH	EPH	EPH	EPH	EPH	VPH	VPH	EPH	EPH	EPH	VPH	VPH	EPH	VPH
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample ID	Date															
CB-4-6	8/12/2015	15	< 6.4	< 63F2F1	< 63F2F1	< 63F2F1	74 F2F1	< 6.4	19	< 63F2F1	< 63F2F1	81 F2F1	12	11	< 63F2F1	100
CB-5-10	8/12/2015	< 70	130	130	340	170	75	< 70	110	230	230	180	< 70	200	78	890
CB-6-18	8/13/2015	< 5.7	5.8	< 6.0	10	11	36	< 5.7	6.0	< 6.0F1	7.6	19	< 5.7	9.6	< 6.0F1	55
CB-6-20	8/13/2015	< 14	27	17	49	28	< 6.4	< 14	30	21	22	< 6.4	17	74	9.4	280

Figures

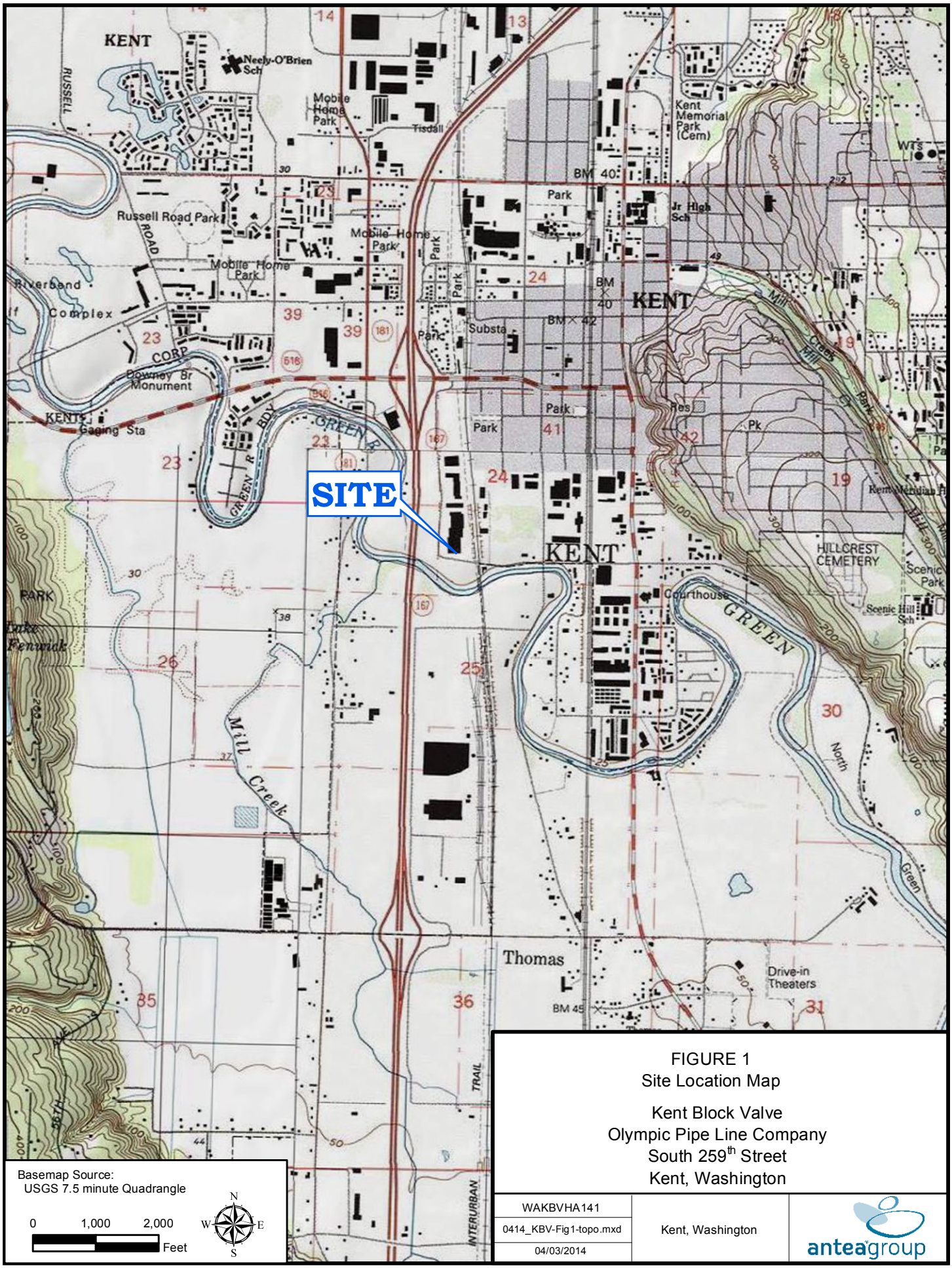
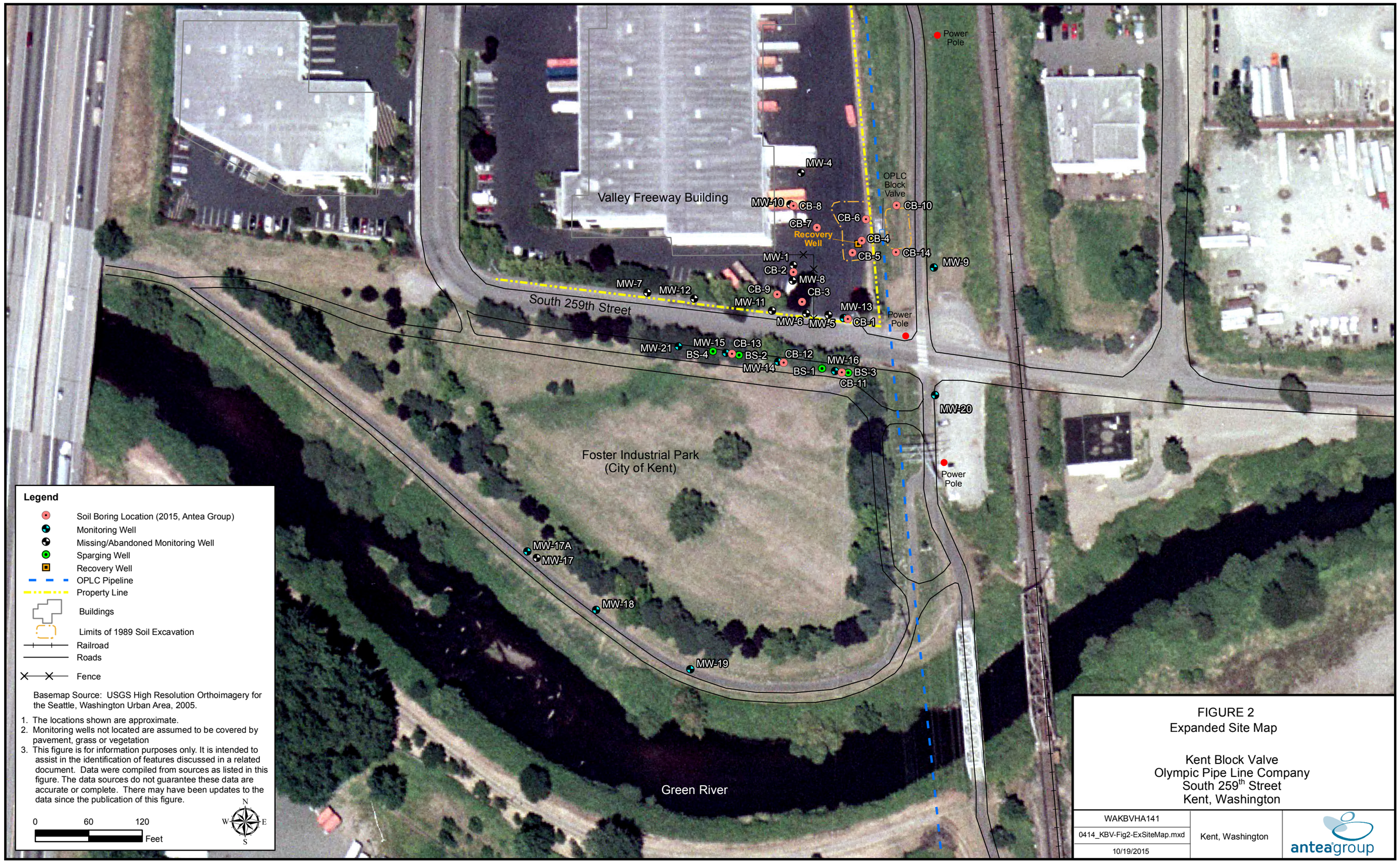


FIGURE 1
Site Location Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	anteagroup
0414_KBV-Fig1-topo.mxd		
04/03/2014		



Legend

- Soil Boring Location (2015, Antea Group)
- Monitoring Well
- Missing/Abandoned Monitoring Well
- Sparging Well
- Recovery Well
- OPLC Pipeline
- Property Line
- Buildings
- Limits of 1989 Soil Excavation
- Railroad
- Roads
- Fence

Basemap Source: USGS High Resolution Orthoimagery for the Seattle, Washington Urban Area, 2005.

1. The locations shown are approximate.
2. Monitoring wells not located are assumed to be covered by pavement, grass or vegetation
3. This figure is for information purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure.

0 60 120 Feet

N W E S

FIGURE 2
Expanded Site Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	antea group
0414_KBV-Fig2-ExSiteMap.mxd		
10/19/2015		

CB-8	
Date	8/13/2015
Depth	10 feet
B	< 0.0073 J
T	< 0.084
E	< 0.084
X	< 0.084
TPH	< 114.9
Lead	6.8

CB-7		
Date	8/13/2015	8/13/2015
Depth	15 feet	20 feet
B	< 0.029	< 0.05
T	0.032 J	0.0098 J
E	0.0051 J	0.0086 J
X	0.018 J	0.029 J
TPH	< 105	< 121
Lead	3.8	3.9

CB-10	
DATE	8/13/2015
DEPTH	8 feet
B	< 0.026
T	0.012 J
E	< 0.064
X	< 0.064
TPH	< 98.4
Lead	3.2

CB-5					
Date	8/12/2015	8/12/2015	8/12/2015	8/12/2015	8/12/2015
Depth	5 feet	10 feet	15 feet	16 feet	20 feet
B	0.15	0.037	0.034	< 0.021	0.020 J
T	0.057	0.036 J	0.014 J	< 0.054	0.007 J
E	0.19	0.12	0.44	< 0.054	0.48
X	0.72	0.19	0.058 J	0.014 J	3.7
TPH	590	2,260	807	< 121	< 169
Lead	23	5.6	4.0	2.6	6.3

CB-6				
Date	8/13/2015	8/13/2015	8/13/2015	8/13/2015
Depth	10 feet	15 feet	18 feet	20 feet
B	0.0059 J	0.039	0.06	< 0.021
T	0.018 J	0.023 J	0.034 J	0.040 J
E	0.0029 J	0.027 J	0.11	0.28
X	0.0051 J	0.17	0.24	0.065
TPH	< 84.7	331	469	683
Lead	2.9	15	16	4.8

CB-4			
Date	8/12/2015	8/12/2015	8/12/2015
Depth	6 feet	15 feet	20 feet
B	0.041	0.012 J	0.39
T	0.030 J	0.021 J	0.040 J
E	0.027 J	0.018 J	1.4
X	0.23	0.050 J	4.1
TPH	580	482	< 155
Lead	33	4.0	13

CB-14	
Date	8/13/2015
Depth	9 feet
B	< 0.029H
T	< 0.072H
E	< 0.072H
X	< 0.072H
TPH	< 108.6
Lead	5.0

CB-2	
Date	8/12/2015
Depth	15 feet
B	< 0.027
T	0.037 J
E	< 0.069
X	< 0.069
TPH	< 104.2
Lead	2.1

CB-9		
Date	8/13/2015	8/13/2015
Depth	10 feet	15 feet
B	< 0.0067 J	< 0.022
T	0.0066 J	< 0.055
E	< 0.076	< 0.055
X	< 0.076	< 0.055
TPH	< 114.5	< 107
Lead	4.4	2.7

CB-3	
Date	8/12/2015
Depth	15 feet
B	< 0.029
T	< 0.072
E	< 0.072
X	< 0.072
TPH	< 113.7
Lead	2.5

CB-1	
Date	8/12/2015
Depth	20 feet
B	< 0.027
T	< 0.067
E	< 0.067
X	< 0.067
TPH	< 105.1
Lead	2.7

CB-13	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.06
E	< 0.06
X	< 0.06
TPH	< 152
Lead	2.0

CB-12	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.061
E	< 0.061
X	< 0.061
TPH	< 108
Lead	3.3

CB-11	
DATE	8/13/2015
DEPTH	15 feet
B	< 0.023
T	< 0.057
E	< 0.057
X	< 0.057
TPH	< 105
Lead	4.0

Legend

- Soil Boring Location (2015, Antea Group)
- Soil Sample Location (1989, GeoEngineers)
- Monitoring Well
- Missing/Abandoned Monitoring Well
- Limits of Excavation
- OPLC Pipeline
- Property Line
- Buildings
- Roads
- Fence

Sample ID	MTCA Method
Date	B Cleanup
Depth	Levels
B	18.2
T	6,400
E	8,000
X	1,600
TPH	2,797
Lead	--

Notes:
B = Benzene
T = Toluene
E = Ethyl benzene
X = Xylenes, Total
TPH = Total petroleum hydrocarbons
-- = No MTCA Method B Cleanup Level for lead
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
mg/kg = Milligrams per kilogram (ppm)
MTCA = Model Toxics Control Act
Results in bold indicate concentrations in excess of MTCA Method B Cleanup Levels
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate valve.
H = Sample was prepped or analyzed beyond the specified holding time

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

1. The locations shown are approximate.
2. Monitoring wells not located are assumed to be covered by pavement, grass or vegetation
3. This figure is for information purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure.

0 15 30 Feet

N W E S

FIGURE 3
Soil Analytical Data Map
August 12 & 13, 2015

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVDA131	Kent, Washington	antea group
0316_KBV-Fig-SA.mxd		
03/10/2016		

0316_KBV-Fig-SA.mxd

Appendix A

Opinion Letter –June 12, 2013

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 12, 2013

Mr. Bryan Taylor
Antea Group
4006 148th Avenue NE
Redmond, WA 98052

Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Investigation for the Following Hazardous Waste Site:

- Name: Olympic Pipe Line Co. Kent
- Address: 74th Avenue South and South 259th Street, Kent
- Facility/Site No.: 2401
- VCP No.: NW2705
- Cleanup Site No.: 3070

Dear Mr. Taylor:

Thank you for submitting documents regarding your remedial investigation for the Olympic Pipe Line Co. Kent (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does

not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your remedial investigation:

1. Olympic Pipe Line Company Kent Block Valve Remedial Investigation Report, dated January 10, 2013, prepared by Antea Group.

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Confirmational soil sampling throughout the facility to assess current soil conditions is required. Additionally, current soil conditions between the block valve property and the Valley Freeway Building remain unknown.
- Because the Site does not qualify for the exclusion, Site Specific Terrestrial Ecological Evaluation must be performed for this Site.
- To complete the soil vapor pathway investigation, refer to Ecology's "*Guidance for Evaluation Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*" Review Draft October 2009, Publication No. 09-09-047.
- Environmental sampling data for all cleanup sites must be submitted both in printed and electronic form. The electronic data can be submitted using Ecology's EIM Environmental Information Management web page http://www.ecy.wa.gov/eim/.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does**

not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (425) 649-4446 or by email at damy461@ecy.wa.gov.

Sincerely,

Dale Myers

Dale Myers
Site Manager
Toxics Cleanup Program

Appendix B

Site Specific Terrestrial Ecological Evaluation

ECOLOGICAL LAND SERVICES, INC.

February 17, 2016

Mr. Megan Richard
Antea®Group
4006 148th Avenue NE
Redmond, WA 98052

RE: Terrestrial Ecological Evaluation – Olympic Pipe Line Company - Kent Block Valve - Kent, WA.

Dear Ms. Richards,

Ecological Land Services, Inc. (ELS) has completed a Terrestrial Ecological Evaluation (TEE) for an active block valve facility in Kent, Washington (see attached Figures) owned and operated by Olympic Pipe Line Company (OPLC). This TEE was conducted under the rules, guidelines and policy of the Voluntary Cleanup Program (VCP) administered by the Washington Department of Ecology (WDOE). ELS visited the subject site on October 29, 2013 to gather current on-site and off-site information to supplement background information compiled from various sources (see references).

SITE DESCRIPTION

Facility/Site No: 2401
VCP No.: NW2705
Address: South 259th Street & 74th Avenue South, Kent, WA 98032
Legal: NW1/4 Section 25, Township 22 North, Range 4 East, W.M. (Parcel# 0006600028, 0006600029, & 2611000020)
Coord.: 47.37038, -122.24067
Current Owner: City of Kent, ICON Owner Pool 1West, LLC
Current Status: Active pipeline block valve facility
Current Consultant: Antea®Group
Contact Person: Megan Richard 425-498-7711

ECOLOGICAL DESCRIPTION

The subject site consists of an active block valve facility on the OPLC trunk line extending in a north-south alignment. The block valve site is bordered by open space/pedestrian trail to the east, South 259th Street and Foster Park to the south, and a warehouse facility to the west. The open space areas to the east and south are actively maintained (mowing, pruning, & fertilization) and are heavily used by walkers, hikers, bikers, and pet walkers. Green river is located approximately 540 feet south of the block valve facility. This reach of Green River is typed as a Type S – shoreline stream using the Washington State Department of Natural Resources (WADNR) water typing (WAC 222-16-030).

Listed Species and Priority Habitats
According to the Washington State Department of Fish and Wildlife (WDFW) Priority Habitat and species mapping website, no listed species or priority habitats are mapped at the subject site. Green River provides habitat for many listed fish species including: bull trout, Chinook salmon, chum salmon, cutthroat trout, coho salmon, pink salmon, and steelhead. A great blue heron breeding area is located approximately 1,160 feet southwest of the block valve facility, a green heron colony is mapped approximately 1,530 feet south of the block valve facility, and waterfowl concentrations are mapped approximately 1,040 feet southeast of the block valve facility.

TEE PROCESS

Step 1 – Does site qualify for an exclusion from further evaluation?

NO (See Exhibit A – Terrestrial Ecological Evaluation Process – Primary Exclusions)

Step 2 – Does the site qualify for a Simplified Evaluation?

NO (See Exhibit B – Terrestrial Ecological Evaluation Process - Simplified or Site-Specific Evaluation?)

Step 3 – Is there a problem identified during the Site Specific Evaluation?

NO (See Exhibit C – Terrestrial Ecological Evaluation Form)

Conclusions

Based on a thorough review of existing site information coupled with a visit to the site on October 29, 2013; ELS has concluded that the subject site required a Site-Specific Terrestrial Ecological Evaluation (TEE). The subject site did not qualify for an Exclusion (WAC 173-340-7491) due to an approximately 8 acre open space area (Foster Park and Green River riparian area) located immediately south of the subject site (see Exhibit A). The subject site also did not qualify for a Simplified TEE (WAC 173-340-7492) due to the open space/natural area south of the site (see Exhibit B).

A Site-Specific TEE was conducted according to the requirements outlined in WAC 173-340-7493. The first step is to identify if there is a problem at the subject site using the following issues: (1) chemicals of ecological concern, (2) exposure pathways, (3) terrestrial ecological receptors of concern and (4) toxicological assessment.

Chemicals of Concern – the chemicals of potential concern include those commonly associated with automobile fuel: gasoline, diesel, oil, benzene, ethyl benzene, toluene, xylene and lead. The following table includes chemicals of concern as summarized from Table 749-3:

Table 749-3 (In-Part): Ecological Indicator Soil Concentrations for Protection of Terrestrial Plants and Animals.

Hazardous Substance	Plants (mg/kg)	Soil Biota (mg/kg)	Wildlife (mg/kg)
Lead	50	500	118
Toluene	200	---	---
Gasoline Range Organics	---	100	5000
Diesel Range Organics	---	200	6000

Soils at the subject site generally do not exceed the concentrations for the potential chemicals of concern listed in the above table with three exceptions:

CB-4: TPH-G at 6'bgs (110 mg/kg) – exceeds 100 mg/kg for soil biota

CB-5: TPH-G at 5'bgs (180 mg/kg) – exceeds 100 mg/kg for soil biota
TPH-G at 10'bgs (1300 mg/kg) – exceeds 100 mg/kg for soil biota
TPH-G at 15'bgs (150 mg/kg) – exceeds 100 mg/kg for soil biota

CB-6: TPH-G at 20'bgs (350 mg/kg) – exceeds 100 mg/kg for soil biota

Depth to groundwater in the general location of CB-4, -5, & -6 ranges between 14 and 21 feet bgs so the residual soil with elevated TPH-G concentrations is seldom, if ever, exposed to groundwater. Most likely, the gasoline range organics in the soil will biodegrade without increased risk to human health or the terrestrial environment.

Exposure Pathways – ELS did not identify any complete exposure pathways to expose terrestrial plants or animals to the potential chemicals of concern associated with petroleum products in soils. Soils at the site are below MTCA Method B Cleanup Levels for soil, groundwater is clean in down-gradient monitoring wells, and exposure to residual soils in the vicinity of the previous excavated area are inaccessible to plants, soil biota and wildlife. Nearly the entire site is covered with asphalt, buildings and sidewalks; which restrict potential exposure to potentially contaminated surface soil and dust.

Terrestrial Ecological Receptors of Concern – potential receptors utilizing the subject site for habitation, forage, reproduction or migration are few and likely limited to passerine birds and small mammals (mice) adapted to developed urban environments. Potential receptors utilizing Foster Park and the Green River open water/riparian system include passerine birds, raptors, small mammals, amphibians/reptiles, and waterfowl.

Toxicological Assessment – potential receptors are not likely to be significantly impacted by potential chemicals of concern due to the low concentrations in soil/groundwater and the lack of direct exposure pathways.

It is our opinion that residual soil contamination from petroleum products at the subject site is not a threat to the terrestrial environment in the vicinity of the subject site. The majority of the subject

site is covered with impervious asphalt/concrete, which restricts the potential exposure of soil to receptors. Past soil sample analyses indicate the site soils are mostly well below MTCA Method A Soil Cleanup Levels as well as below concentrations impacting plants and wildlife. Soil samples from CB-4, -5, & -6 had elevated levels of benzene and TPH-G above MTCA Method A Soil Cleanup Levels and levels of TPH-G above levels considered save for soil biota. That said, benzene and TPH-G are considered volatile compounds that are naturally degraded and broken down in the natural environment. It appears that contaminated soils in the vicinity of CB-4, -5, & -6 are at a sufficient depth, capped with asphalt, and not migrating outside of the former excavated area. Based on these facts, it is our opinion that the subject site, in its current condition, does not pose a risk to the terrestrial environment.

If you have any questions contact us at (360) 578-1371.

Sincerely,

Timothy J. Haderly
Senior Ecologist/Principal

Attachments

Figures & Tables

Figure 1 – Site Location Map
Figure 3 – Soil Analytical Data Map
Table 1 – Soil Analytical Data

Exhibit A

Terrestrial Ecological Evaluation Process – Primary Exclusions

Exhibit B

Terrestrial Ecological Evaluation Process – Simplified or Site-Specific Evaluation

Exhibit C

Terrestrial Ecological Evaluation Form

References

Google Earth. *Aerial Photographs*. 1990 to 2015.

Soil Conservation Service. *Hydric Soils for Washington*. Online document http://www.statlab.iastate.edu:80/soils/hydric/wa/html. Accessed January 2016.

U.S.D.A. Natural Resources Conservation Service (NRCS). 2012. *Hydric Soils List for Washington.* Online document <http://soils.usda.gov/use/hydric/lists/state.html>. Accessed January 2016.

U. S. Fish & Wildlife Service (USFWS). *National Wetlands Inventory*. http:www.wetlandsfws.er.usgs.gov/NWI/index.html. Accessed January 2016.

Washington Administrative Code (WAC). *WAC 173-3490-7490 thru -7494.* Filed 2/12/2001, effective 8/15/2001.

Washington Department of Ecology (WDOE). *Voluntary Cleanup Program.* http://www.ecy.wa.gov/programs/tcp/vcp/Vcpmain.htm. Accessed January 2016.

Washington Department of Fish and Wildlife (WDFW). *Priority Habitats and Species (PHS) on the Web*. http://wdfw.wa.gov/mapping/phs/disclaimer.html. Accessed January 2016.

Washington Department of Natural Resources (WDNR). *Stream Typing Map.* http://www3.wadnr.gov/dnrapp5/website/fpars/viewer.htm. Accessed January 2016.

Figures

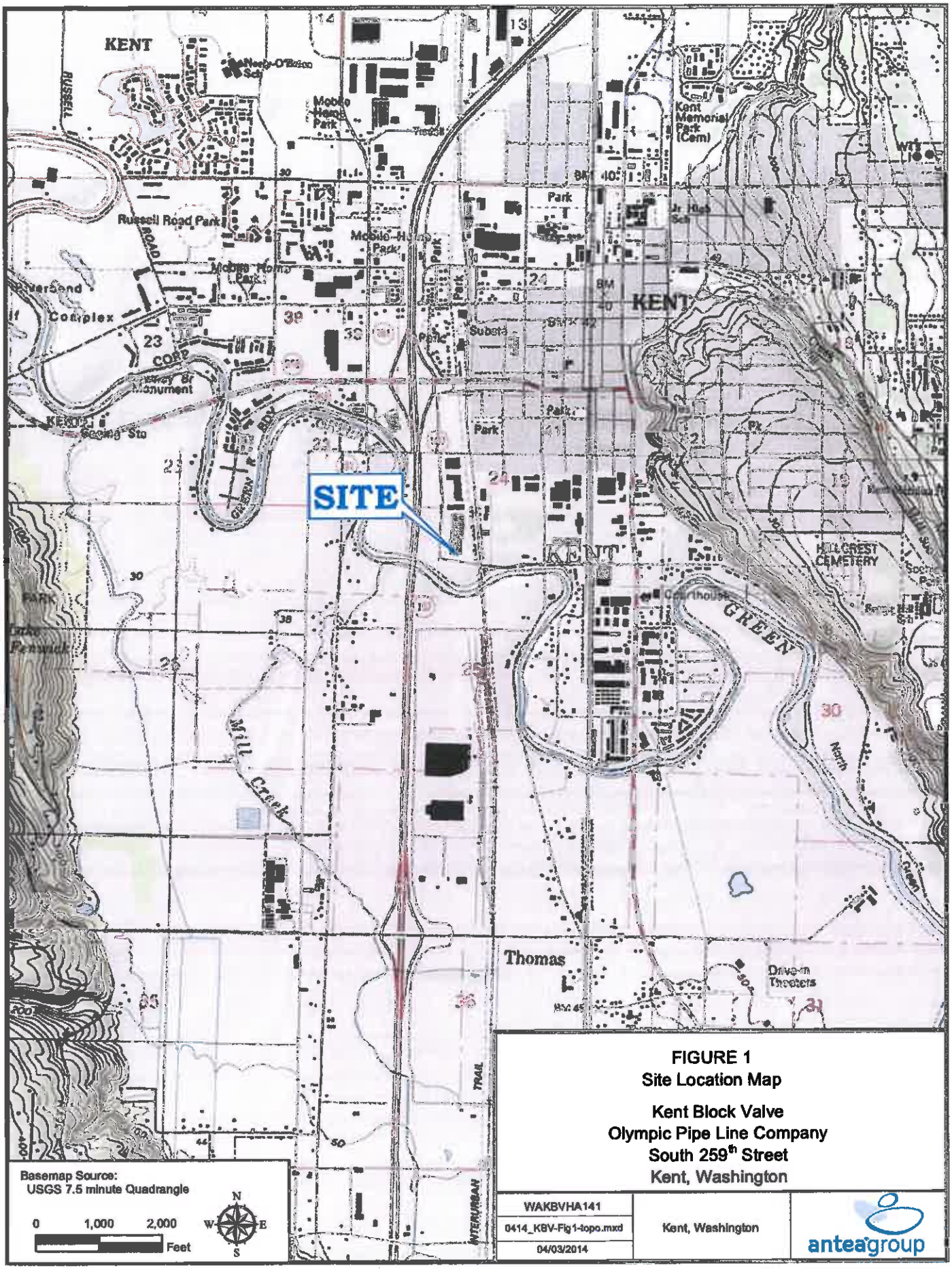
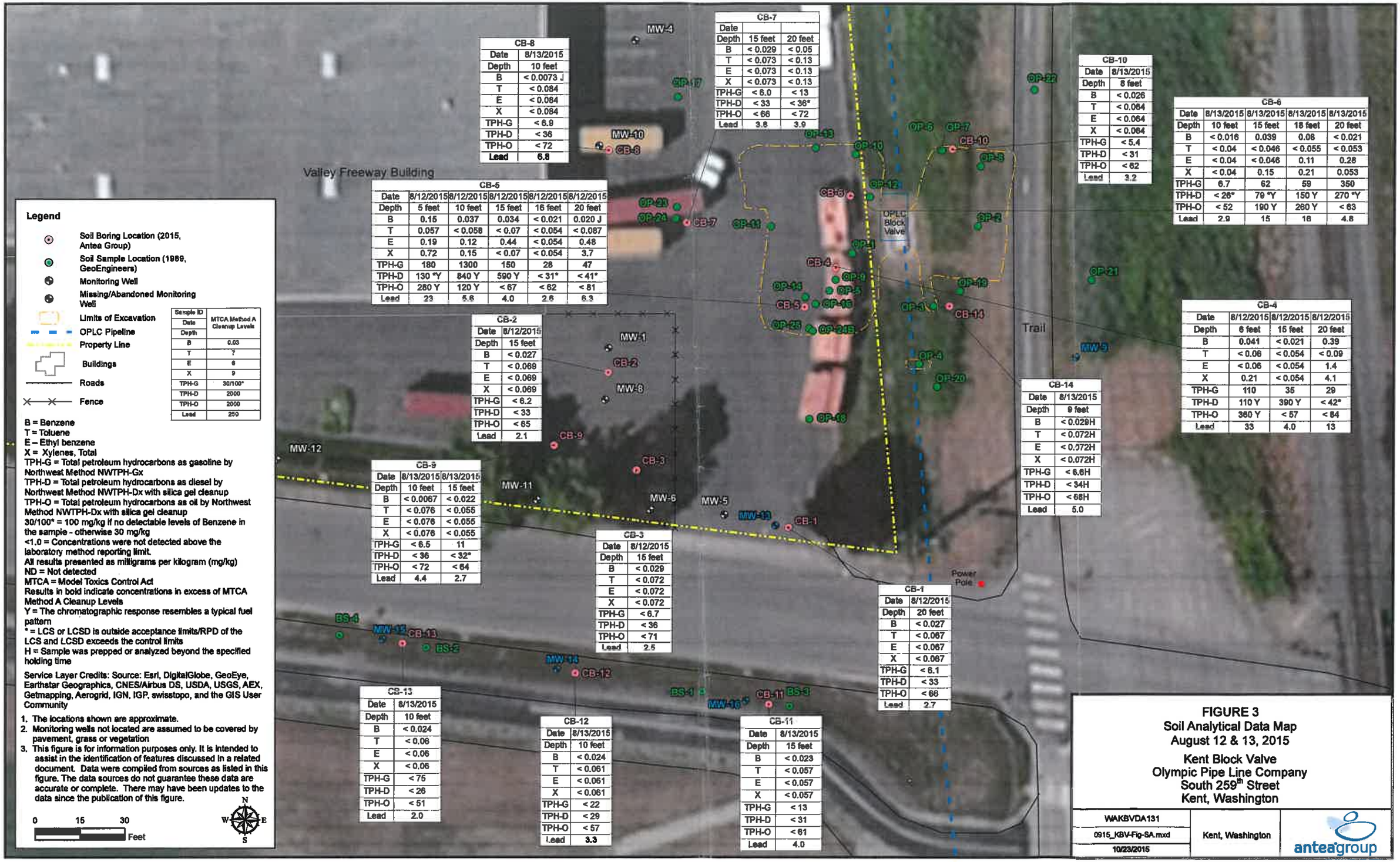


FIGURE 1
Site Location Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	anteagroup
0414_KBV-Fig1-topo.mxd		
04/03/2014		



Legend

- Soil Boring Location (2015, Antea Group)
- Soil Sample Location (1989, GeoEngineers)
- Monitoring Well
- Missing/Abandoned Monitoring Well
- Limits of Excavation
- OPLC Pipeline
- Property Line
- Buildings
- Roads
- Fence

Sample ID	MTCA Method A Cleanup Levels
Date	
Depth	
B	0.03
T	7
E	6
X	9
TPH-G	30/100*
TPH-D	2000
TPH-O	2000
Lead	250

B = Benzene
T = Toluene
E – Ethyl benzene
X = Xylenes, Total
TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx
TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx with silica gel cleanup
TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx with silica gel cleanup
30/100* = 100 mg/kg if no detectable levels of Benzene in the sample - otherwise 30 mg/kg
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
All results presented as milligrams per kilogram (mg/kg)
ND = Not detected
MTCA = Model Toxics Control Act
Results in bold indicate concentrations in excess of MTCA Method A Cleanup Levels
Y = The chromatographic response resembles a typical fuel pattern
* = LCS or LCSD is outside acceptance limits/RPD of the LCS and LCSD exceeds the control limits
H = Sample was prepped or analyzed beyond the specified holding time

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

1. The locations shown are approximate.
2. Monitoring wells not located are assumed to be covered by pavement, grass or vegetation
3. This figure is for information purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure.

0 15 30 Feet

N W E S

CB-8	
Date	8/13/2015
Depth	10 feet
B	< 0.0073 J
T	< 0.084
E	< 0.084
X	< 0.084
TPH-G	< 6.9
TPH-D	< 36
TPH-O	< 72
Lead	6.8

CB-7		
Date		
Depth	15 feet	20 feet
B	< 0.029	< 0.05
T	< 0.073	< 0.13
E	< 0.073	< 0.13
X	< 0.073	< 0.13
TPH-G	< 6.0	< 13
TPH-D	< 33	< 36*
TPH-O	< 66	< 72
Lead	3.8	3.9

CB-10	
Date	8/13/2015
Depth	8 feet
B	< 0.026
T	< 0.064
E	< 0.064
X	< 0.064
TPH-G	< 5.4
TPH-D	< 31
TPH-O	< 62
Lead	3.2

CB-6				
Date	8/13/2015	8/13/2015	8/13/2015	8/13/2015
Depth	10 feet	15 feet	18 feet	20 feet
B	< 0.016	0.039	0.06	< 0.021
T	< 0.04	< 0.046	< 0.055	< 0.053
E	< 0.04	< 0.046	0.11	0.28
X	< 0.04	0.15	0.21	0.053
TPH-G	6.7	62	59	350
TPH-D	< 26*	79 *Y	150 Y	270 *Y
TPH-O	< 52	190 Y	260 Y	< 63
Lead	2.9	15	16	4.8

CB-5					
Date	8/12/2015	8/12/2015	8/12/2015	8/12/2015	8/12/2015
Depth	5 feet	10 feet	15 feet	16 feet	20 feet
B	0.15	0.037	0.034	< 0.021	0.020 J
T	0.057	< 0.058	< 0.07	< 0.054	< 0.087
E	0.19	0.12	0.44	< 0.054	0.48
X	0.72	0.15	< 0.07	< 0.054	3.7
TPH-G	180	1300	150	28	47
TPH-D	130 *Y	840 Y	590 Y	< 31*	< 41*
TPH-O	280 Y	120 Y	< 67	< 62	< 81
Lead	23	5.6	4.0	2.6	6.3

CB-2	
Date	8/12/2015
Depth	15 feet
B	< 0.027
T	< 0.069
E	< 0.069
X	< 0.069
TPH-G	< 6.2
TPH-D	< 33
TPH-O	< 65
Lead	2.1

CB-4			
Date	8/12/2015	8/12/2015	8/12/2015
Depth	6 feet	15 feet	20 feet
B	0.041	< 0.021	0.39
T	< 0.06	< 0.054	< 0.09
E	< 0.06	< 0.054	1.4
X	0.21	< 0.054	4.1
TPH-G	110	35	29
TPH-D	110 Y	390 Y	< 42*
TPH-O	360 Y	< 57	< 84
Lead	33	4.0	13

CB-14	
Date	8/13/2015
Depth	9 feet
B	< 0.029H
T	< 0.072H
E	< 0.072H
X	< 0.072H
TPH-G	< 6.6H
TPH-D	< 34H
TPH-O	< 66H
Lead	5.0

CB-9		
Date	8/13/2015	8/13/2015
Depth	10 feet	15 feet
B	< 0.0067	< 0.022
T	< 0.076	< 0.055
E	< 0.076	< 0.055
X	< 0.076	< 0.055
TPH-G	< 6.5	11
TPH-D	< 36	< 32*
TPH-O	< 72	< 64
Lead	4.4	2.7

CB-3	
Date	8/12/2015
Depth	15 feet
B	< 0.029
T	< 0.072
E	< 0.072
X	< 0.072
TPH-G	< 6.7
TPH-D	< 36
TPH-O	< 71
Lead	2.5

CB-1	
Date	8/12/2015
Depth	20 feet
B	< 0.027
T	< 0.067
E	< 0.067
X	< 0.067
TPH-G	< 6.1
TPH-D	< 33
TPH-O	< 66
Lead	2.7

CB-13	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.06
E	< 0.06
X	< 0.06
TPH-G	< 75
TPH-D	< 26
TPH-O	< 51
Lead	2.0

CB-12	
Date	8/13/2015
Depth	10 feet
B	< 0.024
T	< 0.061
E	< 0.061
X	< 0.061
TPH-G	< 22
TPH-D	< 29
TPH-O	< 57
Lead	3.3

CB-11	
Date	8/13/2015
Depth	15 feet
B	< 0.023
T	< 0.057
E	< 0.057
X	< 0.057
TPH-G	< 13
TPH-D	< 31
TPH-O	< 61
Lead	4.0

FIGURE 3
Soil Analytical Data Map
August 12 & 13, 2015

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVDA131	Kent, Washington	anteagroup
0915_KBV-Fig-SA.mxd		
10/23/2015		

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O	Lead
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date								
MTCA METHOD A CLEANUP LEVELS		**0.03**	**7**	**6**	**9**	**30/100***	**2000**	**2000**	**250**
CB-1-20	8/12/2015	< 0.027	< 0.067	< 0.067	< 0.067	< 6.1	< 33	< 66	2.7
CB-2-15	8/12/2015	< 0.027	<0.069	< 0.069	< 0.069	< 6.2	< 33	< 65	2.1
CB-3-15	8/12/2015	< 0.029	< 0.072	< 0.072	< 0.072	< 6.7	< 36	< 71	2.5
CB-4-6	8/12/2015	**0.041**	< 0.06	< 0.06	0.210	**110**	110 Y	360 Y	33
CB-4-15	8/12/2015	< 0.021	< 0.054	< 0.054	< 0.054	**35**	390 Y	< 57	4.0
CB-4-20	8/12/2015	**0.39**	< 0.090	1.4	4.1	29	< 42*	< 84	13
CB-5-5	8/12/2015	**0.15**	0.057	0.19	0.72	**180**	130 *Y	280 Y	23
CB-5-10	8/12/2015	**0.037**	< 0.058	0.12	0.15	**1300**	840 Y	120 Y	5.6
CB-5-15	8/12/2015	**0.034**	< 0.07	0.44	< 0.07	**150**	590 Y	< 67	4.0
CB-5-16	8/12/2015	< 0.021	< 0.054	< 0.054	< 0.054	28	< 31*	< 62	2.6
CB-5-20	8/12/2015	0.020 J	< 0.087	0.48	3.7	**47**	< 41*	< 81	6.3
CB-6-10	8/13/2015	< 0.016	< 0.04	< 0.04	< 0.04	6.7	< 26*	< 52	2.9
CB-6-15	8/13/2015	**0.039**	< 0.046	< 0.046	0.15	**62**	79 *Y	190 Y	15

Table 1
Soil Analytical Data
Kent Block Valve
S 259th St 74th Ave S
Kent, WA

CONSTITUENT		B	T	E	X	TPH-G	TPH-D	TPH-O	Lead
UNIT		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample I.D.	Date								
MTCA METHOD A CLEANUP LEVELS		**0.03**	**7**	**6**	**9**	**30/100***	**2000**	**2000**	**250**
CB-6-18	8/13/2015	0.06	<0.055	0.11	0.21	59	150 Y	260 Y	16
CB-6-20	8/13/2015	< 0.021	< 0.053	0.28	0.053	350	270 *Y	< 63	4.8
CB-7-15	8/13/2015	< 0.029	< 0.073	< 0.073	< 0.073	< 6.0	< 33	< 66	3.8
CB-7-20	8/13/2015	< 0.05	< 0.13	< 0.13	< 0.13	< 13	< 36*	< 72	3.9
CB-8-10	8/13/2015	< 0.0073 J	< 0.084	< 0.084	< 0.084	< 6.9	< 36	< 72	6.8
CB-9-10	8/13/2015	< 0.0067 J	< 0.076	< 0.076	< 0.076	< 6.5	< 36	< 72	4.4
CB-9-15	8/13/2015	< 0.022	< 0.055	< 0.055	< 0.055	11	< 32*	< 64	2.7
CB-10-8	8/13/2015	< 0.026	< 0.064	< 0.064	< 0.064	< 5.4	< 31	< 62	3.2
CB-11-15	8/13/2015	< 0.023	< 0.057	< 0.057	< 0.057	< 13	< 31	< 61	4.0
CB-12-10	8/13/2015	< 0.024	< 0.061	< 0.061	< 0.061	< 22	< 29	< 57	3.3
CB-13-10	8/13/2015	< 0.024	< 0.06	< 0.06	< 0.06	< 75	< 26	< 51	2.0
CB-14-9	8/13/2015	< 0.029H	< 0.072H	< 0.072H	< 0.072H	< 6.6H	< 34H	< 68H	5.0

Notes:
B = Benzene
T = Toluene
E – Ethyl benzene
X = Xylenes, Total
TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx
TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx with silica gel cleanup
TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx with silica gel cleanup
30/100* = 100 mg/kg if no detectable levels of Benzene in the sample - otherwise 30 mg/kg
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
mg/kg = Milligrams per kilogram (ppm)
MTCA = Model Toxics Control Act
Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels
Y = The chromatographic response resembles a typical fuel patterr
* = LCS or LCSD is outside acceptance limits/RPD of the LCS and LCSD exceeds the control limits
H = Sample was prepped or analyzed beyond the specified holding time
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate valve

Exhibit A

Washington State Department of Ecology
Toxics Cleanup Program

Terrestrial Ecological Evaluation Process - Primary Exclusions

Documentation Form

Exclusion #	Exclusion Detail	Yes or No?	Are Institutional Controls Required If The Exclusion Applies?
1	Will soil contamination be located at least 6 feet beneath the ground surface and less than 15 feet?	Yes (No)	Yes
	Will soil contamination located at least 15 feet beneath the ground surface?	Yes (No)	No
	Will soil contamination located below the conditional point of compliance?	(Yes) No	Yes
2	Will soil contamination be covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed?	Yes (No)	Yes
3	Is there less than 1.5 acres of contiguous undeveloped land on the site, or within 500 feet of any area of the site affected by hazardous substances **other than** those listed in the table of Hazardous Substances of Concern? And Is there less than 0.25 acres of contiguous undeveloped land on or within 500 feet of any area of the site affected by hazardous substances **listed in** the table of Hazardous Substances of Concern?	Yes (No) Yes (No)	Other factors determine
4	Are concentrations of hazardous substances in the soil less than or equal to natural background concentrations of those substances at the point of compliance	Yes (No)	No

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

Exhibit B

Terrestrial Ecological Evaluation Process- Simplified or Site-Specific Evaluation?

Documentation Form

	Terrestrial Concern	Response (Circle One)
*1	Is the site is located on or directly adjacent to an area where management or land use plans will maintain or restore native or semi-native vegetation?	(Yes) / No
*2a	Is the site used by a threatened or endangered species?	Yes / (No)
*2b	Is the site used by a wildlife species classified by the state department of fish and wildlife as a "priority species" or "species of concern" under Title 77 RCW?	Yes / (No)
*2c	Is the site used by a plant species classified by the Washington state department of Natural Resources natural heritage program as "endangered," "threatened," or "sensitive" under Title 79 RCW.	Yes / (No)
*3	Is the site (area where the contamination is located) located on a property that contains at least ten acres of native vegetation within 500 feet of the area where the contamination is located?	(Yes) / No
4	Has the department determined that the site may present a risk to significant wildlife populations?	Yes / (No)

*1 This includes for example, green-belts, protected wetlands, forestlands, locally designated environmentally sensitive areas, open space areas managed for wildlife, and some parks or outdoor recreation areas. This does not include park areas used for intensive sport activities such as baseball or football.

*2a What are the threatened or endangered species in Washington state?

*2b Which plant species are classified as threatened, endangered, or sensitive? Where can I find out more information about this topic?

*2c For plants, "used" means that a plant species grows at the site or has been found growing at the site. For animals, "used" means that individuals of a species have been observed to live, feed or breed at the site.

*3 For this analysis, do not include native vegetation beyond the property boundary.

The following sources shall be used in making this determination: Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, and L.C. Hitchcock, C.L. Hitchcock, J.W. Thompson and A. Cronquist, 1955-1969, Vascular Plants of the Pacific Northwest(5 volumes). Areas planted with native species for ornamental or landscaping purposes shall not be considered to be native vegetation. [WAC 173-340-7491(2)(c)(i)]

(Here's a link to the Seattle Public Library and the Washington State Library to borrow a copy of Natural Vegetation of Oregon and Washington, J.F. Franklin and C.T. Dyrness, Oregon State University Press, 1988, or you may purchase it through your favorite bookseller. Here's an additional link to a useful online Field Guide to Selected Rare Plants of Washington developed by the Washington State Department of Natural Resources' Natural Heritage Program (WNHP) and the Spokane District of the U.S.D.I. Bureau of Land Management (BLM) which contains fact sheets for 139 vascular plant species and one lichen species.

Here is an aid to calculating area and an aerial photo depicting a site, its 500 foot boundary and several labeled circles identifying various areas for reference in judging the area of native vegetation within the 500 foot radius.

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493] [Index of Tables]

[TEE Home]

Exhibit C

DEPARTMENT OF ECOLOGY
State of Washington

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: OPLC - Kent Block Valve	
Facility/Site Address: South 259th Street & 74th Avenue South	
Facility/Site No: 2401	VCP Project No.: NW2705

Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.		
Name: Timothy J. Haderly		Title: Principal
Organization: Ecological Land Services, Inc.		
Mailing address: 1157 - 3rd Avenue, Suite 220A		
City: Longview	State: WA	Zip code: 98632
Phone: 360.578.1371	Fax: 360.414.9305	E-mail: timh@eco-land.com

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2.***

☒ No or Unknown *If you answered **"NO" or "UKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous# undeveloped± land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous# undeveloped± land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

± "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

"Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☒ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☒ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☐ No *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

■ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☐ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☒ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

☐ No issues were identified during the problem formulation step.

■ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*

☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use? *Check all that apply. See* WAC 173-340-7493(3).

☐ Literature surveys.

☐ Soil bioassays.

☐ Wildlife exposure model.

☐ Biomarkers.

☐ Site-specific field studies.

☐ Weight of evidence.

☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

☐ Confirmed there was no problem.

☐ Confirmed there was a problem and established site-specific cleanup levels.

5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

☐ Yes If so, please identify the Ecology staff who approved those steps:

☒ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

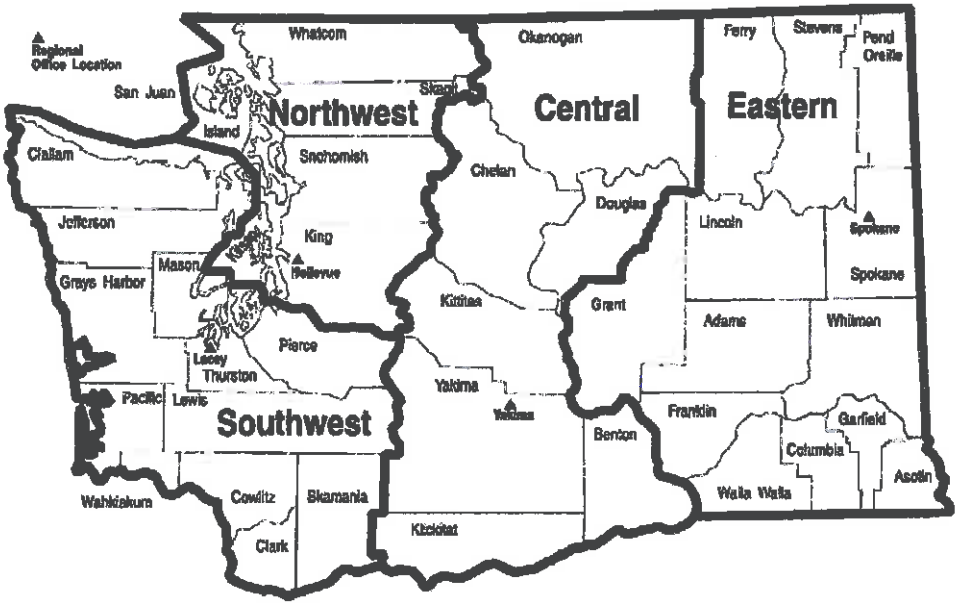


Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	12
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	3
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	2
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	1
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	22

Notes for Table 749-1

[a] It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

[b] **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

> **Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

[c] Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[Area Calculation Aid] [Aerial Photo with Area Designations] [TEE Table 749-1] [Index of Tables]

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

Appendix C

Historical Groundwater Data

GeoEngineers

TABLE 5 (Page 1 of 3)
SUMMARY OF GROUND WATER QUALITY DATA

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-1	08-29-89	2,400	530	99	2,240
	12-20-89	95	34	9.5	78
MW-4	09-05-89	ND	ND	ND	ND
	12-21-89	ND	ND	ND	ND
MW-5	12-21-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
MW-6	09-20-89	410	13	11	41
	12-21-89	79	2.2	1.1	11
	01-23-90	910	23	17	83
	02-20-90	950	65	190	280
	03-20-90	9.6	0.6	ND	6.7
	04-23-90	130	22	16	75
	05-18-90	220	39	20	120
MW-7	09-20-89	1.1	ND	ND	0.8
	12-20-89	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-8	09-20-89	6,400	550	840	2,170
	12-20-89	9,300	<2,500	<2,500	<2,500
	01-23-90	10,000	980	5,000	4,700
	02-20-90	2,700	500	1,900	2,200
	03-20-90	1,800	470	1,100	1,700
MW-9	09-20-89	ND	ND	ND	ND
	12-20-89	4.8	25	86	120
	01-23-90	4.8	53	85	240
	02-20-90	14	41	38	120
	03-20-90	26	38	6.3	110
	04-23-90	23	42	6.7	81
MW-10	09-20-89	29	ND	1.1	0.5
	12-20-89	74	ND	0.77	1.6
	01-23-90	140	12	87	53
	02-20-90	130	33	100	67
	03-20-90	270	58	330	220
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

GeoEngineers

TABLE 5 (Page 2 of 3)

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-11	10-18-89	520	16	13	47
	12-20-89	1,200	53.9	29.6	158
	01-23-90	1,600	96	170	220
	02-20-90	1,200	56	100	240
	03-21-90	2,200	130	260	420
	04-23-90	2,000	140	180	440
	05-18-90	2,300	150	205	500
MW-12	10-18-89	ND	ND	ND	ND
	12-20-89	ND	ND	ND	ND
	01-23-90	ND	ND	ND	ND
	02-21-90	ND	ND	ND	ND
	03-21-90	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-13	10-18-89	3.4	ND	ND	ND
	12-21-89	2.5	ND	ND	ND
	01-23-90	3.3	ND	ND	ND
	02-20-90	20	1.7	9.3	8.0
	03-21-90	29	13	37	64
	04-23-90	49	26	5.8	110
MW-14	11-10-89	1,800	41	22	170
	12-20-89	160	6.5	1.6	18
	01-23-90	110	ND	1.0	6.8
	02-21-90	14	ND	ND	1.3
	03-21-90	530	20	6.9	47
	04-23-90	360	1.9	2.2	7.8
	05-18-90	500	4.2	4.3	14
MW-15	11-10-89	99	ND	ND	1.0
	12-20-89	200	1.7	2.2	6.4
	01-23-90	120	ND	1.4	2.6
	02-21-90	48	ND	ND	0.7
	03-21-90	53	ND	0.5	0.5
	04-23-90	53	ND	ND	ND
	05-18-90	59	ND	ND	ND
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

GeoEngineers

TABLE 5 (Page 3 of 3)

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-16	12-19-89	98	ND	1.1	ND
	01-23-90	560	2.4	6.8	5.5
	02-21-90	750	64	320	360
	03-21-90	720	63	400	310
	04-23-90	1,200	140	740	630
	05-18-90	780	97	750	470
MW-17	12-19-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-18	12-20-89	ND	ND	ND	ND
	01-22-90	ND	ND	ND	ND
	02-21-90	ND	ND	ND	0.5
	03-20-90	1.0	ND	1.0	0.7
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-19	12-20-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	1.2	ND
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

TABLE 1 (Page 1 of 4)
SUMMARY OF GROUND WATER MONITORING DATA
OPLC KENT BLOCK VALVE RELEASE
KENT, WASHINGTON

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-6	09/20/89	410	13	11	41	–	–
	12/21/89	79	2.2	1.1	11	–	–
	01/23/90	910	23	17	83	–	–
	02/20/90	950	65	190	280	–	–
	03/20/90	9.6	0.6	ND	6.7	–	–
	04/23/90	130	22	16	75	–	–
	05/18/90	220	39	20	120	–	–
	12/13/90	280	2.1	8.9	13	–	–
	10/07/91	180	4.6	5.3	12	–	–
	08/26/92	320	18	7.8	47	–	–
	06/03/93	3.0	ND	ND	0.7	–	–
MW-7	09/20/89	1.1	ND	ND	0.8	–	–
	12/20/89	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	ND	ND	ND	ND	–	–
	10/07/91	ND	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
	06/03/93	ND	ND	ND	ND	–	–
MW-9	09/20/89	ND	ND	ND	ND	–	–
	12/20/89	4.8	25	86	120	–	–
	01/23/90	4.8	53	85	240	–	–
	02/20/90	14	41	38	120	–	–
	03/20/90	26	38	6.3	110	–	–
	04/23/90	23	42	6.7	81	–	–
	12/13/90	0.9	15	1.6	30	–	–
	08/26/92	3.3	0.9	ND	1.3	–	–
	06/03/93	ND	ND	ND	ND	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.530
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 2 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-11	10/18/89	520	16	13	47	–	–
	12/20/89	1200	53.9	29.6	158	–	–
	01/23/90	1600	96	170	220	–	–
	02/20/90	1200	56	100	240	–	–
	03/21/90	2200	130	260	420	–	–
	04/23/90	2000	140	180	440	–	–
	05/18/90	2300	150	205	500	–	–
	12/13/90	5500	340	280	1,200	–	–
	10/07/91	1100	100	21	280	–	–
	08/26/92	1400	140	28	420	–	–
	06/03/93	1000	170	25	420	–	–
MW-12	10/18/89	ND	ND	ND	ND	–	–
	12/20/89	ND	ND	ND	ND	–	–
	01/23/90	ND	ND	ND	ND	–	–
	02/21/90	ND	ND	ND	ND	–	–
	03/21/90	ND	ND	ND	ND	–	–
	04/23/90	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	ND	ND	ND	ND	–	–
	10/07/91	ND	ND	ND	ND	–	–
	08/26/92	3.9	0.5	ND	1.4	–	–
	06/03/93	ND	ND	ND	ND	–	–
MW-13	10/18/89	3.4	ND	ND	ND	–	–
	12/21/89	2.5	ND	ND	ND	–	–
	01/23/90	3.3	ND	ND	ND	–	–
	02/20/90	20	1.7	9.3	8.0	–	–
	03/21/90	29	13	37	64	–	–
	04/23/90	49	26	5.8	110	–	–
	08/26/92	9.5	1.6	0.5	3.7	–	–
	06/03/93	3.8	0.6	ND	2.1	–	–
	08/17/99	66.5	2.63	3.45	28.8	0.370	<0.250
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 3 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-14	11/10/89	1800	41	22	170	–	–
	12/20/89	160	6.5	1.6	18	–	–
	01/23/90	110	ND	1.0	6.8	–	–
	02/21/90	14	ND	ND	1.3	–	–
	03/21/90	530	20	6.9	47	–	–
	04/23/90	360	1.9	2.2	7.8	–	–
	05/18/90	500	4.2	4.3	14	–	–
	12/13/90	16	ND	ND	ND	–	–
	10/07/91	8.4	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
	06/03/93	ND	ND	ND	ND	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.269
MW-15	11/10/89	99	ND	ND	1.0	–	–
	12/20/89	200	1.7	2.2	6.4	–	–
	01/23/90	120	ND	1.4	2.6	–	–
	02/21/90	48	ND	ND	0.7	–	–
	03/21/90	53	ND	0.5	0.5	–	–
	04/23/90	53	ND	ND	ND	–	–
	05/18/90	59	ND	ND	ND	–	–
	12/13/90	450	17	120	97	–	–
	10/07/91	350	16	6.6	50	–	–
	08/26/92	380	21	3.6	66	–	–
	06/03/93	370	15	4.1	52	–	–
	08/17/99	611	23.4	12	72.7	<0.500	<0.250
MW-16	12/19/89	98	ND	1.1	ND	–	–
	01/23/90	560	2.4	6.8	5.5	–	–
	02/21/90	750	64	320	360	–	–
	03/21/90	720	63	400	310	–	–
	04/23/90	1200	140	740	630	–	–
	05/18/90	780	97	750	470	–	–
	12/13/90	590	26	98	130	–	–
	10/07/91	840	99	180	400	–	–
	08/26/92	520	150	20	480	–	–
	06/03/93	420	170	14	380	–	–
	08/17/99	48.6	3.99	3.40	30.1	0.710	0.256
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 4 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-17	12/19/89	ND	ND	ND	ND	–	–
	04/23/90	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	ND	ND	ND	ND	–	–
	10/07/91	ND	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
MW-17A	09/10/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.269
MW-18	12/20/89	ND	ND	ND	ND	–	–
	01/22/90	ND	ND	ND	ND	–	–
	02/21/90	ND	ND	ND	0.5	–	–
	03/20/90	1.0	ND	1.0	0.7	–	–
	04/23/90	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	14	ND	ND	ND	–	–
	01/04/91	3.3	ND	ND	ND	–	–
	10/07/91	12	ND	ND	ND	–	–
	08/26/92	64	1.6	ND	6.6	–	–
	06/03/93	97	ND	1.5	23	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	<0.250
MW-19	12/20/89	ND	ND	ND	ND	–	–
	04/23/90	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	1.2	ND	–	–
	12/13/90	ND	ND	1.4	ND	–	–
	01/04/91	ND	ND	ND	ND	–	–
	10/07/91	1.3	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
	06/03/93	3.0	ND	ND	ND	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	<0.250
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes:
µg/l = micrograms per liter.
Shaded concentrations are greater than the MTCA Method A cleanup level.
mg/l = milligrams per liter.
ND = not detected; refer to laboratory reports for analyte detection limits.
– = not sampled or not tested.

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TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-9	9/20/1989	95.21	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	12/20/1989	95.21	NG	NG	NG	NG	--	--	--	4.8	86	25	120	--	--	--	--
	1/23/1990	95.21	NG	NG	NG	NG	--	--	--	4.8	85	53	240	--	--	--	--
	2/20/1990	95.21	NG	NG	NG	NG	--	--	--	**14**	38	41	120	--	--	--	--
	3/20/1990	95.21	NG	NG	NG	NG	--	--	--	**26**	6.3	38	110	--	--	--	--
	4/23/1990	95.21	NG	NG	NG	NG	--	--	--	**23**	6.7	42	81	--	--	--	--
	12/13/1990	95.21	NG	NG	NG	NG	--	--	--	0.9	1.6	15	30	--	--	--	--
	8/26/1992	95.21	NG	NG	NG	NG	--	--	--	3.3	ND	0.9	1.3	--	--	--	--
	6/3/1993	95.21	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	8/17/1999	95.21	NP	18.82	NP	76.39	<50	**530**	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	95.21	NP	16.1	NP	79.11	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	95.21	NP	16.88	NP	78.33	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	95.21	NP	19.22	NP	75.99	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	95.21	NP	19.31	NP	75.9	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	95.21	NP	18	NP	77.21	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	95.21	NP	23	NP	72.21	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	95.21	NP	18.06	NP	77.15	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	95.21	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	--	--	--	--
	12/27/2001	95.21	NP	14.41	NP	80.8	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	95.21	NP	14.5	NP	80.71	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	95.21	NP	18.04	NP	77.17	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	95.21	NP	23.05	NP	72.16	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	95.21	NP	13.82	NP	81.39	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	95.21	NP	18.37	NP	76.84	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	95.21	NP	17.38	NP	77.83	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	95.21	NP	18.63	NP	76.58	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	95.21	NP	19.39	NP	75.82	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	95.21	NP	17.39	NP	77.82	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	95.21	NP	16.32	NP	78.89	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	95.21	NP	19.43	NP	75.78	<50.0	<78.4	<392	<1	<1	<1	<3	<1.0	<1.0	<1.0	<10.0
	11/07/12	95.21	NP	16.81	NP	78.40	<100	<200	<200	<1	<1	<1	<3	--	--	--	9.4
	03/08/13	95.21	NP	15.37	NP	79.84	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	95.21	NP	16.67	NP	78.54	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0098	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-13	10/18/1989	97.41	NG	NG	NG	NG	--	--	--	3.4	ND	ND	ND	--	--	--	--
	12/21/1989	97.41	NG	NG	NG	NG	--	--	--	2.5	ND	ND	ND	--	--	--	--
	1/23/1990	97.41	NG	NG	NG	NG	--	--	--	3.3	ND	ND	ND	--	--	--	--
	2/20/1990	97.41	NG	NG	NG	NG	--	--	--	**20**	9.3	1.7	8	--	--	--	--
	3/21/1990	97.41	NG	NG	NG	NG	--	--	--	**29**	37	13	64	--	--	--	--
	4/23/1990	97.41	NG	NG	NG	NG	--	--	--	**49**	5.8	26	110	--	--	--	--
	8/26/1992	97.41	NG	NG	NG	NG	--	--	--	**9.5**	0.5	1.6	3.7	--	--	--	--
	6/3/1993	97.41	NG	NG	NG	NG	--	--	--	3.8	ND	0.6	2.1	--	--	--	--
	8/17/1999	97.41	NP	19.5	NP	77.91	370	<250	--	**66.5**	3.45	2.63	28.8	--	--	--	--
	3/17/2000	97.41	NP	17.72	NP	79.69	<50	<250	--	1.46	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.41	NP	18.38	NP	79.03	<80	--	--	1.35	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	97.41	NP	20.05	NP	77.36	222	<250	--	**40**	<1.05	<0.5	<1	--	--	--	--
	9/27/2000	97.41	NP	20.96	NP	76.45	284	<250	--	**47.5**	<1.66	<1	8.99	--	--	--	--
	12/27/2000	97.41	NP	20.68	NP	76.73	53.6	<250	--	<0.653	0.964	<0.5	1.61	--	--	--	--
	3/30/2001	97.41	NP	18.77	NP	78.64	<50	--	--	1.03	<0.5	<0.5	2.89	--	--	--	--
	7/11/2001	97.41	NP	20.91	NP	76.5	114	--	--	2.52	<0.5	<0.5	3.26	--	--	--	--
	9/26/2001	97.41	NP	21.72	NP	75.69	144	--	--	2.66	<0.5	<0.5	3.74	--	--	--	--
	12/27/2001	97.41	NP	17.59	NP	79.82	70.4	--	--	1.57	<0.5	<0.5	1.67	--	--	--	--
	3/14/2002	97.41	NP	17.9	NP	79.51	<50	--	--	0.61	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.41	NP	20.83	NP	76.58	55	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.41	NP	19.2	NP	78.21	88.5	--	--	0.574	<0.5	<0.5	1.59	--	--	--	--
	6/1/2004	97.41	NP	16.56	NP	80.85	<50	--	--	0.574	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.41	NP	20.99	NP	76.42	<50	--	--	0.658	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.41	NP	20.18	NP	77.23	86.1	--	--	0.747	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.41	NP	20.92	NP	76.49	115	--	--	0.956	<0.5	<0.5	<1	--	--	--	--
	4/11/2006	97.41	NP	17.25	NP	80.16	58.6	<243	--	0.614	<0.5	<0.5	<1	--	--	--	--
	5/4/2007	97.41	NP	18.07	NP	79.34	65.3	<236	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/5/2007	97.41	NP	20.61	NP	76.8	249	<236	--	**8.4**	<0.5	<0.5	<1	--	--	--	--
	2/12/2008	97.41	NP	14.08	NP	83.33	55	<240	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/17/2008	97.41	NP	18.99	NP	78.42	<50	<243	<485	0.64	<0.5	<0.5	<1	--	--	--	--
	1/12/2009	97.41	NP	15.53	NP	81.88	550	<238	<476	**12.5**	0.94	<0.5	1.93	--	--	--	--
	3/3/2010	97.41	NP	18.52	NP	78.89	<50	<120	260	<1	<1	<1	<2	--	--	--	--
	3/3/2011	97.41	NP	17.22	NP	80.19	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	97.41	NP	20.55	NP	76.86	<50.0	<78.4	<392	<1	<1	<1	<3	<1.0	<1.0	<1.0	<10.0
	11/7/2012	97.41	NP	17.78	NP	79.63	<100	<200	<200	<1	<1	<1	<3	--	--	--	11.3
	03/08/13	97.41	NP	17.20	NP	80.21	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.41	NP	17.97	NP	79.44	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-14	11/10/1989	97.15	NG	NG	NG	NG	--	--	--	**1800**	22	41	170	--	--	--	--
	12/20/1989	97.15	NG	NG	NG	NG	--	--	--	**160**	1.6	6.5	18	--	--	--	--
	1/23/1990	97.15	NG	NG	NG	NG	--	--	--	**110**	1	ND	6.8	--	--	--	--
	2/21/1990	97.15	NG	NG	NG	NG	--	--	--	**14**	ND	ND	1.3	--	--	--	--
	3/21/1990	97.15	NG	NG	NG	NG	--	--	--	**530**	6.9	20	47	--	--	--	--
	4/23/1990	97.15	NG	NG	NG	NG	--	--	--	**360**	2.2	1.9	7.8	--	--	--	--
	5/18/1990	97.15	NG	NG	NG	NG	--	--	--	**500**	4.3	4.2	14	--	--	--	--
	12/13/1990	97.15	NG	NG	NG	NG	--	--	--	**16**	ND	ND	ND	--	--	--	--
	10/7/1991	97.15	NG	NG	NG	NG	--	--	--	**8.4**	ND	ND	ND	--	--	--	--
	8/26/1992	97.15	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	6/3/1993	97.15	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	8/17/1999	97.15	NP	20.84	NP	76.31	<50	269	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	97.15	NP	18.08	NP	79.07	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.15	NP	18.86	NP	78.29	<80	--	--	1.91	0.888	<0.5	2.49	--	--	--	--
	7/31/2000	97.15	NP	21.25	NP	75.9	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	97.15	NP	21.45	NP	75.7	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	97.15	NP	20.82	NP	76.33	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	97.15	NP	18.67	NP	78.48	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	97.15	NP	20.7	NP	76.45	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	97.15	NP	21.53	NP	75.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	97.15	NP	17.05	NP	80.1	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	97.15	NP	17.72	NP	79.43	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.15	NP	20.6	NP	76.55	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.15	NP	19.01	NP	78.14	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	97.15	NP	16.57	NP	80.58	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.15	NP	20.81	NP	76.34	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.15	NP	20.21	NP	76.94	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.15	NP	21.02	NP	76.13	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	4/11/2006	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	97.15	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	97.15	NP	17.99	NP	79.16	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	97.15	NP	21.33	NP	75.82	<50.0	131	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.15	NP	18.31	NP	78.84	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	97.15	NP	17.41	NP	79.74	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.15	NP	18.62	NP	78.53	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0098	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-15	11/10/1989	96.84	NG	NG	NG	NG	--	--	--	**99**	ND	ND	1	--	--	--	--
	12/20/1989	96.84	NG	NG	NG	NG	--	--	--	**200**	2.2	1.7	6.4	--	--	--	--
	1/23/1990	96.84	NG	NG	NG	NG	--	--	--	**120**	1.4	ND	2.6	--	--	--	--
	2/21/1990	96.84	NG	NG	NG	NG	--	--	--	**48**	ND	ND	0.7	--	--	--	--
	3/21/1990	96.84	NG	NG	NG	NG	--	--	--	**53**	0.5	ND	0.5	--	--	--	--
	4/23/1990	96.84	NG	NG	NG	NG	--	--	--	**53**	ND	ND	ND	--	--	--	--
	5/18/1990	96.84	NG	NG	NG	NG	--	--	--	**59**	ND	ND	ND	--	--	--	--
	12/13/1990	96.84	NG	NG	NG	NG	--	--	--	**450**	120	17	97	--	--	--	--
	10/7/1991	96.84	NG	NG	NG	NG	--	--	--	**350**	6.6	16	50	--	--	--	--
	8/26/1992	96.84	NG	NG	NG	NG	--	--	--	**380**	3.6	21	66	--	--	--	--
	6/3/1993	96.84	NG	NG	NG	NG	--	--	--	**370**	4.1	15	52	--	--	--	--
	8/17/1999	96.84	NP	21.1	NP	75.74	<50	<250	--	**611**	12	23.4	72.7	--	--	--	--
	3/17/2000	96.84	NP	18.33	NP	78.51	140	<250	--	**300**	4.19	0.064	20.5	--	--	--	--
	6/22/2000	96.84	NP	19.02	NP	77.82	<800	--	--	**631**	13	11.6	55.7	--	--	--	--
	7/31/2000	96.84	NP	21.3	NP	75.54	94.7	<250	--	**72.1**	1.33	<0.5	6.59	--	--	--	--
	9/27/2000	96.84	NP	21.6	NP	75.24	<1000	<250	--	**637**	11	41.8	64.3	--	--	--	--
	12/27/2000	96.84	NP	20.88	NP	75.96	587	<250	--	**547**	8.72	40.2	58.5	--	--	--	--
	3/30/2001	96.84	NP	18.59	NP	78.25	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	96.84	NP	20.72	NP	76.12	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.84	NP	21.54	NP	75.3	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.84	NP	17.73	NP	79.11	566	--	--	**212**	7.19	<2.5	16.8	--	--	--	--
	3/14/2002	96.84	NP	17.98	NP	78.86	586	--	--	**320**	3.78	<0.5	15.5	--	--	--	--
	6/17/2003	96.84	NP	20.83	NP	76.01	**1020**	--	--	**386**	4.86	0.555	16.8	--	--	--	--
	3/1/2004	96.84	NP	19.29	NP	77.55	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.84	NP	16.27	NP	80.57	163	--	--	**59**	0.966	<0.5	2.55	--	--	--	--
	9/1/2004	96.84	NP	20.78	NP	76.06	389	--	--	**125**	2.07	<0.5	5.52	--	--	--	--
	10/18/2004	96.84	NP	19.99	NP	76.85	662	--	--	**253**	<2.5	<2.5	<5	--	--	--	--
	7/27/2005	96.84	NP	21.36	NP	75.48	414	--	--	**188**	2.32	<1	9.07	--	--	--	--
	4/11/2006	96.84	NP	19.32	NP	77.52	544	<250	--	**145**	2.28	<0.5	9.05	--	--	--	--
	5/4/2007	96.84	NP	19.08	NP	77.76	159	<236	--	**18.8**	<0.5	<0.5	<1	--	--	--	--
	9/5/2007	96.84	NP	21.67	NP	75.17	105	<236	--	0.99	<0.5	<0.5	1.27	--	--	--	--
	2/12/2008	96.84	NP	14.9	NP	81.94	248	<243	--	**16.4**	0.97	<0.5	5.49	--	--	--	--
	7/17/2008	96.84	NP	20.21	NP	76.63	384	<243	<485	**24.7**	1.54	<0.5	6.84	--	--	--	--
	1/12/2009	96.84	NP	15.53	NP	81.31	289	<236	<472	0.829	1.01	<0.5	4.84	--	--	--	--
	3/3/2010	96.84	NP	19.79	NP	77.05	<50	<120	<240	<1	<1	<1	<2	--	--	--	--
	9/12/2012	96.84	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
	11/7/2012	96.84	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
	03/08/13	96.94	NP	18.03	NP	78.91	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.94	NP	18.95	NP	77.99	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10
	08/29/13	96.94	NP	21.83	NP	75.11	<50.0	<130	<250	<2.0	<2.0	<2.0	<6.0	<2.0	--	--	1.5
	12/12/13	96.94	NP	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	12/19/13	96.94	NP	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	03/19/14	96.84	NP	11.29	NP	85.55	<50	<120	<240	<5.0	<5.0	<5.0	<10	<5.0	--	--	<2.0

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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-16	12/19/1989	97.32	NG	NG	NG	NG	--	--	--	**98**	1.1	ND	ND	--	--	--	--
	1/23/1990	97.32	NG	NG	NG	NG	--	--	--	**560**	6.8	2.4	5.5	--	--	--	--
	2/21/1990	97.32	NG	NG	NG	NG	--	--	--	**750**	320	64	360	--	--	--	--
	3/21/1990	97.32	NG	NG	NG	NG	--	--	--	**720**	400	63	310	--	--	--	--
	4/23/1990	97.32	NG	NG	NG	NG	--	--	--	**1200**	740	140	630	--	--	--	--
	5/18/1990	97.32	NG	NG	NG	NG	--	--	--	**780**	750	97	470	--	--	--	--
	12/13/1990	97.32	NG	NG	NG	NG	--	--	--	**590**	98	26	130	--	--	--	--
	10/7/1991	97.32	NG	NG	NG	NG	--	--	--	**840**	180	99	400	--	--	--	--
	8/26/1992	97.32	NG	NG	NG	NG	--	--	--	**520**	20	150	480	--	--	--	--
	6/3/1993	97.32	NG	NG	NG	NG	--	--	--	**420**	14	170	380	--	--	--	--
	8/17/1999	97.32	NP	21.37	NP	75.95	710	256	--	**48.6**	3.4	3.99	30.1	--	--	--	--
	3/17/2000	97.32	NP	18.76	NP	78.56	**981**	<250	--	**168**	8	39.4	71.7	--	--	--	--
	6/22/2000	97.32	NP	19.31	NP	78.01	132	--	--	**12.6**	1.25	<0.5	4.15	--	--	--	--
	7/31/2000	97.32	NP	21.7	NP	75.62	580	<250	--	**61**	4.19	1.07	20.8	--	--	--	--
	9/27/2000	97.32	NP	21.71	NP	75.61	623	<250	--	**55.4**	4.72	3.34	18.4	--	--	--	--
	12/27/2000	97.32	NP	21.15	NP	76.17	473	<250	--	**34.7**	2.83	<0.5	9.18	--	--	--	--
	3/30/2001	97.32	NP	18.84	NP	78.48	649	--	--	**30.6**	2.66	<0.5	4.42	--	--	--	--
	7/11/2001	97.32	NP	21.04	NP	76.28	538	--	--	**33.8**	2.36	<0.5	6.08	--	--	--	--
	9/26/2001	97.32	NP	21.79	NP	75.53	305	--	--	**22.1**	1.51	<0.5	3.24	--	--	--	--
	12/27/2001	97.32	NP	17.99	NP	79.33	468	--	--	**23.7**	2.48	<0.5	5.69	--	--	--	--
	3/14/2002	97.32	NP	18.25	NP	79.07	630	--	--	**95.7**	3.78	5.54	6.69	--	--	--	--
	6/17/2003	97.32	NP	21.08	NP	76.24	383	--	--	**20.2**	2.29	<0.5	3.29	--	--	--	--
	3/1/2004	97.32	NP	19.57	NP	77.75	127	--	--	**7.26**	0.68	<0.5	1.11	--	--	--	--
	6/1/2004	97.32	NP	16.52	NP	80.8	226	--	--	**15.3**	1.2	<0.5	1.06	--	--	--	--
	9/1/2004	97.32	NP	21.03	NP	76.29	314	--	--	**15.7**	1.58	<0.5	1.37	--	--	--	--
	10/18/2004	97.32	NP	20.2	NP	77.12	<80	--	--	2.7	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.32	NP	21.65	NP	75.67	122	--	--	4.27	0.523	<0.5	1.2	--	--	--	--
	4/11/2006	97.32	NP	19.59	NP	77.73	**1090**	<258	--	**152**	3.84	70.6	3.7	--	--	--	--
	5/4/2007	97.32	NP	19.35	NP	77.97	578	<236	--	**22.3**	0.58	4.77	<1	--	--	--	--
	9/5/2007	97.32	NP	21.95	NP	75.37	251	<236	--	1.18	<0.5	<0.5	<1	--	--	--	--
	2/12/2008	97.32	NP	15.11	NP	82.21	421	<238	--	2.01	0.77	<0.5	1.56	--	--	--	--
	7/17/2008	97.32	NP	20.48	NP	76.84	379	<243	<485	1.31	0.514	<0.5	1.13	--	--	--	--
	1/12/2009	97.32	NP	15.61	NP	81.71	307	<236	<472	1.22	<0.5	<0.5	<1	--	--	--	--
	3/3/2010	97.32	NP	20.05	NP	77.27	52	<120	<240	<1	<1	<1	<2	--	--	--	--
	3/3/2011	97.32	NP	19.02	NP	78.30	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	97.32	NP	21.92	NP	75.40	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.32	NP	19.15	NP	78.17	170	<200	<200	<1	<1	<1	<3	--	--	--	7.2
	03/08/13	97.32	NP	18.37	NP	78.95	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.32	NP	19.25	NP	78.07	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-17A	9/19/1999	97.96	NP	23.35	NP	74.61	<50	269	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	97.96	NP	20.24	NP	77.72	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.96	NP	21.01	NP	76.95	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	97.96	NP	23.3	NP	74.66	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	97.96	NP	23.09	NP	74.87	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	97.96	NP	22.55	NP	75.41	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	97.96	NP	19.98	NP	77.98	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	97.96	NP	22.59	NP	75.37	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	97.96	NP	23.11	NP	74.85	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	97.96	NP	19.82	NP	78.14	<50	--	--	<0.5	0.622	<0.5	1.24	--	--	--	--
	3/14/2002	97.96	NP	19.54	NP	78.42	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.96	NP	22.72	NP	75.24	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.96	NP	21.17	NP	76.79	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	97.96	NP	17.03	NP	80.93	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.96	NP	22.29	NP	75.67	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.96	NP	20.99	NP	76.97	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.96	NP	23.18	NP	74.78	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	97.96	NP	23.36	NP	74.6	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	97.96	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	97.96	NP	20.63	NP	77.33	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	97.96	NP	23.46	NP	74.5	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.96	NP	20.55	NP	77.41	<100	<200	<200	<1	<1	<1	<3	--	--	--	8
	03/08/13	97.96	NP	19.79	NP	78.17	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.96	NP	20.83	NP	77.13	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0096	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-18	12/20/1989	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	1/22/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	2/21/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	0.5	--	--	--	--
	3/20/1990	98.24	NG	NG	NG	NG	--	--	--	1	1	ND	0.7	--	--	--	--
	4/23/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	5/18/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	12/13/1990	98.24	NL	NL	NL	NL	--	--	--	**14**	ND	ND	ND	--	--	--	--
	1/4/1991	98.24	NG	NG	NG	NG	--	--	--	3.3	ND	ND	ND	--	--	--	--
	10/7/1991	98.24	NG	NG	NG	NG	--	--	--	**12**	ND	ND	ND	--	--	--	--
	8/26/1992	98.24	NG	NG	NG	NG	--	--	--	**64**	ND	1.6	6.6	--	--	--	--
	6/3/1993	98.24	NG	NG	NG	NG	--	--	--	**97**	1.5	ND	23	--	--	--	--
	8/17/1999	98.24	NP	23.14	NP	75.1	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	98.24	NP	20.52	NP	77.72	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	98.24	NP	21.3	NP	76.94	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	98.24	NP	23.43	NP	74.81	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	98.24	NP	23.21	NP	75.03	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	98.24	NP	22.71	NP	75.53	54.6	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	98.24	NP	20.24	NP	78	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	98.24	NP	22.76	NP	75.48	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	98.24	NP	23.24	NP	75	77.5	--	--	0.602	<0.5	<0.5	1.05	--	--	--	--
	12/27/2001	98.24	NP	20.21	NP	78.03	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	98.24	NP	19.85	NP	78.39	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	98.24	NP	22.89	NP	75.35	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	98.24	NP	21.43	NP	76.81	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	98.24	NP	17.16	NP	81.08	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	98.24	NP	22.44	NP	75.8	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	98.24	NP	21.15	NP	77.09	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	98.24	NP	23.37	NP	74.87	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	98.24	NP	21.65	NP	76.59	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	98.24	NP	21.01	NP	77.23	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	98.24	NP	23.63	NP	74.61	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	98.24	NP	21.01	NP	77.23	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	98.24	NP	20.17	NP	78.07	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	98.24	NP	21.18	NP	77.06	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-19	12/20/1989	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	4/23/1990	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	5/18/1990	98.45	NG	NG	NG	NG	--	--	--	ND	1.2	ND	ND	--	--	--	--
	12/13/1990	98.45	NG	NG	NG	NG	--	--	--	ND	1.4	ND	ND	--	--	--	--
	1/4/1991	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	10/7/1991	98.45	NG	NG	NG	NG	--	--	--	1.3	ND	ND	ND	--	--	--	--
	8/26/1992	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	6/3/1993	98.45	NG	NG	NG	NG	--	--	--	3	ND	ND	ND	--	--	--	--
	8/17/1999	98.45	NP	23.18	NP	75.27	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	98.45	NP	20.65	NP	77.8	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	98.45	NP	21.45	NP	77	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	98.45	NP	23.49	NP	74.96	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	98.45	NP	23.27	NP	75.18	<50	<575	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	98.45	NP	22.78	NP	75.67	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	98.45	NP	20.38	NP	78.07	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	98.45	NP	22.83	NP	75.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	98.45	NP	23.29	NP	75.16	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	98.45	NP	20.39	NP	78.06	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	98.45	NP	19.19	NP	79.26	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	98.45	NP	22.98	NP	75.47	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	98.45	NP	21.61	NP	76.84	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	98.45	NP	17.24	NP	81.21	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	98.45	NP	22.55	NP	75.9	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	98.45	NP	21.24	NP	77.21	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	98.45	NP	23.44	NP	75.01	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	98.45	NP	23.61	NP	74.84	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	98.45	NP	21.96	NP	76.49	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	98.45	NP	21.16	NP	77.29	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	98.45	NP	23.68	NP	74.77	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	98.45	NP	21.15	NP	77.3	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	98.45	NP	20.34	NP	78.11	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	98.45	NP	21.32	NP	77.13	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-20	8/8/2001	96.5	NP	15.91	NP	80.59	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.5	NP	16.81	NP	79.69	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.5	NP	9.17	NP	87.33	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	96.5	NP	9.21	NP	87.29	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	96.5	NP	14.3	NP	82.2	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	96.5	NP	10.82	NP	85.68	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.5	NP	13.41	NP	83.09	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	96.5	NP	16.2	NP	80.3	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	96.5	NP	16.15	NP	80.35	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	96.5	NP	15.55	NP	80.95	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	96.5	NP	10.69	NP	85.81	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	96.5	NP	9.11	NP	87.39	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	96.5	NP	15.62	NP	80.88	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	96.5	NP	13.27	NP	83.23	<100	<167	<167	<1	<1	<1	<3	--	--	--	<3
	03/08/13	96.50	NP	10.86	NP	85.64	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.50	NP	11.61	NP	84.89	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0096	<0.50	<10

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KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-21	8/8/2001	96.82	NP	21.38	NP	75.44	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.82	NP	21.42	NP	75.4	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.82	NP	17.06	NP	79.76	<50	--	--	<0.5	0.62	<0.5	1.11	--	--	--	--
	3/14/2002	96.82	NP	17.2	NP	79.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	96.82	NP	20.4	NP	76.42	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	96.82	NP	18.33	NP	78.49	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.82	NP	16.3	NP	80.52	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	96.82	NP	20.5	NP	76.32	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	96.82	NP	19.68	NP	77.14	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	96.82	NP	20.92	NP	75.9	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	96.82	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	96.82	NP	17.42	NP	79.40	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	96.82	NP	21.28	NP	75.54	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	96.82	NP	18.31	NP	78.51	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	96.82	NP	17.28	NP	79.54	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.82	NP	18.17	NP	78.65	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

Notes:

TOC - Top of Casing

ft - Feet

NP - LNAPL not present

LNAPL - Light non-aqueous phase liquid

* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

Elevation - feet above mean sea level

NG - Not Gauged

NL - Not Located

WD - Well Damaged

WI - Well Inaccessible

-- - No information available

Results in BOLD exceed applicable action limits

MTCA - Model Toxics Control Act

< - Not detected at or ablve indicated laboratory reporting limit

UG/L - micrograms per liter

TPH-G - Total petroleum hydrocarbons as gasoline analyzed by Northwest Method NWTPH-Gx

TPH-D - Total petroleum hydrocarbons as diesel analyzed by Northwest Method NWTPH-Dx with silica gel cleanup

TPH-O - Total petroleum hydrocarbons as oil analyzed by Northwest Method NWTPH-Dx with silica gel cleanup

Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8260

EDB - 1,2-dibromoethane analyzed by EPA Method 8260 or 8011.

EDC - 1,2-dichloroethane; analyzed using EPA Method 8260

Total lead analyzed by EPA Method 6010/6020