City of Bothell

July 1, 2019

Jerome Cruz, Ecology Site Manager
Department of Ecology,
Northwest Regional Office Toxic Cleanup Program
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Re: Quarterly Progress Report #5

Reporting Period: Apr 1 – Jun 30, 2019

Site Names: **BOTHELL LANDING**
BOTHELL PAINT & DECORATING
BOTHELL FORMER HERTZ

Summary:

City of Bothell continues to implement the Cleanup Action Plans for the afore-mentioned sites as part of the Agreed Orders between the City and the Department of Ecology. Per the requirements of Section VII of the Agreed Orders "Work to be Performed", the attached quarterly progress reports (QPRs) have been prepared for the three-month period preceding this submittal.

Kane Environmental continues to conduct the quarterly groundwater monitoring for all three sites. Work on the environmental covenants (EC) continued to be coordinated by the respective legal staff at Ecology and City. An extension period with a due date of July 31, 2019 was granted by Ecology to allow for reviews, continued coordination and finalizing the ECs.

Please contact me if you have any questions.

Sincerely,

Nduta Mbuthia

Public Works Department
18415 101st Ave NE
Bothell, WA 98011
425.806.6800
www.bothellwa.gov

Reporting Period:	Apr 1 – Jun 30, 2019
Date submitted (electronically):	July 1, 2019
Date mailed (certified w/return receipt):	July 2019
Prepared by:	Nduta Mbuthia, Project Coordinator City of Bothell, Public Works Department Phone: 425.806.6829 Email: nduta.mbuthia@bothellwa.gov

CONTENTS

A. A list of on-site activities that have taken place during the reporting period;
B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;
C. Description of all deviations from Schedule (Exhibit D) during the current reporting period
D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule
E. All raw data (including laboratory analyses) received by PLP during the past reporting period and an identification of the source of the sample; and
F. A list of deliverables for the upcoming reporting period if different from the schedule.

Site Name: **BOTHELL LANDING**
Agreed Oder No.:15746, Effective date June 11, 2018

A. A list of on-site activities that have taken place during this quarter

The following on-site activity has occurred this quarter: - Groundwater compliance monitoring for the spring quarter was performed in May/June 2019. Sampling results are attached.

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests

As noted/discussed in the previous QPR, three analytes were added to the groundwater sampling based on discussions with the site manager in February.

C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter

There has been a deviation from the schedule this quarter with regard to:-

i. Groundwater sampling schedule for 2019/2020 – the site manager approved the proposed 2019/2020 schedule as follows (email correspondence is attached for reference):

- **Spring 2019**: May 20, 2019 – June 3, 2019
- **Summer 2019**: July 15, 2019 - August 5, 2019
- **Fall 2019**: October 7, 2019 – October 25, 2019
- **Winter 2020**: January 6, 2020 – January 20, 2020

i. Finalizing the Environmental Covenants (ECs) for the site – the City's consultant attorney sent the revised EC packages to AAG on February 26th. According to the deliverables schedule, the Final ECs were due 30 days after receiving Ecology's comments which were provided on October 30th at a meeting with the respective staff and counsel at City offices. After discussions with the AG's office, on December 24th the City's legal team requested a time extension to continue working on the ECs along with continued coordination with Ecology's legal team/AG office. In January, the city's legal team sent a spreadsheet containing all the easements pertaining to this and other sites

Ecology's site manager. On January 11, the Ecology site manager approved a three month extension of the schedule to finalize the environmental covenant for the site; the new due date was March 1. A second extension request through the end of July was granted on March 6, 2019 to allow for reviews, continued coordination and finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

D. <u>For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule</u>

The City's legal team continues to work on the environmental covenants and with the goal of accomplishing the task by the second extended deadline of July 30, 2019.

E. <u>All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample</u>

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.

Table 3-1B
Sampling Approach – Ground Water
SUBSEQUENT ROUNDS

Sample type	Sampling location	Sampling Frequency / Rationale	Analytes
Arsenic			
Point of compliance	BLMW-11 BLMW-12 MW-1	Quarterly for two years, then modify based on results and consultation with Ecology*	Total Arsenic Dissolved Arsenic Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O Field parameters

* If compliance monitoring from the Site shows that the arsenic remains at elevated concentrations for eight quarters of monitoring, with no other detections of petroleum hydrocarbon contamination, this data can be used to demonstrate that the elevated concentrations represents a locally high natural background for arsenic. Based on this evidence, a request can be made to remove the institutional controls for ground water at the site and discontinue monitoring.

Naphthalene, Methylnaphthalene, & 2-Methylnaphthalene

LANDING – To include in *A. A list of on-site activities that have taken place during this quarter*

During a meeting with Jerome Cruz, Ching Pi and John Kane, Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene will continued to be included in compliance groundwater monitoring for one well, BL-MW-12 only. Concentrations of these chemicals were above their respective MTCA cleanup standard.

F. **A list of deliverables for the upcoming quarter if different from the schedule.**
Same as the schedule

EXHIBIT D

Bothell Landing Facility
Schedule of Deliverables

Deliverables.	Due Date
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology
Combined TPH/Arsenic ground water monitoring reports	90 days after 4th quarter sampling
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

Site Name:	**BOTHELL PAINT & DECORATING**
Agreed Oder No.:	15748 (Effective date May 31, 2018)

A. A list of on-site activities that have taken place during this quarter

The following on-site activity has occurred this quarter: Groundwater compliance monitoring for the spring quarter was performed in May/June 2019. Sampling results are attached.

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests

There have been no deviations this quarter

C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter

There has been a deviation in the schedule this quarter with regard to

i. Groundwater sampling schedule for 2019/2020 – the site manager approved the proposed 2019/2020 schedule as follows (email correspondence is attached for reference):

- **Spring 2019**: May 20, 2019 – June 3, 2019
- **Summer 2019**: July 15, 2019 - August 5, 2019
- **Fall 2019**: October 7, 2019 – October 25, 2019
- **Winter 2020**: January 6, 2020 – January 20, 2020

ii. Finalizing the Environmental Covenants (ECs) for the site – the City's consultant attorney sent the revised EC packages to AAG on February 26th. According to the deliverables schedule, the Final ECs were due 30 days after receiving Ecology's comments which were provided on October 30th at a meeting with the respective staff and counsel at City offices. After discussions with the AG's office, on December 24th the City's legal team requested a time extension to continue working on the ECs along with continued coordination with Ecology's legal team/AG office. In January, the city's legal team sent a spreadsheet containing all the easements pertaining to this and other sites Ecology's site manager. On January 11, the Ecology site manager approved a three month extension of the schedule to finalize the environmental covenant for the site; the new due date was March 1. A second extension request through the end of July was granted on March 6, 2019 to allow for reviews, continued coordination and finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule

The City's legal team continued to work on the environmental covenants and with the goal of accomplishing the task by the extended deadline of July 30, 2019.

E. All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.

Table 3-1B
Sampling Approach – Ground Water
SUBSEQUENT ROUNDS

Sample type	Sampling location	Sampling Frequency / Rationale	Analytes
Petroleum hydrocarbons – Ground Water			
Point of Compliance	BPMW-6 BPMW-2R* BC-10	Quarterly for two years, then modify based on results and consultation with Ecology Duration: 5 years BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O, nitrate, manganese (soluble), sulfate, methane, alkalinity. Field parameters: dissolved oxygen, redox potential, pH, conductivity, temperature, ferrous iron
Petroleum hydrocarbons – Storm Water			
1 sample upgradient of Site, 2 samples on Site	See Figure 2	One time event	Total petroleum hydrocarbons, gasoline, diesel and oil range, BTEX TPH-G/BTEX, TPH-D, TPH-O, HVOCs
Arsenic – Ground Water			
Point of compliance	BPMW-1 BPMW-6 BC-10 BC-11	Same as petroleum hydrocarbon, but with additional quarterly monitoring for two years if TPH decreases to be in compliance** BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total Arsenic Dissolved Arsenic Field parameters

* BPMW-2R is a replacement well to be installed 30 to 35 feet northwest of BPMW-2, which was located in the middle of the newly constructed Horse Creek and therefore decommissioned.

F. <u>A list of deliverables for the upcoming quarter if different from the schedule.</u>
Same as the schedule

EXHIBIT D

Bothell Paint & Decorating Facility
Schedule of Deliverables

Deliverables.	**Due Date**
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/MNA/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology Duration: 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Combined TPH/MNA/Arsenic ground water monitoring reports	90 days after 4th quarter sampling Annually for a minimum of 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

Site Name:	**BOTHELL HERTZ**
Agreed Oder No.:	15747 (Effective date May 31, 2018)

A. A list of on-site activities that have taken place during this quarter

The following on-site activity has occurred this quarter: - Groundwater compliance monitoring for the spring quarter was performed in May/June 2019. Sampling results are attached.

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests

There have been no deviations this quarter

C. Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter

There has been a deviation in the schedule this quarter with regard to

i. Groundwater sampling schedule for 2019/2020 – the site manager approved the proposed 2019/2020 schedule as follows (email correspondence is attached for reference):

- **Spring 2019**: May 20, 2019 – June 3, 2019
- **Summer 2019**: July 15, 2019 - August 5, 2019
- **Fall 2019**: October 7, 2019 – October 25, 2019
- **Winter 2020**: January 6, 2020 – January 20, 2020

ii. Finalizing the Environmental Covenants (ECs) for the site – the City's consultant attorney sent the revised EC packages to AAG on February 26th. According to the deliverables schedule, the Final ECs were due 30 days after receiving Ecology's comments which were provided on October 30th at a meeting with the respective staff and counsel at City offices. After discussions with the AG's office, on December 24th the City's legal team requested a time extension to continue working on the ECs along with continued coordination with Ecology's legal team/AG office. In January, the city's legal team sent a spreadsheet containing all the easements pertaining to this and other sites Ecology's site manager. On January 11, the Ecology site manager approved a three month extension of the schedule to finalize the environmental covenant for the site; the new due date was March 1. A second extension request through the end of July was granted on March 6, 2019 to allow for reviews, continued coordination and finalizing the ECs. After the ECs are finalized, the next step will be to record the ECs after obtaining all the grantee signatures.

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule

The City's legal team continued to work on the environmental covenants and with the goal of accomplishing the task by the extended deadline of July 30, 2019.

E. All raw data (including laboratory analyses) received by Defendants during the past quarter and an identification of the source of the sample

Groundwater compliance monitoring (2019) was conducted per the CMP Table 3-1B (as modified below). A tabulation of the sampling results is attached.

Table 3-1B
Sampling Approach – Ground Water
SUBSEQUENT ROUNDS

Sample type	Sampling location	Sampling Frequency / Rationale	Analytes
Petroleum hydrocarbons – Ground Water			
Point of Compliance	HZMW-19 BLMW-8 BC-16	Quarterly for two years, then modify based on results and consultation with Ecology Duration: 5 years	Total petroleum hydrocarbons, diesel and oil range TPH-D, TPH-O, nitrate, manganese (soluble), sulfate, methane, alkalinity. Field parameters: dissolved oxygen, redox potential, pH, conductivity, temperature, ferrous iron
Arsenic – Ground Water			
Point of compliance	HZMW-1 HZMW-4 HZMW-12 HZMW-17 BC-16	Same as petroleum hydrocarbon, but with additional quarterly monitoring for two years if TPH decreases to be in compliance** BC-10 will be monitored for two quarters to confirm compliance, if results exceed cleanup levels, monitoring will be the same as other wells.	Total Arsenic Dissolved Arsenic Field parameters

F. A list of deliverables for the upcoming quarter if different from the schedule.

Same as the schedule

EXHIBIT D

Bothell Former Hertz Facility
Schedule of Deliverables

Deliverables.	Due Date
Draft Institutional Control (IC) Plan; Draft Environmental Covenant(s); and a Title Report	Within 120 days after the effective date of the Agreed Order
Final IC Plan and Final Environmental Covenant(s)	Within 30 days of receipt of Ecology comments on the Draft IC Plan and Draft Environmental Covenant(s).
Record Final Environmental Covenant(s) with King County Auditor	Within 5 days after Ecology's approval of the Final IC Plan or Ecology's signature as grantee of the Final Environmental Covenant(s), whichever occurs last.
Start ground water monitoring	Within 90 days after final CAP is approved
Combined TPH/MNA/Arsenic ground water monitoring	Quarterly for two years, then modify based on results and consultation with Ecology Duration: 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Combined TPH/MNA/Arsenic ground water monitoring reports	90 days after 4th quarter sampling Annually for a minimum of 5 years unless a different action is triggered by the decision tree shown in table 1 of the dCAP
Progress reports	Every 3 months unless Ecology authorizes less frequent reporting

From: Cruz, Jerome (ECY)
To: Jeff Jensen; John Kane
Cc: Nduta Mbuthia; Wang, Ching-Pi (ECY)
Subject: [EXTERNAL] RE: Kane Environmental Compliance Sampling Schedule for Hertz-Landing -Paint
Date: Thursday, April 4, 2019 7:57:32 AM

"

Jeff and John,

Let's proceed with your revised schedule below. The CMP calls for 8 quarters, but let's analyze the results and discuss if additional monitoring is necessary, if the City is willing to accept institutional controls with periodic reviews as the final remedy.

Let me know if you all agree.

Thanks,

Jerome

- **Winter 2019**: March 5, 2019 – March 15, 2019
- **Spring 2019**: May 20, 2019 – June 3, 2019
- **Summer 2019**: July 15, 2019 - August 5, 2019
- **Fall 2019**: October 7, 2019 – October 25, 2019
- **Winter 2020**: January 6, 2020 – January 20, 2020

DEPARTMENT OF ECOLOGY
State of Washington

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
http://www.ecy.wa.gov/programs/tcp/cleanup.html

From: Jeff Jensen [mailto:Jeff@kane-environmental.com]
Sent: Monday, April 1, 2019 4:28 PM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>; John Kane <jkane@kane-environmental.com>
Cc: Nduta Mbuthia <Nduta.Mbuthia@bothellwa.gov>; Wang, Ching-Pi (ECY) <CWAN461@ECY.WA.GOV>
Subject: RE: Kane Environmental Compliance Sampling Schedule for Hertz-Landing -Paint

Jerome,

Just to clarify, the ranges of dates listed for the proposed groundwater sampling events are hard start and stop dates, not a range of dates when sampling will begin. The compliance monitoring for Hertz, Paint, and Landing, as well as the performance monitoring for BSCSS, is anticipated to take a total of three weeks combined. That is why there is the three week range listed for each

quarter/event. We believe the proposed dates listed should provide a representative sampling event for each quarter. However, if you would like us to move some of the dates around we can certainly do that.

I have also attached updated tables which include the field parameters collected during the initial groundwater sampling event. I apologize for not including these in the original table. Going forward we will be sure to include this data in the tables.

As for the surface water data, all results came back non-detect. We will have data tables to deliver to Nduta later today.

Please let me know if you have any additional questions or comments.
Thanks,

Jeff Jensen, Project Geologist
Kane Environmental, Inc. | Environmental Issues. Business Solutions.
PO Box 31936, Seattle WA 98103
Headquarters 4015 13th Avenue West, Seattle, WA 98119
Direct: 206-673-5731 Cell: 425-344-3707 Toll Free 1-844-529-KANE
Jeff@kane-environmental.com www.kane-environmental.com

Seattle, WA | Tacoma, WA | Phoenix, AZ | Nationwide Services

From: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Sent: Friday, March 29, 2019 4:06 PM
To: John Kane <jkane@kane-environmental.com>
Cc: Nduta Mbuthia <Nduta.Mbuthia@bothellwa.gov>; Wang, Ching-Pi (ECY) <CWAN461@ECY.WA.GOV>; Jeff Jensen <Jeff@kane-environmental.com>
Subject: RE: Kane Environmental Compliance Sampling Schedule for Hertz-Landing -Paint

Hi John,
Given that the revised sampling schedule provides a range of dates, it still seems off to me because the ranges are so close you could have sampling between rounds that are at least 5 days apart! Since March 9, 2019 is the winter sampling round, could you construct a schedule that keeps to a quarterly interval and also begins and ends at the same period of time so that we can encompass the full seasonal cycle?

Also, since ORP measurements were taken , could you resubmit the Sept-Nov 2018 tables with the ORP or redox measurements (taking out “Draft” mark)? Also, what are the Horse creek stormwater samples showing? This was meant to see if the relocation of the Creek through the Paint site has not resulted in any recontamination by the Paint and BSCSS sites as it flows in this reach.

Thanks,

Jerome

Jerome B. Cruz, Ph.D.
Toxics Cleanup Program, Northwest Regional Office
3190 - 160th SE Bellevue, WA 98008
Tel: (425) 649-7094 Fax: (425) 649-7098
Jerome.Cruz@ecy.wa.gov
http://www.ecy.wa.gov/programs/tcp/cleanup.html

From: John Kane [mailto:jkane@kane-environmental.com]
Sent: Wednesday, March 27, 2019 1:11 PM
To: Cruz, Jerome (ECY) <JCRU461@ECY.WA.GOV>
Cc: Nduta Mbuthia <Nduta.Mbuthia@bothellwa.gov>; Wang, Ching-Pi (ECY) <CWAN461@ECY.WA.GOV>; Jeff Jensen <Jeff@kane-environmental.com>; John Kane <jkane@kane-environmental.com>
Subject: Kane Environmental Compliance Sampling Schedule for Hertz-Landing -Paint

Jerome,

We have addressed your comments in red below:

- Attached progress report says Winter sampling was to occur in January, yet the schedule letter says it was completed in March. Why was this delayed? Is winter sampling the second round of compliance monitoring?

  Per the email exchange between me (John Kane) and yourself on Friday February 8, 2019, sampling was to be conducted in February (See attached). Unfortunately the snow prevented us from starting when we had originally planned (2/11/19). Additionally, per my notes on the meeting between John Kane, Ching Pi, and yourself on February 1, 2019, groundwater sampling around the ERH system at the BSCSS site was to occur before the Paint, Hertz, and Landing sampling event. This, coupled with the bad weather, pushed the sampling into early March. Sampling in March represents the Winter 2019 Quarter especially due to the amount of snow and rain during mid to late February 2019.

- Attached report also says an end of the year report was to be submitted as part of the compliance monitoring reporting. I can't find any in my files.

  Attached email correspondence from 10/26 & 10/29 between yourself and Nduta which

discusses this point.

- What do you consider as the first round of sampling? Winter 2019? My records say the first round occurred on Sept. 6, 2018 (Hertz and Landing), and Nov. 20, 2018 (Paint). Also, if you consider March 9, 2019 as a quarter of monitoring, the next round proposed on April-22-May , 2019, seems too soon.

  Winter 2019 is considered the first Quarter of Quarterly Monitoring. The first groundwater sampling event (in September and November 2018) was considered the "Initial Round". We can push the second Quarter to the weeks of May 20, 2019 – June 3, 2019. The goal of the sampling schedule is meant to encompass all groundwater monitoring at the BSCSS, and the Paint, Hertz, and Landing sites. How does this look?:

  - **Winter 2019**: March 5, 2019 – March 15, 2019
  - **Spring 2019**: May 20, 2019 – June 3, 2019
  - **Summer 2019**: July 15, 2019 - August 5, 2019
  - **Fall 2019**: October 7, 2019 – October 25, 2019
  - **Winter 2020**: January 6, 2020 – January 20, 2020

- Winter 2019 dates seem too soon after Fall 2018 (Oct, then December is less than a quarter).

  Please see the amended proposed schedule above.

- What about Horse Creek sampling at the Paint site as required in the Paint CMP? When will this be done or has this been done?

  The surface water sampling in Horse Creek was conducted in March as a part of the Winter Quarter sampling event.

- First round of results (Sept-Nov 2018): Why is redox potential or ORP not reported as required in the XCMP for the three sites? If omitted, please include this measurement in the compliance sampling program. Also, the tables submitted say Draft on them. Were the data validated by the analytical lab? Can you include the analytical reports in the submissions?

  We have always collected redox potential and ORP (along with the other required field

parameters). I will be sure the field parameter data is included in all future tables. The original tables were submitted for review as a draft just in case requests to alter the formatting were made. The "Draft" mark can be removed. All data was reviewed and validated by the analytical laboratory. I will be sure that Nduta gets all of the laboratory analytical reports to include in the submissions.

- I would like to know if Kane Environmental will offer some interpretation and/or discussion on the results to account for the persistent high arsenic in groundwater. I would like to know if they expect this to be Ecology's scope of work.

  We would prefer to hold off on making any interpretations or discussions on the data until we have completed more quarterly monitoring events and collected more data.

Let us know if you have any additional comments or questions.

John Kane, CEO/President
Kane Environmental, Inc.
Environmental Issues. Business Solutions.
4015 13th Avenue West
Seattle, WA 98119

Tel 206-691-0476 Cell 206-715-2779
Toll Free 1-844-529-KANE
jkane@kane-environmental.com
www.kane-environmental.com

Seattle, WA | Phoenix, AZ | Nationwide Services

Table 1
Compliance Groundwater Sampling
Bothell Hertz Site
Bothell, Washington

Sample ID	Sample Date	Approximate Depth to Groundwater	Diesel Range Organics	Heavy Oil Range Organics	Arsenic		Cadmium		Chromium		Lead		Mercury		Dissolved Manganese	Semi-Volatile Organic Compounds (SVOCs)	Volatile Organic Compounds (VOCs)	Methane	Nitrate (as Nitrogen)	Sulfate	Ferrous Iron	Total Alkalinity (as CaCO3)	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity
		Feet Below Ground Surface	ug/L	ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mV	uS/cm
HZ-MW-1:W	9/4/2018	8.05	<49.8	<99.7	<1.75	<1.75	<0.200	<0.200	**13.6**	**12.8**	<0.500	<0.500	<0.100	<0.100	<2.00	nd	**PCE - 10.2**	<0.00863	1.69	7.42	0.0	52.1	6.52	8.48	63.7	140
	9/5/2019	6.5	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.18	5.59	152.5	149.3
	5/21/2019	6.81	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	5.99	7	66.7	159.6
HZ-MW-4:W	9/4/2018	7.61	<50.0	**124**	<1.75	<1.75	<0.200	<0.200	**1.15**	<1.00	<0.500	<0.500	<0.100	<0.100	**165**	nd	**SR**	<0.00863	1.7	37.4	0.0	116	6.37	2.36	12.8	359
	3/5/2019	5.8	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.27	0.24	133.6	486.1
	5/21/2019	6.37	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	6.1	0.35	26.2	426.1
HZ-MW-12:W	9/5/2018	10.85	**118** [b]	**253**	**4.84**	**5.54**	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	**4,090**	nd	nd	3.17	<0.1	0.367	2.5	608	6.38	0.32	33.1	1,180
	3/6/2019	8.33	-	-	**2.89**	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	6.37	0.59	-66.9	1,063
	5/22/2019	9.46	-	-	**4.20**	**3.20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0	-	6.01	0.26	-115.3	1,151
HZ-MW-17:W	9/4/2018	7.9	<50.0	<99.9	<1.75	<1.75	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	**234**	nd	**SR**	0.00892	<0.1	17.7	3.0	111	6.85	7.94	15	269
	3/5/2019	7.1	-	-	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	-	6.76	0.13	-24.9	269.6
	5/23/2019	7.08	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	6.31	1.02	-79.6	304
HZ-MW-19:W	9/5/2018	7.69	**125** [b]	**150**	<1.75	<1.75	<0.200	<0.200	<1.00	<1.00	<0.500	<0.500	<0.100	<0.100	**954**	nd	**SR**	0.0296	<0.1	65.6	3.5	198	6.34	0.48	26.1	513
	3/5/2019	6	**210** [b]	<98.5	-	-	-	-	-	-	-	-	-	-	**136**	-	-	0.0332	0.414 [H]	8.98	2.0	162	5.94	0.33	77.7	221.1
	5/21/2019	6.25	**410**	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	**720**	-	-	0.11	0.14	17	4.0	180	5.87	0.31	-11	330.9
BC-16:W	9/5/2018	8.77	**91.4** [b]	**104**	**3.34**	<1.75	<0.200	<0.200	**2.35**	<1.00	**2.91**	<0.500	<0.100	<0.100	**3,470**	nd	nd	2.18	<0.1	13	3.0	560	6.3	0.92	31.4	1040
	3/6/2019	3.78	<50.4	**179**	**2.56**	<1.75	-	-	-	-	-	-	-	-	**3,760**	-	-	3.44	0.31	270	3.0	371	6.37	0.44	-31	1118
	5/22/2019	5.89	<260	**450**	<3.3	<3.0	-	-	-	-	-	-	-	-	**4,600**	-	-	2,100	0.27	260	4.5	510	6.09	0.35	-114.1	1292
BLMW-8R:W	11/21/2018	8.53	**879** [b]	**1,680**	**6.63**	**2.12**	**0.276**	<0.200	**1.25**	<1.00	<0.500	<0.500	<0.100	<0.100	**1,070**	**SR**	nd	0.648	<0.1	2.37	2.5	244	6.56	0.19	43.5	570.7
	3/6/2019	7.72	<49.5	**234**	-	-	-	-	-	-	-	-	-	-	**3,480**	-	-	4.26	<0.100	1.7	2.5	348	6.74	0.31	-64.4	669.8
	5/21/2019	7.91	**400**	**720**	**7.10**	**5.60**	-	-	-	-	-	-	-	-	**2,400**	-	-	2.9	0.14	<5.0	3.0	310	6.46	0.27	-101.8	602.6
*MTCA Method A or Method B Cleanup Level^*			*500*	*500*	*5.0*		*5.0*		*50*		*15*		*2.0*		*(2,240)*	*Varies#*	*Varies#*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*

Notes:
All results reported in ug/L(micrograms per liter), or mg/L (milligrams per liter)
ug/L = micrograms per liter [equivalent to parts per billion (ppb)]
mg/L = milligrams per liter [equivalent to parts per million (ppm)]
Bold concentrations are detectable concentrations, below their Cleanup Level (if available).
Shaded and Bold concentrations are detectable concentrations, exceeding their Cleanup Level
nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results
# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes
b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
H = Holding times for preparation or analysis exceeded
SR = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.

Table 2
Compliance Groundwater Sampling
Bothell Landing Site
Bothell, Washington

Sample ID	Sample Date	Approximate Depth to Groundwater	Diesel Range Organics	Heavy Oil Range Organics	Arsenic		Cadmium		Chromium		Lead		Mercury		Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Other Semi-Volatile Organic Compounds (SVOCs)	Other Volatile Organic Compounds (VOCs)	Ferrous Iron	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity
		Feet Below Ground Surface	ug/L	ug/L	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L		mg/L	mV	uS/cm
					ug/L		ug/L		ug/L		ug/L		ug/L											
MW-1:W	9/6/2018	6.96	<50.0	**101**	<1.75	<1.75	<0.200	<0.200	<1.00	**3.51**	**0.911**	<0.500	<0.100	<0.100	<1.00	<0.503	<0.503	nd	nd	2.5	6.48	0.26	64.8	570
	3/11/2019	5.85	<52.8	<106	<1.75	<1.75	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.37	0.32	33.3	428.1
	5/24/2019	6.38	<260	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.05	0.39	-77.3	488.9
BL-MW-11:W	9/6/2018	9.84	**91.8 b**	**167**	**78.5**	**11.3**	<0.200	<0.200	**1.61**	**6.88**	**0.882**	<0.500	<0.100	<0.100	<1.00	<0.501	<0.501	nd	nd	2.0	6.48	0.12	-4.7	920
	3/6/2019	5.02	<50.5	**159**	**6.97**	**3.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	6.56	0.27	-49.1	388.8
	5/22/2019	8.31	<260	**510**	**7.9**	**7.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	6.17	0.25	-82.2	404.7
BL-MW-12:W	9/6/2018	9.51	**362 b**	**144**	**87.6**	**14.4**	<0.200	<0.200	**3.75**	**6.92**	**0.712**	<0.500	<0.100	<0.100	**370***	**13.3**	**12.3**	**SR**	**SR**	2.5	6.62	0.1	34.8	840
	3/11/2019	7.75	<53.1	**114**	**17.7**	**3.6**	-	-	-	-	-	-	-	-	<0.100	<0.100	<0.100	-	-	2.5	6.02	0.27	52.2	207.5
	5/22/2019	8.25	<260	<420	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	5.39	0.49	85.8	70.2
*MTCA Method A or Method B Cleanup Level^*			*500*	*500*	*5.0*		*5.0*		*50*		*15*		*2.0*		*160*	*(1.51)*	*32*	*Varies#*	*Varies#*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*

Notes:
All results reported in ug/L (micrograms per liter) , or mg/L (milligrams per liter)
ug/L = micrograms per liter [equivalent to parts per billion (ppb)]
mg/L = milligrams per liter [equivalent to parts per million (ppm)]
Bold concentrations are detectable concentrations, below their Cleanup Level (if available).
Shaded and Bold concentrations are detectable concentrations, exceeding their Cleanup Level
nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results
# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes
b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
SR = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.
- = Not analyzed
^ = MTCA Method B Cleanup Level in parentheses
* - Result from analysis by EPA Method 8260. Concentration of 160 ug/L reported from analysis by EPA Method 8270

Table 3
Compliance Groundwater Sampling
Bothell Paint Site
Bothell, Washington

Sample ID	Sample Date	Approximate Depth to Groundwater	Diesel Range Organics	Heavy Oil Range Organics	Arsenic		Cadmium		Chromium		Lead		Mercury		Dissolved Manganese	Semi-Volatile Organic Compounds (SVOCs)	Volatile Organic Compounds (VOCs)	Methane	Nitrate (as Nitrogen)	Sulfate	Ferrous iron	Total Alkalinity (as CaCO3)	pH	Dissolved Oxygen	Oxidation Reduction Potential	Conductivity
		Feet Below Ground Surface	ug/L	ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	Total ug/L	Dissolved ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mV	uS/cm
BPMW-2R:W	11/20/2018	8.08*	**51.4** [b]	<101	<1.75	<1.75	<0.200	<0.200	**1.72**	<1.00	<0.500	<0.500	<0.100	<0.100	**161**	**SR**	nd	0.106	<0.1	5.98	1.0	124	7.27	0.14	3.2	229.5
	3/7/2019	5.5	**122** [b]	**219**	-	-	-	-	**-**	-	-	-	-	-	**94**	**-**	-	0.651	<0.100	1.87	0.5	117	7.47	0.19	-64.7	240
	5/20/2019	7.98	<260	<420	-	-	-	-	**-**	-	-	-	-	-	**60**	**-**	-	0.66	0.055	<5.0	0.5	110	7.25	0.26	-120.9	235
BPMW-6:W	11/20/2018	2.87	<50.2	**194**	**16.5**	**15.0**	**0.207**	<0.200	**4.51**	**2.94**	**4.46**	**1.09**	<0.100	<0.100	**67.7**	nd	nd	0.511	4.26	19.9	0.0	68.0	5.96	0.11	105.4	292.8
	3/7/2019	2.25	<50.3	<101	**14.7**	**13.8**	-	-	**-**	**-**	**-**	**-**	-	-	**27.7**	-	-	2.25	10 [e]	5.18	0.5	25.7	5.68	0.32	98.9	159.2
	5/20/2019	1.4	<270	**500**	**9.3**	**8.4**	**-**	-	**-**	**-**	**-**	**-**	-	-	**26**	-	-	1.8	25	<5.0	0.5	44.0	5.87	0.44	32.8	359.6
BC-10:W	11/27/2018	9.71	<49.9	<99.8	<1.75	<1.75	<0.200	<0.200	**1.03**	<1.00	<0.500	<0.500	<0.100	<0.100	**184**	nd	nd	0.958	<0.1	6.41	2.0	160	6.53	0.38	27.7	384.7
	3/15/2019	9.42	<50.3	<101	<1.75	<1.75	-	-	-	-	-	-	-	-	**194**	-	-	0.0872	<0.10	6.22	3.0	167	6.62	0.23	-1	351
	5/23/2019	10.9	<260	<410	<3.3	<3.0		-	**-**	-	-	-	-	-	**150**	-	-	0.23	<0.050	6	4.0	160	6.27	0.28	-149	348.8
BC-11R	3/7/2019	10.06	-	-	<1.75	<1.75	-	-	**-**	-	-	-	-	-	**-**	-	-	-	-	-	2.0	-	6.44	0.26	-4.8	467.4
	5/20/2019	11.06	-	-	<3.3	<3.0	-	-	**-**	-	-	-	-	-	**-**	-	-	-	-	-	4.0	-	6.22	0.33	-45.7	461.9
BPMW-1	3/7/2019	12.56	-	-	**12.9**	**4.83**	-	-	**-**	-	-	-	-	-	**-**	-	-	-	-	-	2.5	-	6.52	0.24	0.4	515.6
	5/23/2019	12.35	-	-	**22.0**	**11.0**	-	-	**-**	-	-	-	-	-	**-**	-	-	-	-	-	3.0	-	6.21	0.37	-162.7	514.9
*MTCA Method A or Method B Cleanup Level^*			*500*	*500*	*5.0*		*5.0*		*50*		*15*		*2.0*		*(2,240)*	*Varies#*	*Varies#*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*

Notes:
All results reported in ug/L(micrograms per liter), or mg/L (milligrams per liter)
ug/L = micrograms per liter [equivalent to parts per billion (ppb)]
mg/L = milligrams per liter [equivalent to parts per million (ppm)]
Bold concentrations are detectable concentrations, below their Cleanup Level (if available).
Shaded and Bold concentrations are detectable concentrations, exceeding their Cleanup Level
nd = No analytes detected above the laboratory reporting limit. See laboratory analytical report for full list of results
# = Various cleanup levels for multiple analytes. See laboratory analytical report for full list of analytes
* = Well is angled at approximately 47 degree angle
b = Identified as Diesel Range Organics, indicating the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

SR = Minor detections of other VOCs or SVOCs, at concentrations below state cleanup levels. See analytical report for specific detections.
- = Not analyzed
^ = MTCA Method B Cleanup Level in parentheses