



City of Bothell™

January 15, 2020

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 #7

Reporting Period: Oct 1 – Dec 31, 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) continues to be coordinated by the respective legal staff at Ecology and City.

Please contact me if you have any questions.

Sincerely,

Nduta Mbuthia

Nduta Mbuthia

Public Works Department
18415 101st Ave NE
Bothell, WA 98011
425.806.6800

Reporting Period: Oct 1 – Dec 31, 2019
 Date submitted (electronically): January 15, 2020
 Date mailed (certified w/return receipt): January 17, 2020
 Prepared by: Nduta Mbuthia, Project Coordinator
 City of Bothell, Public Works Department
 Phone: 425.806.6829
 Email: nduta.mbuthia@bothellwa.gov

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- 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 fall quarter was performed in October 2019. Sampling results are attached.
- B. **Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests**
 None
- C. **Description of all deviations from the Schedule (Exhibit D) during the current quarter and any planned deviations in the upcoming quarter**
 Finalizing the Environmental Covenants (ECs) is still pending – the City’s consultant attorney and the AAG are still working on finalizing the ECs. Met at Ecology offices on December 19 to discuss covenants
- D. **For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule**
 None. Anticipated GW compliance monitoring schedule below received Ecology site manager’s concurrence:-
 Q1 – Winter 2019: March 5, 2019 – March 15, 2019
 Q2 – Spring 2019: May 20, 2019 – June 3, 2019
 Q3 – Summer 2019: July 15, 2019 - August 5, 2019
 Q4 – Fall 2019: October 7, 2019 – October 25, 2019
 Q5 – Winter 2020: January 6, 2020 – January 20, 2020
 Q6 – Spring 2020: Week of April 6, 2020 through week of April 20, 2020
 Q7 – Summer 2020: Week of July 6, 2020 through week of July 20, 2020
 Q8 – Fall 2020: Week of October 5, 2020 through week of October 19, 2020
- 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
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**

<u>Deliverables.</u>	<u>Due Date</u>
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 4 th 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 October 2019. Sampling results are attached.

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

None

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

Finalizing the Environmental Covenants (ECs) is still pending – the City’s consultant attorney and the AAG are still working on finalizing the ECs. Met at Ecology offices on December 19 to discuss covenants

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

None. Anticipated GW compliance monitoring schedule below received Ecology site manager’s concurrence:-

- Q1 – Winter 2019: March 5, 2019 – March 15, 2019
- Q2 – Spring 2019: May 20, 2019 – June 3, 2019
- Q3 – Summer 2019: July 15, 2019 - August 5, 2019
- Q4 – Fall 2019: October 7, 2019 – October 25, 2019
- Q5 – Winter 2020: January 6, 2020 – January 20, 2020
- Q6 – Spring 2020: Week of April 6, 2020 through week of April 20, 2020
- Q7 – Summer 2020: Week of July 6, 2020 through week of July 20, 2020
- Q8 – Fall 2020: Week of October 5, 2020 through week of October 19, 2020

D. 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.

- E. A list of deliverables for the upcoming quarter if different from the schedule.
Same as the schedule

EXHIBIT D

Bothell Paint & Decorating Facility Schedule of Deliverables

<u>Deliverables.</u>	<u>Due Date</u>
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 4 th 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 October 2019. Sampling results are attached.

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

None

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

Finalizing the Environmental Covenants (ECs) is still pending – the City’s consultant attorney and the AAG are still working on finalizing the ECs. Met at Ecology offices on December 19 to discuss covenants

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

None. Anticipated GW compliance monitoring schedule below received Ecology site manager’s concurrence:-

Q1 – Winter 2019: March 5, 2019 – March 15, 2019

Q2 – Spring 2019: May 20, 2019 – June 3, 2019

Q3 – Summer 2019: July 15, 2019 - August 5, 2019

Q4 – Fall 2019: October 7, 2019 – October 25, 2019

Q5 – Winter 2020: January 6, 2020 – January 20, 2020

Q6 – Spring 2020: Week of April 6, 2020 through week of April 20, 2020

Q7 – Summer 2020: Week of July 6, 2020 through week of July 20, 2020

Q8 – Fall 2020: Week of October 5, 2020 through week of October 19, 2020

D. 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.

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

Same as the schedule

**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

EXHIBIT D

Bothell Former Hertz Facility Schedule of Deliverables

<u>Deliverables.</u>	<u>Due Date</u>
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 4 th 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

December 19, 2019

Boshell sites environmental covenants/institutional controls

10:00 am

Ecology NWRD

Sign-in sheet

NAME	ORGANIZATION	Phone or email
Kara Tebean	AGO	(360) 800 586-3623
Jerome Cruz	TCP	425-649-7094
Craig Trueblood	KPLBids	206-370-8368
John Kane	Kane Env.	206 715-2779
ROBERT WARREN	ELY	425-649-7054
Nduta Moutria	C.O.B	425-806-6829

From: [Jeff Jensen](#)
To: [Cruz, Jerome \(ECY\)](#)
Cc: [John Kane](#); [Nduta Mbutia](#)
Subject: [EXTERNAL] Bothell Hertz, Landing, and Paint GW Analytical Results
Date: Wednesday, November 27, 2019 8:13:12 AM
Attachments: [Table 1 - Bothell Hertz - GW Analytical Results.pdf](#)
[Table 2 - Bothell Landing - GW Analytical Results.pdf](#)
[Table 3 - Bothell Paint - GW Analytical Results.pdf](#)
[Bothell Hertz - Laboratory Analytical Reports - 2019-10.pdf](#)
[Bothell Landing - Laboratory Analytical Reports - 2019-10.pdf](#)
[Bothell Paint - Laboratory Analytical Reports - 2019-10.pdf](#)

Stop! Look! Think before you click! This message originated from outside the City of Bothell network. Use caution when clicking links or opening attachments.

Jerome,

I have attached the GW Analytical Tables for Bothell Hertz, Landing, and Paint, as well as the laboratory analytical reports. Please let me know if you need anything else.

Thanks,

Jeff Jensen, Project Geologist

Kane Environmental, Inc. | Environmental Issues. Business Solutions.

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Table 1
Compliance Groundwater Sampling
Bothell Hertz Site
Bothell, Washington

Sample ID	Sample Date	Approximate Depth to Groundwater Feet Below Ground Surface	Diesel Range Organics ug/L	Heavy Oil Range Organics ug/L	Arsenic		Cadmium		Chromium		Lead		Mercury		Dissolved Manganese ug/L	Semi-Volatile Organic Compounds (SVOCs) ug/L	Volatile Organic Compounds (VOCs) ug/L	Methane mg/L	Nitrate (as Nitrogen) mg/L	Sulfate mg/L	Ferrous Iron mg/L	Total Alkalinity (as CaCO ₃) mg/L	pH	Dissolved Oxygen mg/L	Oxidation Reduction Potential mV	Conductivity uS/cm	
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved													
					ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L													
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	
	7/16/2019	7.2	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.23	7.98	158.3	203.4	
	10/16/2019	7.45	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.4	3.56	148.7	200.1	
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	
	7/16/2019	7.2	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.05	4.65	114.6	396	
	10/11/2019	7.13	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	6.37	1.88	100.1	353.8	
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	
	7/19/2019	10.35	-	-	4.60	3.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	-	6.14	0.09	9.7	1,220	
	10/9/2019	10.7	-	-	4.40	3.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	6.38	0.03	-39.3	1,133	
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	
	7/17/2019	7.63	-	-	<3.0	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	6.65	0.07	-12.1	8.44	
	10/11/2019	7.7	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	6.98	0.73	41.4	340.5	
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 [†]	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	
	7/16/2019	7.1	<260	<420	<3.0	<3.0	-	-	-	-	-	-	-	-	850	-	-	0.035	<0.050	44	2.0	210	6.09	0.12	45.9	520.9	
	10/16/2019	6.8	340	950	<3.3	<3.0	-	-	-	-	-	-	-	-	840	-	-	0.018	<0.050	48	1.5	190	6.33	0.04	15.9	486.5	
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	-	-	2.1	0.27	260	4.5	510	6.09	0.35	-114.1	1292	
	7/19/2019	7.63	<260	540	<3.3	<3.0	-	-	-	-	-	-	-	-	4,800	-	-	8.9	<0.050	160	2.0	560	6.15	0.84	39.7	1347	
	10/11/2019	8.32	<270	<440	<3.3	<3.0	-	-	-	-	-	-	-	-	3,900	-	-	6	<0.050	61	1.0	520	6.36	0.32	-35.3	1150	
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	-	-	2.90	0.14	<5.0	3.0	310	6.46	0.27	-101.8	602.6	
	7/17/2019	8.34	470	1,000	8.10	6.50	-	-	-	-	-	-	-	-	2,700	-	-	3.30	<0.050	<5.0	2.0	340	6.36	0.06	-27.4	746	
	10/11/2019	8.34	<270	720	27	16	-	-	-	-	-	-	-	-	2,600	-	-	1.9	<0.050	<5.0	1.5	370	6.97	0.07	-90.5	776	
MTCA Method A or Method B Cleanup Level ^a			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	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).
† = 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	Total		Dissolved		Total		Dissolved		Total		Dissolved		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
					Arsenic	Cadmium	Chromium	Lead	Mercury	ug/L	ug/L	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		
	7/17/2019	7.05	<260	470	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	3.0	6.26	0.19	5.9	586		
	10/8/2019	6.72	<250	<400	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.49	0.04	-8.8	512		
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		
	7/19/2019	9.44	<260	<420	27	21	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	6.33	0.06	-28.9	589.6		
	10/9/2019	9.44	<260	450	30	24	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5	6.59	0.14	-100.5	601		
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		
	7/22/2019	9.52	<260	790	16.0	14.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	5.91	0.04	84.8	500.3		
	10/9/2019	9.6	<250	<400	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	5.83	0.13	171.4	66.3		
MTCA Method A or Method B Cleanup Level^			500	500	5.0	5.0	5.0	5.0	50	15	2.0	160	(1.51)	32	Varies#	Varies#	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).
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	Total		Total		Total		Total		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		
					Arsenic	Dissolved	Cadmium	Dissolved	Chromium	Dissolved	Lead	Dissolved													Mercury	Dissolved
		Feet Below Ground Surface	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	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
	7/18/2019	8.46*	<260	<420	-	-	-	-	-	-	-	-	-	-	92	-	-	1.2	<0.050	<5.0	0.5	110	7.14	0.07	38.9	258.7
	10/10/2019	8.50*	<260	<410	-	-	-	-	-	-	-	-	-	-	120	-	-	0.9	<0.050	<5.0	0.5	110	7.51	0	-78.5	246.7
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
	7/18/2019	3.14	<300	<490	44.0	38.0	-	-	-	-	-	-	-	-	130	-	-	5.9	<0.050	<5.0	1.5	120.0	6.06	0.07	109.9	382.4
	10/10/2019	2.71	<290	740	9.1	5.8	-	-	-	-	-	-	-	-	190	-	-	4.4	9.1	<5.0	1.0	110.0	6.2	0.02	99.5	364
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	
	7/18/2019	11.87	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	6.13	0.07	50	509.6	
	10/10/2019	11.7	-	-	<3.3	<3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	6.51	0.01	-20.8	482.9	
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	
	7/19/2019	12.42	-	-	14.0	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.5	-	6.56	0.08	-23.3	535.6	
	10/10/2019	12.16	-	-	17.0	15.0	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0	-	6.62	0	-43.9	509	
MTCA Method A or Method B Cleanup Level [^]			500	500	5.0	5.0	5.0	5.0	50	15	2.0	2.0	(2,240)	Varies#	Varies#	n/a	n/a	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

From: [Cruz, Jerome \(ECY\)](#)
To: [Jeff Jensen](#); [John Kane](#)
Cc: [Nduta Mbutia](#); [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

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

"

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



Jerome B. Cruz, Ph.D.

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<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 Mbutia <Nduta.Mbutia@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

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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 Mbutia <Nduta.Mbutia@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.
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<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 Mbutia <Nduta.Mbutia@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.

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