January 19, 2018

TO: Cris Matthews (Ecology)
FROM: Karen Mixon (URS)

CC: Mike Droppo (Kinder Morgan), Patrick Davis (Trans Mountain), Cary Brown (URS), Demetrio Cabanillas (URS), Dan Heimbigner (Whatcom Environmental)

RE:	URS Progress Report – October 1 to December 31, 2017
PROJECT:	Cleanup Action Consent Decree No. 14-2-01294-9 (effective 6-5-2014) Laurel Station 1009 E. Smith Road, Bellingham, Washington
TRANS MOUNTAIN PM:	Mike Droppo
ECOLOGY CASE MGR:	Cris Matthews
URS PROJ NO:	60533558
URS PROJ MGR:	Karen Mixon

Introduction:
This progress report is presented in accordance with Consent Decree 14-2-01294-9 (effective 6-5-2014) and is intended to present the information as noted under Section XI PROGRESS REPORTS in the Consent Decree.

Work Accomplished During Reporting Period:

DPE System Operation
The DPE well locations are shown on attached **Figure 2 Site Plan and DPE Well Locations**.

The system operated in SVE mode in October with 5 to 8 wells online (DPE-1, DPE-2, DPE-3, DPE-4, DPE-5, DPE-6, DPE-7, and/or DPE-8). In November and December, the system operated in SVE mode with 5 wells online (DPE-2, DPE-3, DPE,-6, DPE-7, and DPE-8) and 4 to 5 wells online (DPE-2, DPE-3, DPE,-6, DPE-7, and/or DPE-8), respectively. There was no system downtime in October. In November, the system was down for 8 days related to carbon changeout activities. In December, the system was down only 1 day due to a Knock Out Tank high level alarm that was quickly addressed. The well operation during this reporting period was adjusted based on removal rates of the total system and individual wells. Based on system operation and increasing groundwater levels, the planned quarterly maintenance for December 2017 is rescheduled to be done with the switch to DPE mode expected to occur in January 2018.

No treated groundwater was generated from the system in October. In November and December, 157 gallons and 88 gallons, respectively, of condensate were generated from the system. Treated groundwater from the system was sampled weekly by Whatcom Environmental as required by the Administrative Order to the facility NPDES permit if water was discharged. There were no exceedances of indicator levels specified in the permit.

As of December 27, 2017, approximately 3,518 pounds (12.0 barrels) of constituents of concern (COCs) have been removed from the vapor phase since the system started operating in July 2015. Graphs showing the cumulative removal of COCs from vapor by the system through December 27, 2017 are attached to this report. The pounds removed are based on calculations made using PID and flow measurements at the combined vapor monitoring point prior to the vapor GAC vessels. As of December 27, approximately 134,020 gallons of water have been removed from the subsurface since the system was started in July 2015. A graph showing groundwater volumes removed is included with this report. No treated groundwater was removed during

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October and water removed in November and December was due to condensate in the system. No measureable product has been observed or recovered by the system to date.

Air monitoring using FID and PID field instruments was conducted by Whatcom Environmental weekly to monitor the vapor GAC treatment system. The carbon was changed out if the PID measurements at the mid-treatment location exceeded 50 ppm. The vapor GAC was changed out on November 28, 2017.

In August, URS collected vapor samples for laboratory analysis for methane, BTEX, and total petroleum hydrocarbons (gasoline- and diesel-range) simultaneously with field FID and PID measurements from selected well locations and from pre- and post-treatment GAC sampling locations. The purpose of this data collection was to evaluate continuation of both FID and PID measurements in the field (currently the PID measurement is used to determine GAC change-outs) and to assess if any refinements were warranted to the mass removal calculations. This evaluation is in process.

Groundwater Monitoring

The sampling program was revised from the plan presented in the Compliance Monitoring Plan (CMP, URS 2015) following a discussion with Cris Matthews on October 1, 2015. The revision was necessary to account for the change to the well installations for the DPE system and monitoring well network during the construction phase of the cleanup action. The well locations are shown on attached **Figure 2 Site Plan and DPE Well Locations**. Wells MW-4, MW-6, MW-15, MW-16, and DPE-4 are intended to be sampled quarterly.

URS conducted groundwater sample collection for the 3rd quarter of 2017 on September 27, 2017 as described in the Progress Report dated October 16, 2017. Based on water levels in the wells, only well MW-6 was sampled. Due to limited water and recharge in this well, the analysis for PAHs was not done for the 3rd quarter sampling. Water level data for the monitoring well network is provided in **Table 1** attached to this progress report. The 4th quarter 2017 sampling planned for December 27, 2017 was delayed until January 4, 2018 to avoid longer shutdown of the DPE system over the holiday period. URS notified Ecology to confirm the change in schedule was acceptable.

URS completed the data review for the 3rd quarter 2017 groundwater sample collection. The summary data table (**Table 2**), data validation memo, and laboratory report are attached to this progress report. Diesel/oil-range petroleum hydrocarbons (0.76 mg/L) at well MW-6 were above the site groundwater cleanup level of 0.5 mg/L. BTEX and gasoline-range petroleum hydrocarbons were not detected.

Submittals

- The CMP update is in internal review at URS.
- The Completion Report was submitted to Ecology electronically on December 24, 2017. No paper copy was requested for this submittal at this time.

Deviations to Approved Plans Not Previously Documented:
None

Deviation to Scope of Work and Schedule as Presented in the Cleanup Action Plan (Exhibit A of Consent Decree):
There were no changes from previous progress reports to the overall Scope of Work described in the Cleanup Action Plan (CAP).

Data Received During Reporting Period:

- Groundwater monitoring data collected on September 27, 2017

Plans for the Next Reporting Period:
The following are planned activities for the period from January 1 through March 31, 2018.

- Continue to operate and maintain the DPE system.
- Complete the supplement to the Compliance Monitoring Plan for quarterly groundwater, air, and NPDES monitoring associated with discharges from the DPE treatment systems.
- Respond to Ecology comments for the Completion Report previously referenced.
- Review data from the January 4, 2018 groundwater sampling and prepare for submittal to Ecology with progress report in April 2018.
- Submit the quarterly groundwater data for 2017 to Ecology's EIM database.
- Complete the 1st quarter 2018 groundwater sample collection in March 2018.
- Present a draft Environmental Restrictive Covenant for the site as related to remaining TPH contamination.

Please contact Karen Mixon at (206) 438-2234 if you have any questions or comments regarding this progress report.

References:
URS Corporation, 2015. Final Compliance Monitoring Plan, Laurel Station, 1009 East Smith Road, Bellingham, Washington, January 16.

Attachments:
Figure 2, Site Plan and DPE Well Locations (from the O&M Manual, February 5, 2016)
DPE System Performance Graphs, December 2017
Table 1 – Monitoring Well Groundwater Elevation Data Summary
Table 2 – Quarterly Groundwater Monitoring Results
Data Validation Report – Quarterly Groundwater Samples – September 2017
ARI Lab Report 17I0430

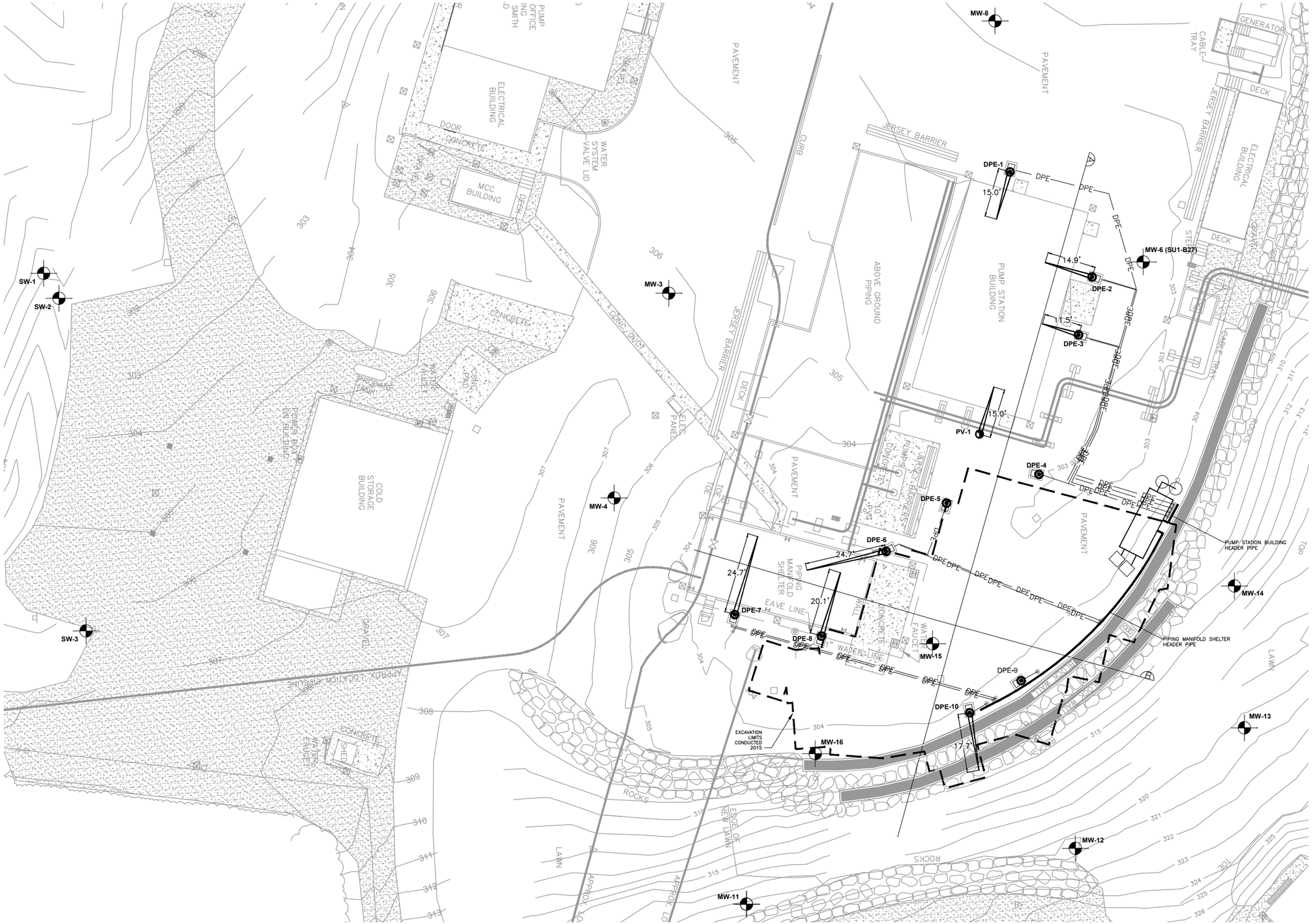


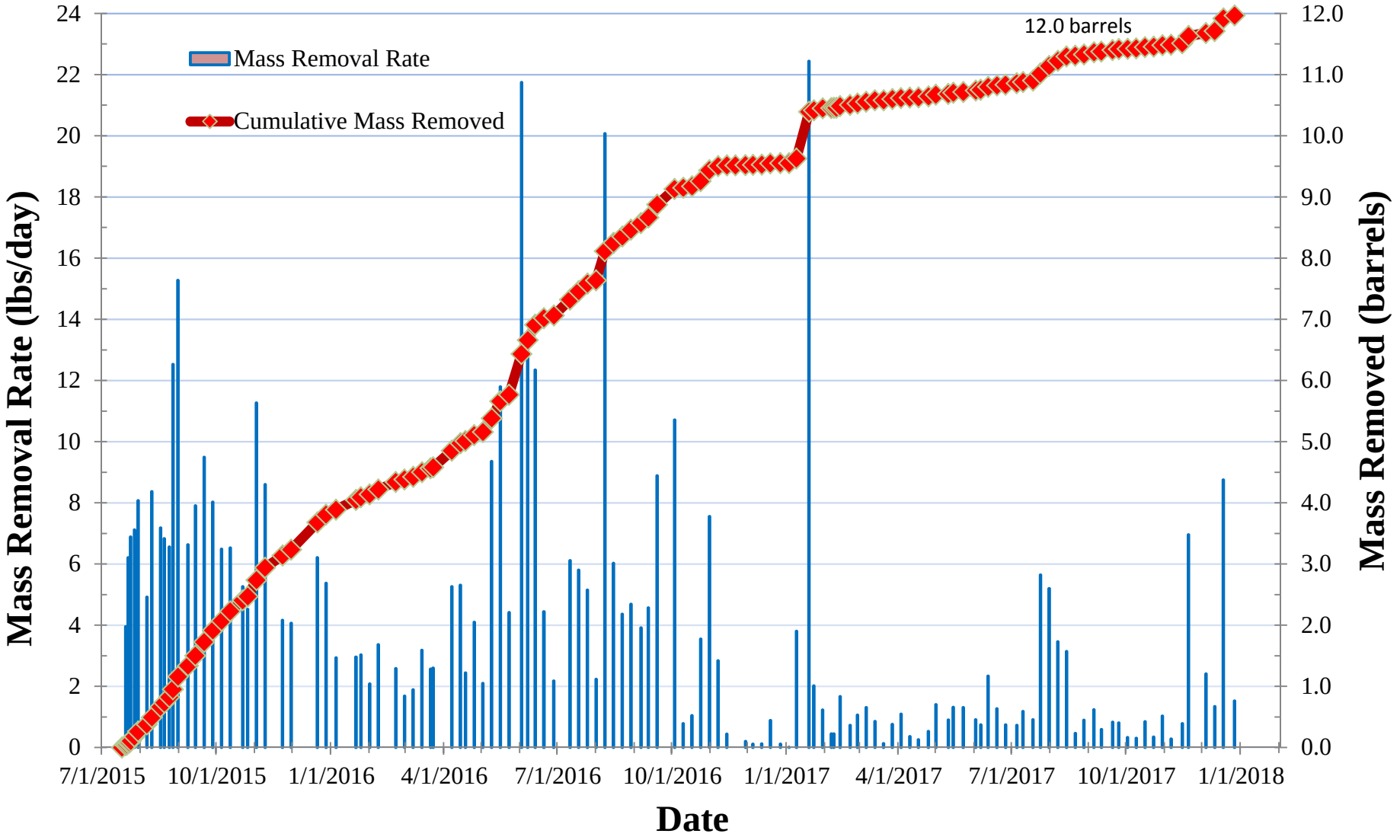
Figure 2
Site Plan and DPE Well Locations

Laurel Station
Bellingham, Washington

URS

COMBINED SYSTEM MASS REMOVAL DATA

Laurel Station DPE System

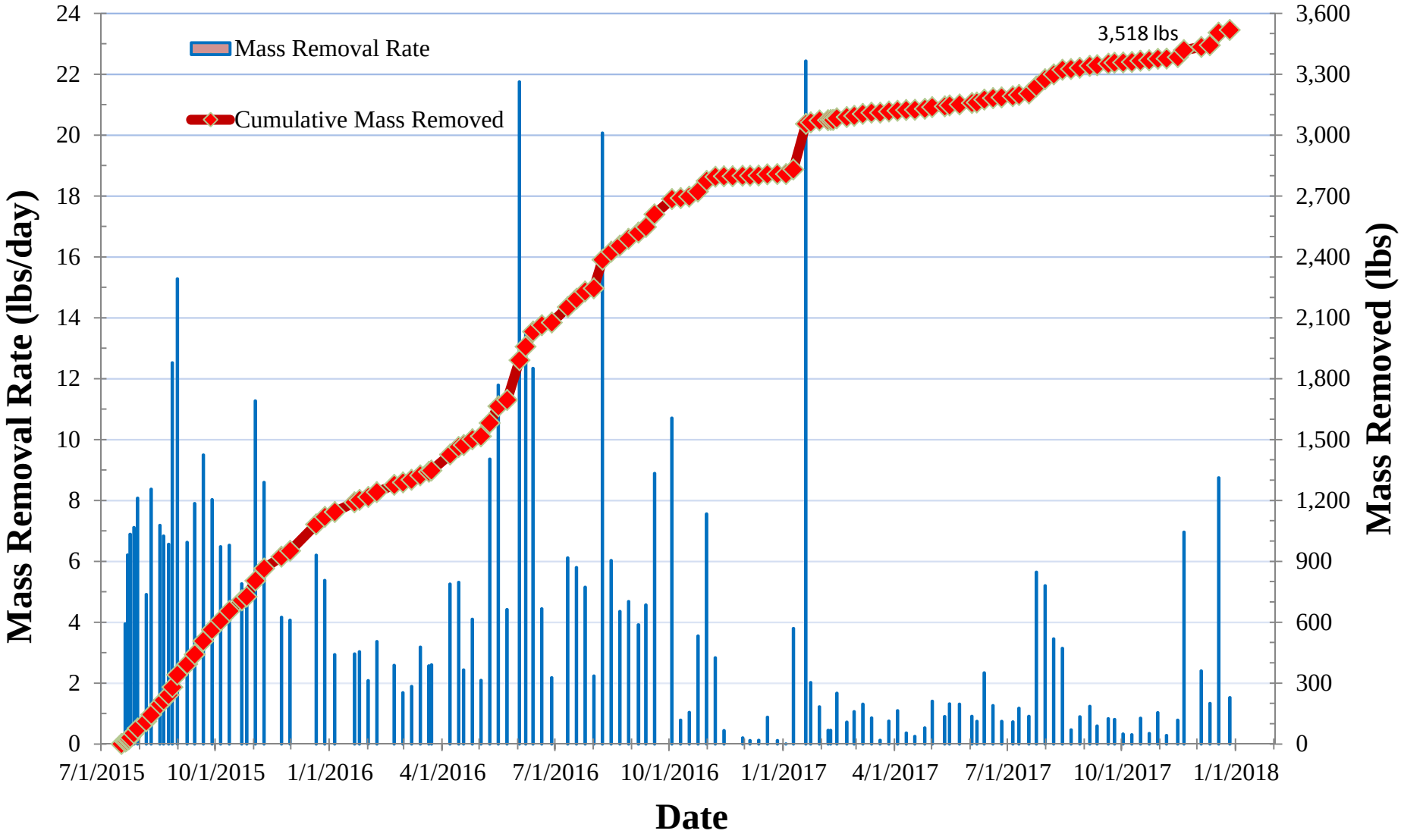


Notes:

1. Data shown from July 17, 2015 through December 27, 2017, after approximately 29 months of operation.
2. The Cumulative Mass Removed is based on data taken from the pre-treatment sampling port directly before carbon treatment.

COMBINED SYSTEM MASS REMOVAL DATA

Laurel Station DPE System



Notes:

1. Data shown from July 17, 2015 through December 27, 2017, after approximately 29 months of operation.
2. The Cumulative Mass Removed is based on data taken from the pre-treatment sampling port directly before carbon treatment.

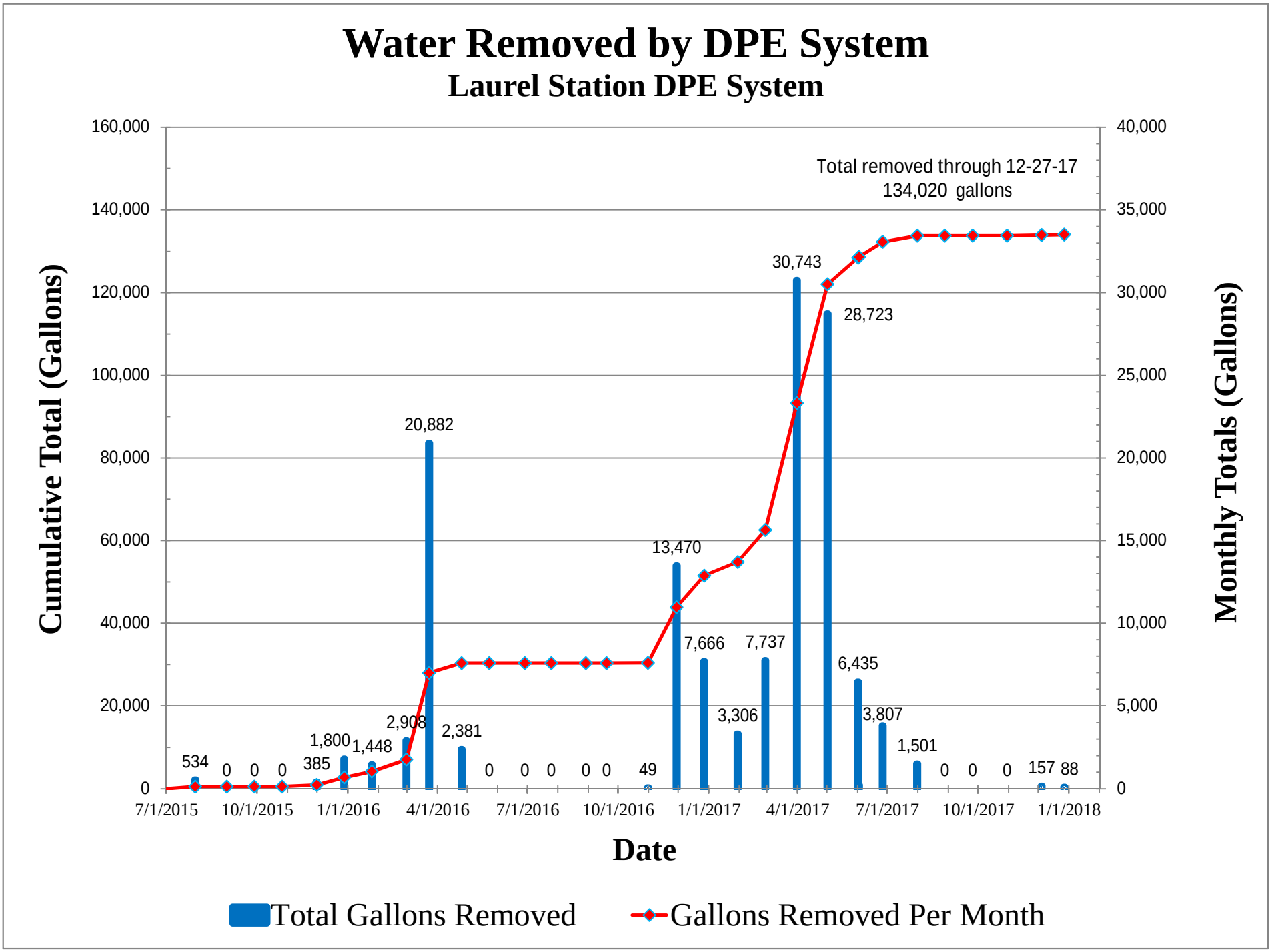

Water Removed by DPE System
Laurel Station DPE System
Total removed through 12-27-17
134,020 gallons
Cumulative Total (Gallons)
Monthly Totals (Gallons)
Date
Total Gallons Removed
Gallons Removed Per Month
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017
1/1/2018
534
0
0
0
385
1,800
1,448
2,908
20,882
2,381
0
0
0
0
0
49
13,470
7,666
3,306
7,737
30,743
28,723
6,435
3,807
1,501
0
0
0
157
88

Table 1
Monitoring Well Groundwater Elevation Data Summary
Laurel Station
Bellingham, Washington

Well ID	Date Measured	Total Depth[a] (ft-TOC)	TOC Elevation[b] (ft-NAVD88)	Approximate Screen Interval (ft-bgs)	Approximate Screen Interval Elevation (ft-NAVD88)	Depth to Groundwater (ft-TOC)	Groundwater Elevation (ft-NAVD88)	Thickness of Water Column (ft)
SW-1	4/23/2015	18.50				4.30	296.34	14.20
	12/14/2015	18.35				4.10	296.54	14.25
	1/25/2016	18.68				5.09	295.55	13.59
	2/22/2016 *	17.39				14.20	286.44	3.19
	3/21/2016	18.57				5.08	295.56	13.49
	4/25/2016	18.59				DRY	NC	NC
	5/23/2016	18.62				DRY	NC	NC
	6/27/2016	18.40				4.72	295.92	13.68
	8/8/2016	18.37				4.85	295.79	13.52
	8/30/2016	18.40				3.60	297.04	14.80
	9/26/2016	18.37				4.85	295.79	13.52
	10/24/2016	18.40				4.54	296.10	13.86
	11/21/2016	18.36				4.65	295.99	13.71
	12/21/2016	18.40	300.64	5 - 20	295.64 - 280.64	4.43	296.21	13.97
	1/23/2017	18.40				2.80	297.84	15.60
	3/6/2017	18.25				3.48	297.16	14.77
	3/21/2017	18.52				4.17	296.47	14.35
	3/29/2017	18.45				2.82	297.82	15.63
	6/21/2017	18.39				4.95	295.69	13.44
	6/26/2017	18.56				5.65	294.99	12.91
	7/31/2017	18.41				7.18	293.46	11.23
	8/28/2017	18.38				7.69	292.95	10.69
	9/25/2017	18.27				5.70	294.94	12.57
	9/27/2017	18.20				5.97	294.67	12.23
	10/30/2017	18.31				5.00	295.64	13.31
	11/20/2017	18.37				3.09	297.55	15.28
	12/18/2017	18.44				2.99	297.65	15.45
SW-2	4/23/2015	49.75				37.59	263.78	12.16
	2/22/2016	50.26		40 - 50	261.37 - 251.37	DRY	NC	NC
	3/21/2016	50.03				36.86	264.51	13.17
	4/25/2016	50.25				DRY	NC	NC
	5/23/2016	50.15				DRY	NC	NC
	6/27/2016	49.75				37.61	263.76	12.14
	8/8/2016	50.20				37.64	263.73	12.56
	8/30/2016 *	56.60				38.02	263.35	18.58
	9/26/2016	50.47				37.87	263.50	12.60
	10/24/2016 *	55.00				38.29	263.08	16.71
	11/21/2016	51.30				37.44	263.93	13.86
	12/21/2016	50.69				37.23	264.14	13.46
	1/23/2017 *	53.50	301.37			37.53	263.84	15.97
	3/6/2017	49.60				37.29	264.08	12.31
	3/21/2017	49.91				46.69	254.68	3.22
	3/29/2017	49.89				36.85	264.52	13.04
	6/21/2017	49.61				37.21	264.16	12.40
	6/26/2017	50.10				37.42	263.95	12.68
	7/31/2017	49.81				37.84	263.53	11.97
	8/28/2017	49.82				37.79	263.58	12.03
	9/25/2017	49.87				37.83	263.54	12.04
	9/27/2017	49.69				37.97	263.40	11.72
	10/30/2017	49.84				38.09	263.28	11.75
	11/20/2017	49.83				38.98	262.39	10.85
	12/18/2017	49.92				37.92	263.45	12.00
SW-3[c]	4/23/2015	34.75				32.19	277.29	2.56
	12/14/2015	34.78				33.11	276.37	1.67
	1/25/2016	35.12				32.40	277.08	2.72
	2/22/2016	34.86				DRY	NC	NC
	3/21/2016	34.91				31.98	277.50	2.93
	4/25/2016	34.91				DRY	NC	NC
	5/23/2016	35.03				DRY	NC	NC
	6/27/2016	34.70				DRY	NC	NC
	8/8/2016 *	32.60				DRY	NC	NC
	8/30/2016	35.10				32.40	277.08	2.70
	9/26/2016	35.20				33.29	276.19	1.91
	10/24/2016	34.69				32.65	276.83	2.04
	11/21/2016 *	33.77				32.17	277.31	1.60
	12/21/2016	35.14	309.48	22 - 32	284.48 - 274.48	32.29	277.19	2.85
	1/23/2017	34.65				32.70	276.78	1.95
	3/6/2017	34.66				31.69	277.79	2.97
	3/21/0217	34.08				31.70	277.78	2.38
	3/29/2017	34.85				31.82	277.66	3.03
	6/21/2017	34.68				33.63	275.85	1.05
	6/26/2017	34.84				33.70	275.78	1.14
	7/31/2017	34.80				34.42	275.06	0.38
	8/28/2017	34.74				DRY	NC	NC
	9/25/2017	34.64				DRY	NC	NC
	9/27/2017	34.45				DRY	NC	NC
	10/30/2017	30.66				DRY	NC	NC
	11/20/2017	34.66				33.38	276.10	1.28
	12/18/2017	34.71				32.43	277.05	2.28

Table 1
Monitoring Well Groundwater Elevation Data Summary
Laurel Station
Bellingham, Washington

Well ID	Date Measured	Total Depth[a] (ft-TOC)	TOC Elevation[b] (ft-NAVD88)	Approximate Screen Interval (ft-bgs)	Approximate Screen Interval Elevation (ft-NAVD88)	Depth to Groundwater (ft-TOC)	Groundwater Elevation (ft-NAVD88)	Thickness of Water Column (ft)
DPE-4	4/23/2015	16.91	302.30	6.5 - 16.5	298.51 - 288.51	8.46	293.30	8.45
	10/26/2015	17.00				16.50	285.80	0.50
	12/14/2015	15.70				15.50	286.80	0.20
	1/25/2016	15.70				14.77	287.53	0.93
	2/22/2016	16.14				15.90	286.40	0.24
	3/21/2016	15.09				14.95	287.35	0.14
	4/25/2016	15.14				DRY	NC	NC
	5/23/2016	15.15				DRY	NC	NC
	6/23/2016	15.13				DRY	NC	NC
	8/1/2016	16.16				DRY	NC	NC
	8/30/2016	15.11				DRY	NC	NC
	9/26/2016	14.88				DRY	NC	NC
	10/24/2016	14.90				DRY	NC	NC
	11/21/2016	15.12				15.07	287.23	0.05
	12/21/2016	15.40				DRY	NC	NC
	1/23/2017	14.82				DRY	NC	NC
	3/9/2017	14.87				DRY	NC	NC
	3/21/2017	15.12				DRY	NC	NC
	3/29/2017	15.12				DRY	NC	NC
	6/21/2017	15.14				DRY	NC	NC
	6/26/2017	15.12				DRY	NC	NC
	7/31/2017	15.14				15.11	287.19	0.03
	8/28/2017	15.14				DRY	NC	NC
	9/25/2017	15.14				DRY	NC	NC
	9/27/2017	15.01				DRY	NC	NC
	10/30/2017	15.14				DRY	NC	NC
	11/20/2017	15.13				DRY	NC	NC
	12/18/2017	15.12				DRY	NC	NC
MW-3	4/23/2015	33.40	305.83	24 - 34	281.83 - 271.83	DRY	NC	NC
	12/14/2015	33.55				DRY	NC	NC
	1/25/2016	33.39				DRY	NC	NC
	2/22/2016	33.48				DRY	NC	NC
	3/21/2016	33.99				33.36	272.47	0.63
	4/25/2016 *	34.91				DRY	NC	NC
	5/23/2016	33.86				DRY	NC	NC
	6/23/2016 *	35.10				34.50	271.33	0.60
	6/27/2016 *	34.60				33.73	272.10	0.87
	8/8/2016	33.35				DRY	NC	NC
	8/30/2016	34.09				34.00	271.83	0.09
	9/26/2016	33.33				DRY	NC	NC
	10/24/2016	33.88				33.32	272.51	0.56
	11/21/2016	33.80				33.43	272.40	0.37
	12/21/2016	33.40				33.35	272.48	0.05
	1/23/2017	34.00				29.08	276.75	4.92
	3/6/2017	33.47				DRY	NC	NC
	3/21/2017	33.70				DRY	NC	NC
	3/29/2017	33.60				DRY	NC	NC
	6/21/2017	33.51				DRY	NC	NC
	6/26/2017	33.61				DRY	NC	NC
	7/31/2017	33.56				DRY	NC	NC
	8/28/2017	33.54				33.46	272.37	0.08
	9/25/2017	33.55				33.41	272.42	0.14
	9/27/2017	33.38				DRY	NC	NC
	10/30/2017	33.57				33.42	272.41	0.15
	11/20/2017	33.59				33.49	272.34	0.10
	12/18/2017	33.59				33.43	272.40	0.16
MW-4	4/23/2015	30.15	305.68	20 - 30	285.67 - 275.67	28.07	277.61	2.08
	12/14/2015	30.16				DRY	NC	NC
	1/25/2016	30.34				29.04	276.64	1.30
	2/22/2016	30.37				24.33	281.35	6.04
	3/21/2016	30.35				25.86	279.82	4.49
	4/25/2016 *	33.79				DRY	NC	NC
	5/23/2016	30.47				DRY	NC	NC
	6/23/2016	30.15				29.84	275.84	0.31
	6/27/2016	30.12				29.85	275.83	0.27
	8/8/2016	29.87				DRY	NC	NC
	8/30/2016 *	35.40				29.87	275.81	5.53
	9/26/2016	30.03				DRY	NC	NC
	10/24/2016 *	33.50				24.41	281.27	9.09
	11/21/2016 *	31.30				26.71	278.97	4.59
	12/21/2016	30.04				28.74	276.94	1.30
	1/23/2017 *	33.70				33.35	272.33	0.35
	3/6/2017	30.09				27.02	278.66	3.07
	3/21/2017	31.50				24.14	281.54	7.36
	3/29/2017	30.25				28.91	276.77	1.34
	6/21/2017	30.19				29.45	276.23	0.74
	6/26/2017	30.19				29.44	276.24	0.75
	7/31/2017	30.17				29.84	275.84	0.33
	8/28/2017	30.18				DRY	NC	NC
	9/25/2017	30.19				29.94	275.74	0.25
	9/27/2017	29.99				DRY	NC	NC
	10/30/2017	30.19				29.94	275.74	0.25
	11/20/2017	30.21				29.56	276.12	0.65
	12/18/2017	30.20				29.21	276.47	0.99

Table 1
Monitoring Well Groundwater Elevation Data Summary
Laurel Station
Bellingham, Washington

Well ID	Date Measured	Total Depth[a] (ft-TOC)	TOC Elevation[b] (ft-NAVD88)	Approximate Screen Interval (ft-bgs)	Approximate Screen Interval Elevation (ft-NAVD88)	Depth to Groundwater (ft-TOC)	Groundwater Elevation (ft-NAVD88)	Thickness of Water Column (ft)
MW-6	4/23/2015	26.55				16.51	286.27	10.04
	11/30/2015	NA				16.17	286.61	10.38
	12/14/2015	26.56				12.92	289.86	13.64
	1/25/2016	26.74				13.59	289.19	13.15
	2/22/2016	26.77				12.89	289.89	13.88
	3/21/2016	26.65				13.02	289.76	13.63
	4/25/2016	26.73				DRY	NC	NC
	5/23/2016	26.84				DRY	NC	NC
	6/23/2016	26.78				19.17	283.61	7.61
	6/27/2016	26.70				18.52	284.26	8.18
	8/8/2016	26.81				23.31	279.47	3.50
	8/30/2016	27.06				25.91	276.87	1.15
	9/26/2016	26.63				16.67	286.11	9.96
	10/24/2016	26.55				12.94	289.84	13.61
	11/21/2016	26.76	302.78	11 - 26	291.78 - 276.78	15.20	287.58	11.56
	12/21/2016	26.62				12.81	289.97	13.81
	1/23/2017	26.55				13.25	289.53	13.30
	3/6/2017	26.48				12.81	289.97	13.67
	3/21/2017	26.17				12.76	290.02	13.41
	3/29/2017	26.75				12.55	290.23	14.20
	6/21/2017	26.64				15.63	287.15	11.01
	6/26/2017	26.73				18.54	284.24	8.19
	7/31/2017	26.71				26.14	276.64	0.57
	8/28/2017	26.73				26.15	276.63	0.58
	9/25/2017	26.72				21.48	281.30	5.24
	9/27/2017	26.73				22.32	280.46	4.41
	10/30/2017	26.72				13.45	289.33	13.27
	11/20/2017	26.72				12.86	289.92	13.86
	12/18/2017	26.72				12.62	290.16	14.10
MW-8	4/23/2015	37.10				DRY	NC	NC
	12/14/2015	37.08				DRY	NC	NC
	1/25/2016	37.28				DRY	NC	NC
	2/22/2016	37.13				36.91	265.33	0.22
	3/21/2016	37.45				37.00	265.24	0.45
	4/25/2016	37.41				DRY	NC	NC
	5/23/2016	37.55				37.05	265.19	0.50
	6/23/2016	37.50				37.04	265.20	0.46
	6/27/2016	37.20				DRY	NC	NC
	8/8/2016	37.68				37.08	265.16	0.60
	8/30/2016	37.96				DRY	NC	NC
	9/26/2016	37.80				37.10	265.14	0.70
	10/24/2016	37.60				37.08	265.16	0.52
	11/21/2016	37.40				37.15	265.09	0.25
	12/21/2016	37.14	302.24	23 - 38	279.24 - 264.24	37.08	265.16	0.06
	1/23/2017	37.59				36.97	265.27	0.62
	3/6/2017	37.15				DRY	NC	NC
	3/21/2017	31.42				31.05	271.19	0.37
	3/29/2017	37.40				DRY	NC	NC
	6/21/2017	37.40				DRY	NC	NC
	6/26/2017	37.03				DRY	NC	NC
	7/31/2017	37.28				37.05	265.19	0.23
	8/28/2017	37.29				37.09	265.15	0.20
	9/25/2017	37.26				37.09	265.15	0.17
	9/27/2017	37.08				DRY	NC	NC
	10/30/2017	37.29				37.08	265.16	0.21
	11/20/2017	37.27				33.83	268.41	3.44
	12/18/2017	37.30				37.08	265.16	0.22
MW-11[c]	4/23/2015	48.15				DRY	NC	NC
	11/30/2015	NA				47.54	273.77	0.61
	12/14/2015	48.17				47.21	274.10	0.96
	1/25/2016 *	46.93				DRY	NC	NC
	2/22/2016	48.21				46.86	274.45	1.35
	3/21/2016	48.52				46.96	274.35	1.56
	4/25/2016	48.69				DRY	NC	NC
	5/23/2016	48.73				DRY	NC	NC
	6/27/2016	48.30				DRY	NC	NC
	8/8/2016	48.02				DRY	NC	NC
	8/30/2016	48.80				48.48	272.83	0.32
	10/24/2016	48.95				48.00	273.31	0.95
	9/26/2016 *	38.00				DRY	NC	NC
	11/21/2016	48.42				47.22	274.09	1.20
	12/21/2016	48.60	321.31	25 - 45	293.31 - 273.31	47.60	273.71	1.00
	1/23/2017	48.90				47.23	274.08	1.67
	3/6/2017	48.24				46.91	274.40	1.33
	3/21/2017	48.48				46.85	274.46	1.63
	3/29/2017	48.41				47.05	274.26	1.36
	6/21/2017	48.30				47.98	273.33	0.32
	6/26/2017	48.58				48.08	273.23	0.50
	7/31/2017	48.40				48.08	273.23	0.32
	8/28/2017	48.36				48.09	273.22	0.27
	9/25/2017	48.38				48.08	273.23	0.30
	9/27/2017	48.18				48.09	273.22	0.09
	10/30/2017	48.42				48.10	273.21	0.32
	11/20/2017	48.41				47.61	273.70	0.80
	12/18/2017	48.39				48.07	273.24	0.32

Table 1
Monitoring Well Groundwater Elevation Data Summary
Laurel Station
Bellingham, Washington

Well ID	Date Measured	Total Depth[a] (ft-TOC)	TOC Elevation[b] (ft-NAVD88)	Approximate Screen Interval (ft-bgs)	Approximate Screen Interval Elevation (ft-NAVD88)	Depth to Groundwater (ft-TOC)	Groundwater Elevation (ft-NAVD88)	Thickness of Water Column (ft)
MW-12[c]	4/23/2015	51.60				DRY	NC	NC
	11/30/2015	NA				50.69	272.84	0.91
	12/14/2015	51.80				51.20	272.33	0.60
	1/25/2016	52.12				DRY	NC	NC
	2/22/2016	51.99				DRY	NC	NC
	3/21/2016	52.20				51.74	271.79	0.46
	4/25/2016	52.12				DRY	NC	NC
	5/23/2016	52.22				DRY	NC	NC
	6/27/2016	51.75				DRY	NC	NC
	8/8/2016	51.72				DRY	NC	NC
	8/30/2016	52.55				DRY	NC	NC
	9/26/2016	52.50				DRY	NC	NC
	10/24/2016	52.50				DRY	NC	NC
	11/21/2016	51.89	323.53	29 - 49	291.53 - 271.53	51.80	271.73	0.09
	12/21/2016	52.67				51.77	271.76	0.90
	1/23/2017	52.25				DRY	NC	NC
	3/6/2017	51.69				DRY	NC	NC
	3/21/2017	52.45				DRY	NC	NC
	3/29/2017	51.89				DRY	NC	NC
	6/21/2017	51.70				DRY	NC	NC
	6/26/2017	51.83				DRY	NC	NC
	7/31/2017	51.83				DRY	NC	NC
	8/28/2017	51.82				DRY	NC	NC
	9/25/2017	51.87				DRY	NC	NC
	9/27/2017	51.65				DRY	NC	NC
	10/30/2017	51.92				DRY	NC	NC
	11/20/2017	51.89				DRY	NC	NC
	12/18/2017	51.86				DRY	NC	NC
MW-13	4/23/2015	62.45				DRY	NC	NC
	11/30/2015	NA				63.48	NC	NC
	12/14/2015	62.62				DRY	NC	NC
	1/25/2016	63.21				62.45	260.75	0.76
	2/22/2016	62.56				DRY	NC	NC
	3/21/2016	63.06				DRY	NC	NC
	4/25/2016	63.09				DRY	NC	NC
	5/23/2016	63.11				DRY	NC	NC
	6/27/2016	62.60				DRY	NC	NC
	8/8/2016	62.50				DRY	NC	NC
	8/30/2016	63.29				DRY	NC	NC
	9/26/2016	63.91				DRY	NC	NC
	10/24/2016 *	63.70				DRY	NC	NC
	11/21/2016	63.00	323.20	39 - 59	281.20 - 261.20	62.52	260.68	0.48
	12/21/2016	62.90				DRY	NC	NC
	1/23/2017	63.36				DRY	NC	NC
	3/6/2017	62.50				DRY	NC	NC
	3/21/2017	63.47				DRY	NC	NC
	3/29/2017	62.68				DRY	NC	NC
	6/21/2017	62.60				DRY	NC	NC
	6/26/2017	63.08				DRY	NC	NC
	7/31/2017	62.70				62.57	260.63	0.13
	8/28/2017	62.68				62.58	260.62	0.10
	9/25/2017	62.68				62.61	260.59	0.07
	9/27/2017	62.54				DRY	NC	NC
	10/30/2017	62.66				62.62	260.58	0.04
	11/20/2017	62.69				62.61	260.59	0.08
	12/18/2017	62.76				62.61	260.59	0.15
MW-14	4/23/2015	50.75				DRY	NC	NC
	11/30/2015	NA				50.72	266.05	0.03
	12/14/2015	50.94				DRY	NC	NC
	1/25/2016	51.37				DRY	NC	NC
	2/22/2016	51.24				50.77	266.00	0.47
	3/21/2016	51.46				50.73	266.04	0.73
	4/25/2016	51.46				DRY	NC	NC
	5/23/2016	51.12				DRY	NC	NC
	6/27/2016	50.90				DRY	NC	NC
	8/8/2016	51.30				DRY	NC	NC
	8/30/2016 *	52.00				DRY	NC	NC
	9/26/2016	51.80				50.72	266.05	1.08
	10/24/2016	51.65				46.90	269.87	4.75
	11/21/2016	51.20	316.77	30 - 50	286.77 - 266.77	50.85	265.92	0.35
	12/21/2016	51.30				51.23	265.54	0.07
	1/23/2017	51.50				50.61	266.16	0.89
	3/6/2017	50.82				50.69	266.08	0.13
	3/21/2017	51.35				50.78	265.99	0.57
	3/29/2017	50.89				DRY	NC	NC
	6/21/2017	50.65				DRY	NC	NC
	6/26/2017	50.98				50.77	266.00	0.21
	7/31/2017	50.96				50.76	266.01	0.20
	8/28/2017	50.96				50.78	265.99	0.18
	9/25/2017	50.97				50.83	265.94	0.14
	9/27/2017	50.80				DRY	NC	NC
	10/30/2017	51.02				50.82	265.95	0.20
	11/20/2017	50.99				50.81	265.96	0.18
	12/18/2017	51.02				50.85	265.92	0.17

Table 1
Monitoring Well Groundwater Elevation Data Summary
Laurel Station
Bellingham, Washington

Well ID	Date Measured	Total Depth[a] (ft-TOC)	TOC Elevation[b] (ft-NAVD88)	Approximate Screen Interval (ft-bgs)	Approximate Screen Interval Elevation (ft-NAVD88)	Depth to Groundwater (ft-TOC)	Groundwater Elevation (ft-NAVD88)	Thickness of Water Column (ft)
MW-15	4/23/2015	34.25				DRY	NC	NC
	10/26/2015	33.76				33.72	269.40	0.04
	11/30/2015	NA				33.82	269.30	NC
	12/14/2015	34.24				33.79	269.33	0.45
	1/25/2016	35.15				33.80	269.32	1.35
	2/22/2016 *	33.39				33.19	269.93	0.20
	3/21/2016	34.82				33.78	269.34	1.04
	4/25/2016	34.71				DRY	NC	NC
	5/23/2016	34.80				DRY	NC	NC
	6/27/2016 *	33.52				DRY	NC	NC
	8/8/2016	34.31				33.74	269.38	0.57
	8/30/2016 *	35.26				33.74	269.38	1.52
	9/26/2016 *	36.00				DRY	NC	NC
	10/24/2016	35.15				33.63	269.49	1.52
	11/21/2016	33.80	303.12	25 - 35	278.12 - 268.12	33.73	269.39	0.07
	12/21/2016	34.39				33.72	269.40	0.67
	1/23/3017	35.25				33.70	269.42	1.55
	3/6/2017	34.08				33.74	269.38	0.34
	3/21/2017	35.30				DRY	NC	NC
	3/29/2017	34.37				DRY	NC	NC
	6/21/2017	34.31				DRY	NC	NC
	6/26/2017	34.67				33.75	269.37	0.92
	7/31/2017	34.26				33.79	269.33	0.47
	8/28/2017	34.31				33.77	269.35	0.54
	9/25/2017	34.28				33.76	269.36	0.52
	9/27/2017	34.07				33.77	269.35	0.30
	10/30/2017	34.28				33.78	269.34	0.50
	11/20/2017	34.24				33.79	269.33	0.45
	12/18/2017	34.31				33.76	269.36	0.55
MW-16	4/23/2015	34.82				DRY	NC	NC
	10/26/2015	34.91				34.80	269.11	0.11
	12/14/2015	34.83				DRY	NC	NC
	1/25/2016	35.73				DRY	NC	NC
	2/22/2016	35.72				34.97	268.94	0.75
	3/21/2016	35.61				33.81	270.10	1.80
	4/25/2016	35.41				DRY	NC	NC
	5/23/2016	35.58				DRY	NC	NC
	6/27/2016	34.70				DRY	NC	NC
	8/8/2016	35.50				34.73	269.18	0.77
	8/30/2016 *	36.23				34.74	269.17	1.49
	9/26/2016 *	36.50				DRY	NC	NC
	10/24/2016 *	36.65				DRY	NC	NC
	11/21/2016	35.46				34.60	269.31	0.86
	12/21/2016 *	36.10	303.91	25 - 35	278.91 - 268.91	DRY	NC	NC
	1/23/2017	35.70				34.36	269.55	1.34
	3/6/2017	34.61				34.02	269.89	0.59
	3/21/2017	35.73				DRY	NC	NC
	3/29/2017	34.87				DRY	NC	NC
	6/21/2017	34.69				DRY	NC	NC
	6/26/2017	34.72				DRY	NC	NC
	7/31/2017	35.95				34.75	269.16	1.20
	8/28/2017	34.85				34.74	269.17	0.11
	9/25/2017	34.93				34.68	269.23	0.25
	9/27/2017	34.77				DRY	NC	NC
	10/30/2017	34.97				34.92	268.99	0.05
	11/20/2017	34.71				DRY	NC	NC
	12/18/2017	35.01				34.88	NC	NC

[a]Total depth was measured by sounding the wells prior to sampling and may differ from total depth as installed.

[b]Source of TOC elevations is Larry Steele & Associates. The TOC noted for DPE-4 is the elevation for the sampling port due to the DPE equipment installed in the well. For DPE-4, the measurement on April 23, 2015 was TOC for well casing (pre-dated DPE installation).

Notes:

Highlighted cells recorded a water column less than 0.7 foot. This is an indication that the well is dry and the water measured in the well is due to the collection of water in the bottom cap of the well.

Well is dry.

* - Indicates measured depth to bottom of well is very different than expected; impacts calculation of thickness of water column.

ft - foot

ft-TOC - feet below top of well casing

ft-NAVD88 - vertical elevation in feet relative to North American Vertical Datum of 1988

ft-bgs - feet below ground surface

NC - not calculated

NM - not measured

Table 2
Quarterly Groundwater Monitoring Results
Laurel Station Cleanup Action
Bellingham, Washington

Sample ID	Groundwater Cleanup	MW4	MW-6													
Sample Date	**Levels**	4/23/15	4/23/15	4/23/15 (DUP)	12/14/15	3/29/16	3/29/16 (DUP)	6/27/16	6/27/16 (DUP)	9/26/16	12/21/16	12/21/16 (DUP)	3/29/17	6/21/17	6/21/17 (DUP)	9/27/17
Total Petroleum Hydrocarbons (TPH, mg/L)																
Gasoline-range (Gx)	0.8/1.0 [a]	0.25 U	0.25 U	0.25 U	0.25 U	0.10 U	0.10 U	0.10 U	0.10 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U
Diesel-range (Dx)	NE	**0.94**	0.10 U	0.13 U	**0.12**	0.10 U	0.10 U	**0.11**	0.10 U	**0.273**	0.100 U	0.100 U	0.100 U	0.115 U	**0.124**	**0.421**
Motor Oil-range	NE	**0.47**	0.20 U	0.25 U	**0.22**	0.20 U	0.20 U	0.20 U	0.20 U	0.200 U	0.200 U	0.200 U	0.200 U	0.230 U	**0.269**	**0.336**
Total TPH (Sum Dx, Oil-range, mg/L)	0.5	**1.41**	ND	ND	**0.34**	ND	ND	**0.11**	ND	**0.273**	ND	ND	ND	ND	**0.393**	**0.757**
BTEX (ug/L)																
Benzene	5	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Toluene	640	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Ethylbenzene	700	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
m,p-Xylene	1,600	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
o-Xylene	1,600	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Polycyclic Aromatic Hydrocarbons (ug/L)																
1-Methylnaphthalene	1.51	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.020**	**0.017**	**0.012**	0.010 U	0.013 U	0.011 U	NA
2-Methylnaphthalene	32	NA	**0.019**	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.049**	**0.048**	**0.033**	**0.026**	**0.018**	**0.017**	NA
Acenaphthene	960	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 U	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Acenaphthylene	NE	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 U	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Anthracene	4,800	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.014**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Benzo(a)anthracene [1]	0.12	NA	**0.013**	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.020**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Benzo(b)fluoranthene [1]	0.12	NA	**0.011**	NA	0.010 U	NA	NA	NA	NA	**0.013**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Benzo(k)fluoranthene [1]	1.2	NA	0.010 U	NA	0.010 U	NA	NA	NA	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Benzo(a)pyrene [1]	0.12	NA	**0.012**	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	**0.014**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Benzo(g,h,i)perylene	NE	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 UJ	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Chrysene [1]	12	NA	**0.015**	NA	**0.012**	0.10 U	0.10 U	0.10 U	0.10 U	**0.023**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Dibenz(a,h)anthracene [1]	0.012	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 UJ	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Dibenzofuran	16	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 U	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Fluoranthene	640	NA	**0.017**	NA	**0.013**	0.10 U	0.10 U	0.10 U	0.10 U	**0.045**	0.010 U	0.010 U	0.010 U	0.013 U	**0.015**	NA
Fluorene	640	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 U	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Indeno(1,2,3-cd)pyrene [1]	0.12	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	0.10 U	0.10 U	0.010 UJ	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Naphthalene	160	NA	0.010 U	NA	0.010 U	0.10 U	0.10 U	**0.22**	**0.15**	**0.670**	**0.303 J**	**0.209 J**	**0.153**	**0.164**	**0.150**	NA
Phenanthrene	NE	NA	0.010 U	NA	**0.010**	0.10 U	0.10 U	0.10 U	0.10 U	**0.024**	0.010 U	0.010 U	0.010 U	0.013 U	0.011 U	NA
Pyrene	480	NA	**0.022**	NA	**0.014**	0.10 U	0.10 U	0.10 U	0.10 U	**0.054**	0.010 U	0.010 U	0.010 U	0.013 U	**0.012**	NA
Total Benzofluoranthenes [2]	0.12	NA	**0.024 J**	NA	0.020 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	NA	NA	NA	NA	NA	NA
TTEC	0.12	NA	0.015	NA	0.00012	NC	NC	NC	NC	0.0175	NC	NC	NC	NC	NC	NC

Table 2
Quarterly Groundwater Monitoring Results
Laurel Station Cleanup Action
Bellingham, Washington

Sample ID Sample Date	Groundwater Cleanup Levels	PV-1 4/24/15	DPE-1 4/24/15	DPE-2 4/24/15	DPE-3 4/23/15	DPE-4 4/24/15	DPE-5 4/24/15	DPE-8 4/23/15
Total Petroleum Hydrocarbons (TPH, mg/L)								
Gasoline-range (Gx)	0.8/1.0 [a]	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Diesel-range (Dx)	NE	**0.38**	**2.1**	**0.59**	**0.86**	**0.14**	**0.46**	**0.60**
Motor Oil-range	NE	0.20 U	**0.54**	**0.23**	**0.82**	0.20 U	0.20 U	0.20 U
Total TPH (Sum Dx, Oil-range, mg/L)	0.5	**0.38**	**2.64**	**0.82**	**1.68**	**0.14**	**0.46**	**0.60**
BTEX (ug/L)								
Benzene	5	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Toluene	640	**0.26**	0.20 U	**0.55**	**0.37**	0.20 U	0.20 U	**0.44**
Ethylbenzene	700	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
m,p-Xylene	1,600	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
o-Xylene	1,600	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Polycyclic Aromatic Hydrocarbons (ug/L)								
1-Methylnaphthalene	1.51	0.010 U	0.010 U	**0.010**	**0.019**	0.010 U	0.010 U	0.010 U
2-Methylnaphthalene	32	0.010 U	0.010 U	0.010 U	**0.022**	0.010 U	0.010 U	0.010 U
Acenaphthene	960	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Acenaphthylene	NE	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Anthracene	4,800	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(a)anthracene [1]	0.12	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(b)fluoranthene [1]	0.12	0.010 U	**0.015**	0.010 U	**0.016**	0.010 U	0.010 U	0.010 U
Benzo(k)fluoranthene [1]	1.2	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(a)pyrene [1]	0.12	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Benzo(g,h,i)perylene	NE	0.010 U	0.010 U	0.010 U	**0.015**	0.010 U	0.010 U	0.010 U
Chrysene [1]	12	0.010 U	**0.098**	**0.013**	**0.044**	0.010 U	0.010 U	**0.011**
Dibenz(a,h)anthracene [1]	0.012	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Dibenzofuran	16	0.010 U	0.010 U	0.010 U	**0.012**	0.010 U	0.010 U	0.010 U
Fluoranthene	640	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Fluorene	640	0.010 U	0.010 U	**0.018**	**0.012**	0.010 U	**0.027**	0.010 U
Indeno(1,2,3-cd)pyrene [1]	0.12	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Naphthalene	160	0.010 U	0.021 U	0.031 U	0.010 U	0.019 U	0.033 U	0.020 U
Phenanthrene	NE	0.010 U	0.010 U	0.010 U	**0.013**	0.010 U	0.010 U	0.010 U
Pyrene	480	0.010 U	**0.057**	**0.020**	**0.031**	0.010 U	0.010 U	**0.012**
Total Benzofluoranthenes [2]	0.12	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
TTEC	0.12	NC	0.0025	0.00013	0.0020	NC	NC	0.00011

Notes:
Bolded values indicate that analyte was detected above the laboratory reporting limit.
Bolded and highlighted values exceed the project cleanup levels.
BTEX - benzene, toluene, ethylbenzene, and xylenes
J - estimated value
mg/L - milligram per liter
NA - not analyzed or not applicable
NC- not calculable
ND - not detected
NE - not established
TTEC - Total Toxicity Equivalent Concentration, reference WAC173-340-708
U - Compound was analyzed for but not detected above the reporting limit shown.
UJ - Compound was analyzed for but not detected above the reporting limit shown. Reporting limit is an estimated value.
ug/L - microgram per liter
[a] Gasoline with benzene present/without benzene present
[1] This is considered a carcinogenic polycyclic aromatic hydrocarbon compound.
[2] Total benzofluoranthenes is the sum of the benzo(b)fluoranthene, benzo(j)fluoranthene, and benzo(k)fluoranthene isomers. The cleanup level of 0.12 ug/L is based on benzo(b)fluoranthene.

Memo

1111 3rd Avenue, Suite 1600
Seattle, Washington 98101
206.438.2700 Telephone
206.438.2699 Fax

To:	Karen Mixon, Project Manager	**Info:**	**Final**
From:	Chelsey Cook, Chemist Lucy Panteleeff, Chemist	**Date:**	November 1, 2017
RE:	Data Quality Review Quarterly Groundwater Samples – September 2017 Laurel Station Cleanup Action		

The data quality review of 1 groundwater sample collected on September 27, 2017, has been completed. The sample was analyzed by Analytical Resources, Incorporated (ARI) located in Tukwila, Washington for benzene, toluene, ethylbenzene, m,p-xylene, and o-xylene (BTEX) by EPA Method 8260C, and total petroleum hydrocarbons (TPHs) by Washington State Department of Ecology (Ecology) Methods NWTPH-Gx (gasoline-range TPH) and NWTPH-Dx (diesel-range and motor oil-range TPH). Samples were analyzed for the chemical constituents as described in the *Final Compliance Monitoring Plan, Laurel Station, 1009 East Smith Road, Bellingham, Washington* dated January 16, 2015 (CMP). Due to changes in laboratory procedures, NWTPH-Gx analysis was performed using GC/MS instrumentation instead of GC/FID.

The analyses were performed in general accordance with methods specified in EPA's *Test Methods for Evaluating Solid Waste (SW-846)* and Ecology's *Analytical Methods for Petroleum Hydrocarbons*, June 1997. The laboratory provided a full data package containing sample results and associated QA/QC data. The following sample is associated with ARI group 17I0430:

Sample ID	Laboratory ID	Requested Analyses
MW-6	17I0430-01	BTEX, NWTPH-Gx, NWTPH-Dx

The following comments refer to ARI's performance in meeting the quality control specifications described in the analytical methods. Data were qualified based on the method criteria and guidance provided in the EPA document *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017. Data qualifiers that may be assigned to data from this laboratory group include:

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- DNR - Do Not Report. Multiple results reported from different analytical dates and/or dilutions. Value from another analysis should be used.

Sample Receipt

Upon receipt by ARI, the sample jar information was compared to the chain-of-custody (COC) and the cooler temperature was recorded. No discrepancies related to sample identification were noted by the laboratory and the cooler was received at a temperature within the EPA-recommended limits of greater than 0°C and less than or equal to 6°C.

Organic Analyses

Samples were analyzed for BTEX, and TPHs by the methods identified in the introduction to this report.

1. Holding Times – Acceptable

2. Instrument Performance and Calibrations (initial and continuing) – Acceptable

3. Blanks – Acceptable

4. Surrogates – Acceptable

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) – Acceptable

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

   General – MS/MSDs were not performed in association with these analyses. Precision and accuracy were assessed using the LCS, LCSD, and/or field duplicate results.

7. Reporting Limits – Acceptable

Overall Assessment of Data

The data reported in this laboratory group are considered usable for meeting project objectives. The completeness for laboratory group 17I0430 is 100%.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

25 October 2017

Karen Mixon
AECOM
1111 Third Avenue, Suite 1600
Seattle, WA 98101

RE: Laurel Station

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
17I0430	N/A

Kelly Bottem

Digitally signed by Kelly Bottem
DN: c=US, st=Washington, l=Tukwila, o=Analytical Resources, Inc., ou=Client Services, cn=Kelly Bottem, email=kellyb@arilabs.com
Date: 2017.10.25 05:45:50 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the reqirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 17I0430	Turn-around Requested: STD	Page: 1 of 1	
ARI Client Company: AECOM	Phone: 206 438 2700	Date: 9/27/17	Ice Present?
Client Contact: KAREN MIXON		No. of Coolers:	Cooler Temps:
Client Project Name: LAUREL STATION GW SAMPLING			
Client Project #: 60533558	Samplers: IPV		

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested: NWTPH Gx/BTEX	Analysis Requested: NWTPH Dx	Notes/Comments
MW-6	9/27/17	1045	H2O	4	3	1	BTEX by 8260C
~~TRIP BLANK~~							

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
NO TRIP BLANKS WERE INCLUDED IN COOLER SHIPMENT	Printed Name: IAN VERMEEREN	Printed Name: Brittney Hall	Printed Name:	Printed Name:
	Company: AECOM	Company: ARI	Company:	Company:
	Date & Time: 9/27/17 ~1300	Date & Time: 9/28/17 10:35	Date & Time:	Date & Time:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: AECOM

Project Name: Laurel Station

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 17I0430

Tracking No: 8112 8853 1521 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.1

Time: 10:35

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: D002565

Cooler Accepted by: B.H. Date: 9/28/17 Time: 10:35

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO BF
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

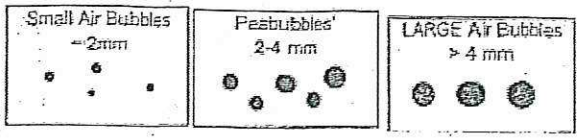
Samples Logged by: BF Date: 9/28/17 Time: 16:41

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Report

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-6	17I0430-01	Water	27-Sep-2017 10:45	28-Sep-2017 10:35

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

Case Narrative

Volatiles - EPA Method SW8260C

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

Gasoline by NWTPH-g (GC/MS)

The sample(s) were run within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The LCS percent recoveries were within control limits.

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

MW-6

17I0430-01 (Water)

Volatile Organic Compounds

Method: EPA 8260C
Instrument: NT2

Sampled: 09/27/2017 10:45
Analyzed: 03-Oct-2017 17:07

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0057 Sample Size: 10 mL
Prepared: 03-Oct-2017 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Benzene	71-43-2	1	0.20	ND	ug/L	U
Toluene	108-88-3	1	0.20	ND	ug/L	U
Ethylbenzene	100-41-4	1	0.20	ND	ug/L	U
m,p-Xylene	179601-23-1	1	0.40	ND	ug/L	U
o-Xylene	95-47-6	1	0.20	ND	ug/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*85.7*	*%*	

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

MW-6

17I0430-01 (Water)

Volatile Organic Compounds

Method: NWTPHg
Instrument: NT2

Sampled: 09/27/2017 10:45
Analyzed: 03-Oct-2017 17:07

Sample Preparation: Preparation Method: EPA 5030 (Purge and Trap)
Preparation Batch: BFJ0057 Sample Size: 10 mL
Prepared: 03-Oct-2017 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)		1	0.100	ND	mg/L	U
Surrogate: Toluene-d8			*80-120 %*	*98.4*	*%*	
Surrogate: 4-Bromofluorobenzene			*80-120 %*	*85.7*	*%*	

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

MW-6

17I0430-01 (Water)

Petroleum Hydrocarbons

Method: NWTPH-Dx
Instrument: FID4

Sampled: 09/27/2017 10:45
Analyzed: 06-Oct-2017 18:20

Sample Preparation: Preparation Method: EPA 3510C SepF
Preparation Batch: BFI0777
Prepared: 04-Oct-2017
Sample Size: 500 mL
Final Volume: 1 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)		1	0.100	**0.421**	mg/L	
HC ID: DRO						
Motor Oil Range Organics (C24-C38)		1	0.200	**0.336**	mg/L	
HC ID: RRO						
Surrogate: o-Terphenyl			*50-150 %*	*91.8*	*%*	

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

Volatile Organic Compounds - Quality Control

Batch BFJ0057 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFJ0057-BLK1)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 11:42						
Gasoline Range Organics (Tol-Nap)	ND	0.100	mg/L							U
Surrogate: Toluene-d8	4.70		mg/L	*5.00*		*93.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.26		mg/L	*5.00*		*85.2*	*80-120*			
Blank (BFJ0057-BLK2)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 11:42						
Benzene	ND	0.20	ug/L							U
Toluene	ND	0.20	ug/L							U
Ethylbenzene	ND	0.20	ug/L							U
m,p-Xylene	ND	0.40	ug/L							U
o-Xylene	ND	0.20	ug/L							U
Surrogate: Toluene-d8	4.70		ug/L	*5.00*		*93.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.26		ug/L	*5.00*		*85.2*	*80-120*			
LCS (BFJ0057-BS1)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 09:56						
Gasoline Range Organics (Tol-Nap)	1.19	0.100	mg/L	1.00		119	72-128			
Surrogate: Toluene-d8	4.98		mg/L	*5.00*		*99.6*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.60		mg/L	*5.00*		*92.1*	*80-120*			
LCS (BFJ0057-BS2)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 10:36						
Benzene	11.0	0.20	ug/L	10.0		110	80-120			
Toluene	10.5	0.20	ug/L	10.0		105	80-120			
Ethylbenzene	10.4	0.20	ug/L	10.0		104	80-120			
m,p-Xylene	22.4	0.40	ug/L	20.0		112	80-121			
o-Xylene	10.9	0.20	ug/L	10.0		109	80-121			
Surrogate: Toluene-d8	5.17		ug/L	*5.00*		*103*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.89		ug/L	*5.00*		*97.7*	*80-120*			
LCS Dup (BFJ0057-BSD1)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 10:16						
Gasoline Range Organics (Tol-Nap)	1.17	0.100	mg/L	1.00		117	72-128	2.51	30	
Surrogate: Toluene-d8	4.84		mg/L	*5.00*		*96.9*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.57		mg/L	*5.00*		*91.4*	*80-120*			
LCS Dup (BFJ0057-BSD2)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 10:56						
Benzene	11.0	0.20	ug/L	10.0		110	80-120	0.14	30	

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

Volatile Organic Compounds - Quality Control

Batch BFJ0057 - EPA 5030 (Purge and Trap)

Instrument: NT2 Analyst: PC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS Dup (BFJ0057-BSD2)				Prepared: 03-Oct-2017 Analyzed: 03-Oct-2017 10:56						
Toluene	10.6	0.20	ug/L	10.0		106	80-120	0.57	30	
Ethylbenzene	10.6	0.20	ug/L	10.0		106	80-120	2.05	30	
m,p-Xylene	22.2	0.40	ug/L	20.0		111	80-121	0.75	30	
o-Xylene	10.8	0.20	ug/L	10.0		108	80-121	0.52	30	
Surrogate: Toluene-d8	5.22		ug/L	*5.00*		*104*	*80-120*			
Surrogate: 4-Bromofluorobenzene	4.98		ug/L	*5.00*		*99.7*	*80-120*			

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

Petroleum Hydrocarbons - Quality Control

Batch BFI0777 - EPA 3510C SepF

Instrument: FID4 Analyst: ML

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BFI0777-BLK1)				Prepared: 04-Oct-2017 Analyzed: 06-Oct-2017 16:28						
Diesel Range Organics (C12-C24)	ND	0.100	mg/L							U
Motor Oil Range Organics (C24-C38)	ND	0.200	mg/L							U
Surrogate: o-Terphenyl	0.405		mg/L	*0.450*		*90.1*	*50-150*			
LCS (BFI0777-BS1)				Prepared: 04-Oct-2017 Analyzed: 06-Oct-2017 16:51						
Diesel Range Organics (C12-C24)	2.46	0.100	mg/L	3.00		82.1	56-120			
Surrogate: o-Terphenyl	0.411		mg/L	*0.450*		*91.3*	*50-150*			

AECOM	Project: Laurel Station	
1111 Third Avenue, Suite 1600	Project Number: 60533550	**Reported:**
Seattle WA, 98101	Project Manager: Karen Mixon	25-Oct-2017 05:15

Certified Analyses included in this Report

Analyte	Certifications
EPA 8260C in Water	
Chloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichlorofluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrolein	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloro-1,2,2-Trifluoroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acetone	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Iodomethane	DoD-ELAP,NELAP,CALAP,WADOE
Methylene Chloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Acrylonitrile	DoD-ELAP,NELAP,CALAP,WADOE
Carbon Disulfide	DoD-ELAP,NELAP,CALAP,WADOE
trans-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Vinyl Acetate	DoD-ELAP,NELAP,CALAP,WADOE
1,1-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Butanone	DoD-ELAP,NELAP,CALAP,WADOE
2,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
cis-1,2-Dichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Chloroform	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Carbon tetrachloride	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Benzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Trichloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Bromodichloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromomethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Chloroethyl vinyl ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Methyl-2-Pentanone	DoD-ELAP,NELAP,CALAP,WADOE
cis-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Toluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE

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trans-1,3-Dichloropropene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
2-Hexanone	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2-Trichloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,3-Dichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Tetrachloroethene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dibromochloromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromoethane	DoD-ELAP,NELAP,CALAP,WADOE
Chlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Ethylbenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,1,1,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
m,p-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
o-Xylene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Styrene	DoD-ELAP,NELAP,CALAP,WADOE
Bromoform	DoD-ELAP,NELAP,CALAP,WADOE
1,1,2,2-Tetrachloroethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
trans-1,4-Dichloro 2-Butene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Propylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
Bromobenzene	DoD-ELAP,NELAP,CALAP,WADOE
Isopropyl Benzene	DoD-ELAP,NELAP,CALAP,WADOE
2-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
4-Chlorotoluene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
t-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,3,5-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2,4-Trimethylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
s-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
4-Isopropyl Toluene	DoD-ELAP,NELAP,CALAP,WADOE
1,3-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Butylbenzene	DoD-ELAP,NELAP,CALAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2-Dibromo-3-chloropropane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Hexachloro-1,3-Butadiene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Naphthalene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
1,2,3-Trichlorobenzene	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Dichlorodifluoromethane	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
Methyl tert-butyl Ether	DoD-ELAP,ADEC,NELAP,CALAP,WADOE
n-Hexane	WADOE
2-Pentanone	WADOE

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NWTPH-Dx in Water

Diesel Range Organics (C12-C24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C25)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-24)	DoD-ELAP,NELAP,WADOE
Diesel Range Organics (C10-C28)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C38)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C25-C36)	DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-C40)	DoD-ELAP,NELAP,WADOE
Mineral Spirits Range Organics (Tol-C12)	DoD-ELAP,NELAP,WADOE
Mineral Oil Range Organics (C16-C28)	DoD-ELAP,NELAP,WADOE
Kerosene Range Organics (Tol-C18)	DoD-ELAP,NELAP,WADOE
JP8 Range Organics (C8-C18)	DoD-ELAP,NELAP,WADOE
JP5 Range Organics (C10-C16)	DoD-ELAP,NELAP,WADOE
JP4 Range Organics (Tol-C14)	DoD-ELAP,NELAP,WADOE
Jet-A Range Organics (C10-C18)	DoD-ELAP,NELAP,WADOE
Creosote Range Organics (C12-C22)	DoD-ELAP,NELAP,WADOE
Bunker C Range Organics (C10-C38)	DoD-ELAP,NELAP,WADOE
Stoddard Range Organics (C8-C12)	DoD-ELAP,NELAP,WADOE
Transformer Oil Range Organics (C12-C28)	DoD-ELAP,NELAP,WADOE

NWTPHg in Water

Gasoline Range Organics (Tol-Nap)	WADOE,DoD-ELAP
Gasoline Range Organics (2MP-TMB)	WADOE,DoD-ELAP
Gasoline Range Organics (Tol-C12)	WADOE,DoD-ELAP
Gasoline Range Organics (C6-C10)	WADOE,ADEC,DoD-ELAP
Gasoline Range Organics (C5-C12)	WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	UST-033	09/01/2017
CALAP	California Department of Public Health CAELAP	2748	02/28/2018
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	02/07/2019
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006	05/11/2018
WADOE	WA Dept of Ecology	C558	06/30/2018
WA-DW	Ecology - Drinking Water	C558	06/30/2018

Analytical Report

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Notes and Definitions

U	This analyte is not detected above the applicable reporting or detection limit.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.