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Subject:

ARCO Facility No. 00217 (NW2434) - 2015 Annual Site Status Report

ENVIRONMENT

Site Address: 13131 Bothell Everett Hwy, Everett, WA 98208

On behalf of BP West Coast Products, LLC, Arcadis U.S., Inc. is pleased to submit this annual summary of site activities conducted at the Atlantic Richfield Company (ARCO) Facility No. 00217 (site) in 2015. Results and findings from work completed at the site are summarized below and in the attached data tables and figures.

Date:

April 28, 2016

Contact:

Brian Marcum

Current Site Use: Active Station

Phone:

503-220-8201 Ext. 1137

2015 Groundwater Monitoring Summary

Groundwater Monitoring Schedule: Quarterly

Sample Methodology:

Email:

brian.marcum
@arcadis.com

First Quarter: Low Flow Purge and Sample

Second Quarter: Low Flow Purge and Sample

Third Quarter: No event conducted

Fourth Quarter: No event conducted

Our ref:

GP09BPNA.WA01

Non-aqueous Phase Liquid Present at Site: No

**Site Constituents of Concern above Model Toxics Control Act Method A
Cleanup Levels during reporting period:**

- Total Petroleum Hydrocarbons as gasoline range organics: First Quarter (Q1) – MW-11; Second Quarter (Q2) – MW-11
- Benzene: Q1 – MW-11; Q2 – MW-11

WA-00217
April 28, 2016

Observed Depth to Water per Event:

First Quarter: 3.49 (IW-1) to 6.78 (MW-9) feet below top of casing (btoc)
– 3/19/2015

Second Quarter: 5.02 (MW-8) to 7.63 (MW-11) feet btoc – 6/3/2015

Groundwater Elevations and Flow Direction:

<u>Event</u>	<u>Elevation Range</u>	<u>Interpreted Groundwater Flow Direction</u>
First Quarter:	452.62 (MW-9) to 461.37 (MW-4) feet above North American Vertical Datum 1988 (NAVD 88)	West
Second Quarter:	451.96 (MW-9) to 459.31 (MW-4) feet above NAVD 88	West Southwest

2015 Additional Site Activities

No additional activities were conducted at the Site in 2015.

If you have any questions please contact Brian Marcum at 503-220-8201 x1137 or Brian.Marcum@arcadis.com.

Sincerely,

Arcadis U.S., Inc.



Brian Marcum
Project Manager

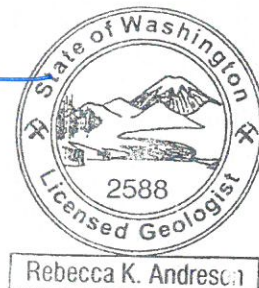
Copies:

Wade Melton, BP West Coast Products LLC

Enclosures:



Rebecca Andresen, L.G.
Associate Vice President



Table

Table 1 Groundwater Gauging Data and Select Analytical Results

Figures

Figure 1 Site Location Map

Figure 2 Groundwater Elevation Contour and Analytical Summary Map
March 19, 2015

Figure 3 Groundwater Elevation Contour and Analytical Summary Map June
3, 2015

Figure 4 Historical Groundwater Gradient Direction Rose Diagram

Attachments

Attachment A Groundwater Monitoring Field Data Sheets

Attachment B Laboratory Report and Chain-of-Custody Documentation

TABLE



Table 1
Groundwater Gauging Data and Select Analytical Results
WA-00217 (05377)

13131 Bothell Everett Hwy, Everett, WA 98208

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
IW-1	12/12/2012		462.52	4.31	0.0	458.21	885	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
IW-1	3/26/2013	(NS)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
IW-1	6/13/2013	(LF)	462.52	5.11	0.0	457.41	1,840	--	--	<1.0	<1.0	30.6	18.2	<1.0	--	--	<10.0	--
IW-1	9/25/2013	(LF)	462.52	7.71	0.0	454.81	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	0.12	--
IW-1	12/17/2013	(LF)	462.52	6.71	0.0	455.81	990	--	--	<0.50	<0.70	5.4	25	<0.50	--	--	<4.70	<4.70
IW-1	12/17/2013	(Dup)(LF)	462.52	6.71	0.0	455.81	990	--	--	<0.50	<0.70	5.8	25	<0.50	--	--	<4.70	<4.70
IW-1	3/5/2014	(LF)	462.52	4.25	0.0	458.27	75(J)	--	--	<0.50	<0.70	<0.80	0.81(J)	--	--	--	<4.7	<4.7
IW-1	7/31/2014	(LF)	462.52	6.55	0.0	455.97	2,200	--	--	0.74(J)	0.52(J)	63	54	--	--	--	<4.7	<4.7
IW-1	7/31/2014	(Dup)(LF)	462.52	6.55	0.0	455.97	2,100	--	--	0.63(J)	<0.50	63	52	--	--	--	<4.7	<4.7
IW-1	3/19/2015	(LFP)	462.52	3.49	0.0	459.03	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
IW-1	6/3/2015	(LFP)	462.52	5.43	0.0	457.09	690	--	--	<0.50	<0.50	11	4.6	--	--	--	<4.7	--
IW-2	3/19/2015	(NS)	462.80	4.58	0.0	458.22	--	--	--	--	--	--	--	--	--	--	--	--
IW-2	6/3/2015	(NS)	462.80	5.91	0.0	456.89	--	--	--	--	--	--	--	--	--	--	--	--
IW-3	12/12/2012		462.53	4.70	0.0	457.83	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
IW-3	3/26/2013	(NS)	462.53	3.29	0.0	--	--	--	--	--	--	--	--	--	--	--	--	--
IW-3	3/27/2013	(LF)	462.53	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
IW-3	6/13/2013	(LF)	462.53	5.60	0.0	456.93	998	--	--	<1.0	<1.0	3.1	<3.0	<1.0	--	--	<10.0	--
IW-3	9/25/2013	(LF)	462.53	8.21	0.0	454.32	595	--	--	<1.0	<1.0	128	<3.0	<1.0	--	--	0.65	--
IW-3	12/17/2013	(LF)	462.53	7.12	0.0	455.41	930	--	--	<0.50	<0.70	130	35	<0.50	--	--	<4.70	<4.70
IW-3	3/5/2014	(LF)	462.53	4.55	0.0	457.98	<50	--	--	<0.50	<0.70	<0.80	<0.80	--	--	--	<4.7	<4.7
IW-3	3/5/2014	(Dup)(LF)	462.53	4.55	0.0	457.98	63(J)	--	--	<0.50	<0.70	<0.80	<0.80	--	--	--	<4.7	<4.7
IW-3	7/31/2014	(LF)	462.53	6.81	0.0	455.72	2,300	--	--	0.58(J)	0.62(J)	150	110	--	--	--	<4.7	<4.7
IW-3	3/19/2015	(LFP)	462.53	3.55	0.0	458.98	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
IW-3	6/3/2015	(LFP)	462.53	5.91	0.0	456.62	57(J)	--	--	<0.50	<0.50	1.1	2.5	--	--	--	<4.7	--
MW-1	7/2/2004	(P)	101.93	6.50	--	95.43	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<2.00	<0.010	<1.00	22.3	<1.00
MW-1	9/27/2004	(P)	101.93	6.60	--	95.33	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	11/10/2004	(P)	101.93	6.11	--	95.82	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	11.9	<1.00
MW-1	2/22/2005	(P)	101.93	5.15	--	96.78	<80.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--
MW-1	5/18/2005	(P)	101.93	4.76	--	97.17	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	<1.00
MW-1	8/16/2005	(P)	101.93	6.36	--	95.57	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-1	11/10/2005	(P)	101.93	5.98	--	95.95	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	1/12/2006	(NP)	101.93	4.06	--	97.87	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<1.00	<1.00	--
MW-1	4/13/2006	(NS)	101.93	5.32	--	96.61	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/7/2006	(NS)	101.93	6.79	--	95.14	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/2/2007	(NS)	101.93	6.52	--	95.41	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/9/2008	(NP)	101.93	5.49	--	96.44	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-1	8/13/2009	(NP)	101.93	9.15	--	92.78	<50.0	--	--	<1.00	<1.00	<1.00	<2.00	--	--	--	2.1	<2.00
MW-1	6/23/2010	(P)	464.68	4.35	--	460.33	<50	--	--	<1.0	<1.0	<1.0	<3	--	--	--	--	--
MW-1	6/23/2010	(Dup)(P)	464.68	4.35	--	460.33	<50	--	--	<1.0	<1.0	<1.0	<3	--	--	--	--	--
MW-1	8/24/2010		--	--	--	--	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-1	12/7/2010	(LF)	464.68	5.31	--	459.37	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	3.9	--
MW-1	12/7/2010	(Dup)(LF)	464.68	5.31	--	459.37	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-1	3/29/2011	(LF)	464.68	4.25	0.0	460.43	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-1	5/10/2011	(LF)	464.68	3.90	0.0	460.78	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	1.70	--
MW-1	12/2/2011	(NS)	464.68	7.23	0.0	457.45	--	--	--	--	--	--	--	--	--	--	--	--

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Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-1	12/5/2011	(LF)	464.68	--	--	--	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	--	--
MW-1	3/9/2012	(LF)	464.68	4.31	0.0	460.37	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-1	11/26/2012	(LF)	464.68	5.84	0.0	458.84	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
MW-1	3/26/2013	(NS)	464.68	3.97	0.0	460.71	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/27/2013	(LF)	464.68	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-1	6/13/2013	(LF)	464.68	5.70	0.0	458.98	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-1	9/25/2013	(LF)	464.68	8.51	0.0	456.17	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	0.58	--
MW-1	12/17/2013	(NS)	464.68	7.32	0.0	457.36	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/5/2014	(NS)	464.68	5.55	0.0	459.13	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/31/2014	(NS)	464.68	7.21	0.0	457.47	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/19/2015	(NS)	464.68	4.31	0.0	460.37	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/3/2015	(LFP)	464.68	6.02	0.0	458.66	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-2	7/2/2004	(P)	99.57	7.57	--	92.00	20,300	--	--	70.2	15.9	1,900	4,060	<2.00	<0.010	<1.00	2.18	<1.00
MW-2	9/27/2004	(P)	99.57	7.35	--	92.22	3,310	--	--	32.3	2.79	412	309	<5.00	--	--	<1.00	<1.00
MW-2	11/10/2004	(P)	99.57	6.68	--	92.89	10,700	--	--	96.5	11.9	1,430	3,370	<20.0	--	--	<1.00	<1.00
MW-2	2/22/2005	(P)	99.57	5.60	--	93.97	16,400	--	--	55.4	42.8	1,630	3,580	--	--	--	--	--
MW-2	5/18/2005	(NS)	99.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/16/2005	(P)	99.57	7.08	--	92.49	9,100	--	--	16.4	13.3	1,200	2,490	<20.0	--	--	<1.00	--
MW-2	11/10/2005	(P)	99.57	5.45	--	94.12	14,400	--	--	15.7	466	1,020	3,370	<10.0	--	--	<1.00	<1.00
MW-2	1/12/2006	(NP)	99.57	4.10	--	95.47	10,200	--	--	17.9	134	1,140	2,530	2.35	<0.010	<1.00	<1.00	--
MW-2	4/13/2006	(P)	99.57	5.01	--	94.56	1,330	--	--	0.6	0.93	128	124	<1.00	<0.010	<1.00	<1.00	<1.00
MW-2	7/7/2006	(P)	99.57	6.85	--	92.72	8,330	--	--	<5.00	9.1	946	1,080	<10.0	<0.010	<10.0	<1.00	--
MW-2	7/2/2007	(P)	99.57	7.35	--	92.22	3,430	--	--	2.77	7.41	952	638	--	--	--	--	--
MW-2	7/9/2008	(NP)	99.57	6.60	--	92.97	2,730	--	--	5.8	1.44	612	572	--	--	--	--	--
MW-2	8/13/2009	(NP)	99.57	9.54	--	90.03	6,000	--	--	2.1	3.4	1,600	320	--	--	--	<2.00	<2.00
MW-2	6/23/2010	(P)	462.35	5.01	--	457.34	4,100	--	--	2.4	1.3	560	98.5	--	--	--	--	--
MW-2	8/24/2010		--	--	--	--	2,720	--	--	2.7	1.5	567	67.5	<1.0	--	--	<10.0	<10.0
MW-2	12/7/2010	(LF)	462.35	5.96	--	456.39	1,500	--	--	1.7	<1.0	95	2.9	<1.0	--	--	<2.0	--
MW-2	3/29/2011	(LF)	462.35	4.54	0.0	457.81	1,400	--	--	2.3	<1.0	140	21	<1.0	--	--	<2.0	--
MW-2	5/10/2011	(LF)	462.35	4.41	0.0	457.94	938	--	--	1.66	<1.00	74.6	97.9	<1.00	--	--	<0.40	--
MW-2	5/10/2011	(Dup)(LF)	462.35	4.41	0.0	457.94	835	--	--	2.02	<1.00	89.3	116.5	<1.00	--	--	--	--
MW-2	12/2/2011	(LF)	462.35	6.38	0.0	455.97	4,120	--	--	0.82	1.9	348	412	<1.0	--	--	--	--
MW-2	3/9/2012	(LF)	462.35	4.94	0.0	457.41	195	--	--	<0.20	<1.0	23.8	10.7	<1.0	--	--	<10.0	--
MW-2	11/26/2012	(LF)	462.35	5.28	0.0	457.07	330	--	--	<1.0	<1.0	33.4	9.6	<1.0	--	--	<3.0	<3.0
MW-2	3/26/2013	(NS)	462.35	4.37	0.0	457.98	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/27/2013	(LF)	462.35	--	--	--	838	--	--	1.1	<1.0	118	5.3	<1.0	--	--	<3.0	<10.0
MW-2	3/27/2013	(Dup)(LF)	462.35	--	--	--	855	--	--	<1.0	<1.0	88.3	4.0	<1.0	--	--	--	--
MW-2	6/13/2013	(LF)	462.35	6.11	0.0	456.24	136	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-2	6/13/2013	(Dup)(LF)	462.35	6.11	0.0	456.24	147	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-2	9/25/2013	(LF)	462.35	8.76	0.0	453.59	522	--	--	1.5	<1.0	3.3	<3.0	<1.0	--	--	0.24	--
MW-2	12/17/2013	(LF)	462.35	7.70	0.0	454.65	1,200	--	--	1.8(J)	0.87(J)	13	72	<0.50	--	--	<4.70	<4.70
MW-2	3/5/2014	(LF)	462.35	4.51	0.0	457.84	360	--	--	<0.50	<0.70	16	19	--	--	--	<4.7	<4.7
MW-2	7/31/2014	(LF)	462.35	7.48	0.0	454.87	400	--	--	1.1	<0.50	<0.50	<0.50	--	--	--	5.3(J)	<4.7
MW-2	3/19/2015	(LFP)	462.35	4.60	0.0	457.75	190(J)	--	--	0.97(J)	<0.50	3.4	<0.50	--	--	--	<4.7	--
MW-2	3/19/2015	(Dup)(LFP)	462.35	4.60	0.0	457.75	200(J)	--	--	0.91(J)	<0.50	3.2	<0.50	--	--	--	4.9(J)	--

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WA-00217 (05377)

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All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-2	6/3/2015	(LFP)	462.35	6.07	0.0	456.28	230(J)	--	--	0.76(J)	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-2	6/3/2015	(Dup)(LFP)	462.35	6.07	0.0	456.28	170(J)	--	--	0.77(J)	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-3	7/2/2004	(P)	101.18	8.88	--	92.30	2,100	--	--	<0.500	<0.500	<0.500	7.71	24.2	<0.010	<1.00	<1.00	<1.00
MW-3	9/27/2004	(P)	101.18	8.08	--	93.10	593	--	--	<0.500	<0.500	0.892	1.92	<1.00	--	--	<1.00	<1.00
MW-3	11/10/2004	(P)	101.18	11.11	--	90.07	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	<1.00
MW-3	1/7/2005	(ABANDONED)	101.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/2/2004	(P)	103.99	8.41	--	95.58	<50.0	--	--	<0.500	<0.500	1.17	2.36	<2.00	<0.010	<1.00	1.93	<1.00
MW-4	9/27/2004	(P)	103.99	8.60	--	95.39	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	--
MW-4	11/10/2004	(P)	103.99	7.62	--	96.37	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	<1.00
MW-4	2/22/2005	(P)	103.99	7.02	--	96.97	<80.0	--	--	<0.500	<0.500	<0.500	<1.00	--	--	--	--	--
MW-4	5/18/2005	(P)	103.99	6.04	--	97.95	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	<1.00
MW-4	8/16/2005	(P)	103.99	7.66	--	96.33	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-4	11/10/2005	(P)	103.99	7.42	--	96.57	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-4	1/12/2006	(NP)	103.99	5.28	--	98.71	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<1.00	1.29	--
MW-4	4/13/2006	(NS)	103.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/7/2006	(NS)	103.99	7.59	--	96.40	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/2/2007	(NS)	103.99	8.50	--	95.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/9/2008	(NP)	103.99	7.59	--	96.40	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	--	--	--	--	--
MW-4	8/13/2009	(NP)	103.99	10.15	--	93.84	<50.0	--	--	<1.00	<1.00	<1.00	<2.00	--	--	--	4.4	<2.00
MW-4	6/23/2010	(P)	466.74	6.86	--	459.88	<50	--	--	<1.0	<1.0	<1.0	<3	--	--	--	--	--
MW-4	12/7/2010	(LF)	466.74	7.53	--	459.21	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-4	3/29/2011	(LF)	466.74	5.71	0.0	461.03	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-4	5/10/2011	(LF)	466.74	5.23	0.0	461.51	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	<0.40	--
MW-4	12/2/2011	(NS)	466.74	8.79	0.0	457.95	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/9/2012	(LF)	466.74	6.53	0.0	460.21	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-4	11/26/2012	(LF)	466.74	7.52	0.0	459.22	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
MW-4	3/26/2013	(NS)	466.74	5.25	0.0	461.46	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/27/2013	(LF)	466.74	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-4	6/13/2013	(LF)	466.74	7.21	0.0	459.53	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-4	9/25/2013	(LF)	466.74	9.76	0.0	456.98	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	0.20	--
MW-4	12/17/2013	(NS)	466.74	9.41	0.0	457.33	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/5/2014	(NS)	466.74	6.12	0.0	460.62	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/31/2014	(NS)	466.74	8.41	0.0	458.33	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/19/2015	(NS)	466.74	5.37	0.0	461.37	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/3/2015	(LFP)	466.74	7.43	0.0	459.31	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-5	12/7/2010	(LF)	--	4.88	--	--	25,000	--	--	1.9	3.7	900	3,200	<1.0	--	--	<2.0	--
MW-5	3/29/2011	(LF)	462.55	3.17	0.0	459.38	1,900	--	--	<1.0	<1.0	62	140	<1.0	--	--	<2.0	--
MW-5	5/10/2011	(LF)	462.55	3.23	0.0	459.32	8,170	--	--	<2.00	<10.0	281	1,194	<10.0	--	--	2.40	--
MW-5	12/2/2011	(LF)	462.55	6.47	0.0	456.08	11,000	--	--	0.87	1.3	448	845	<1.0	--	--	--	--
MW-5	3/9/2012	(LF)	462.55	3.79	0.0	458.76	14,000	--	--	0.62	2.9	514	1,610	<1.0	--	--	<10.0	--
MW-5	11/26/2012	(LF, a)	462.55	4.89	0.0	457.66	4,720	--	--	<10.0	<10.0	1,040	940	<10.0	--	--	<3.0	<3.0
MW-5	3/26/2013	(NS)	462.55	3.90	0.0	458.65	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/27/2013	(LF)	462.55	--	--	--	2,660	--	--	<1.0	<1.0	278	480	<1.0	--	--	<3.0	<10.0
MW-5	6/13/2013	(ABANDONED)	462.55	5.15	0.0	457.40	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-00217 (05377)

13131 Bothell Everett Hwy, Everett, WA 98208

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-6	12/7/2010	(LF)	--	6.01	--	--	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-6	3/29/2011	(LF)	462.29	4.70	0.0	457.59	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-6	3/29/2011	(Dup)(LF)	462.29	4.70	0.0	457.59	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	<2.0	--
MW-6	5/10/2011	(LF)	462.29	4.51	0.0	457.78	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	5.60	--
MW-6	12/2/2011	(NS)	462.29	6.53	0.0	455.76	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/5/2011	(LF)	462.29	--	--	--	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	--	--
MW-6	3/9/2012	(LF)	462.29	4.98	0.0	457.31	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-6	11/26/2012	(LF)	462.29	5.27	0.0	457.02	814	--	--	<1.0	<1.0	79.3	66.4	<1.0	--	--	<3.0	<3.0
MW-6	3/26/2013	(NS)	462.29	4.49	0.0	457.80	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	3/27/2013	(LF)	462.29	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-6	6/13/2013	(LF)	462.29	6.18	0.0	456.11	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-6	9/25/2013	(LF)	462.29	8.67	0.0	453.62	<100	--	--	<1.0	<1.0	6.2	<3.0	<1.0	--	--	0.24	--
MW-6	12/17/2013	(LF)	462.29	7.73	0.0	454.56	<50	--	--	<0.50	<0.70	<0.80	<0.80	<0.50	--	--	12.60(J)	<4.70
MW-6	3/5/2014	(LF)	462.29	4.68	0.0	457.61	<50	--	--	<0.50	<0.70	<0.80	<0.80	--	--	--	<4.7	<4.7
MW-6	7/31/2014	(LF)	462.29	7.45	0.0	454.84	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	<4.7
MW-6	3/19/2015	(LFP)	462.29	4.71	0.0	457.58	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-6	6/3/2015	(LFP)	462.29	6.28	0.0	456.01	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-7	12/7/2010	(LF)	--	7.01	--	--	67	--	--	<1.0	<1.0	<1.0	<2.0	5.1	--	--	<2.0	--
MW-7	3/29/2011	(LF)	463.37	4.62	0.0	458.75	<50	--	--	<1.0	<1.0	<1.0	<2.0	1.1	--	--	<2.0	--
MW-7	5/10/2011	(LF)	463.37	5.10	0.0	458.27	<100	--	--	<0.200	<1.00	<1.00	<3	1.36	--	--	5.20	--
MW-7	12/2/2011	(NS)	463.37	7.37	0.0	456.00	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/9/2012	(LF)	463.37	5.88	0.0	457.49	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-7	11/26/2012	(LF)	463.37	6.19	0.0	457.18	<100	--	--	<1.0	<1.0	<1.0	<3.0	3.1	--	--	7.4	<3.0
MW-7	3/26/2013	(NS)	463.37	4.92	0.0	458.45	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/27/2013	(LF)	463.37	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	1.1	--	--	3.5	<10.0
MW-7	6/13/2013	(NS)	463.37	6.99	0.0	456.38	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/14/2013	(LF)	463.37	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	1.4	--	--	<10.0	--
MW-7	9/25/2013	(LF)	463.37	9.41	0.0	453.96	<100	--	--	<1.0	<1.0	3.1	<3.0	<1.0	--	--	21.4	--
MW-7	12/17/2013	(NS)	463.37	8.41	0.0	454.96	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/5/2014	(NS)	463.37	4.81	0.0	458.56	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	7/31/2014	(NS)	463.37	8.34	0.0	455.03	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/19/2015	(LFP)	463.37	5.12	0.0	458.25	83(J)	--	--	<0.50	<0.50	<0.50	0.88(J)	--	--	--	6.5(J)	--
MW-7	6/3/2015	(LFP)	463.37	7.57	0.0	455.80	150(J)	--	--	<0.50	<0.50	<0.50	1.3	--	--	--	<4.7	--
MW-8	12/7/2010	(LF)	--	6.79	--	--	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	13	--
MW-8	3/29/2011	(LF)	457.91	5.38	0.0	452.53	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	9.5	--
MW-8	5/10/2011	(LF)	457.91	5.12	0.0	452.79	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	14	--
MW-8	12/2/2011	(NS)	457.91	6.49	0.0	451.42	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/9/2012	(LF)	457.91	5.15	0.0	452.76	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-8	11/26/2012	(LF)	457.91	4.96	0.0	452.95	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
MW-8	3/26/2013	(NS)	457.91	4.93	0.0	452.98	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/27/2013	(LF)	457.91	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-8	6/13/2013	(NS)	457.91	6.08	0.0	451.83	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/14/2013	(LF)	457.91	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-8	9/25/2013	(LF)	457.91	7.98	0.0	449.93	<100	--	--	<1.0	<1.0	2.1	<3.0	<1.0	--	--	10	--
MW-8	12/17/2013	(NS)	457.91	6.83	0.0	451.08	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-00217 (05377)

13131 Bothell Everett Hwy, Everett, WA 98208

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-8	3/5/2014	(NS)	457.91	5.12	0.0	452.79	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	7/31/2014	(NS)	457.91	8.02	0.0	449.89	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/19/2015	(NS)	457.91	5.01	0.0	452.90	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	6/3/2015	(LFP)	457.91	5.02	0.0	452.89	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-9	12/7/2010	(LF)	--	7.67	--	--	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	8.3	--
MW-9	3/29/2011	(LF)	459.40	6.60	0.0	452.80	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	2.6	--
MW-9	5/10/2011	(LF)	459.40	6.67	0.0	452.73	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	1.30	--
MW-9	12/2/2011	(NS)	459.40	7.38	0.0	452.02	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/5/2011	(LF)	459.40	--	--	--	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	--	--
MW-9	3/9/2012	(LF)	459.40	6.84	0.0	452.56	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-9	11/26/2012	(LF)	459.40	6.85	0.0	452.55	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	3.4	<3.0
MW-9	3/26/2013	(NS)	459.40	6.58	0.0	452.82	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/27/2013	(LF)	459.40	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-9	6/13/2013	(NS)	459.40	8.25	0.0	451.15	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/14/2013	(LF)	459.40	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-9	9/25/2013	(LF)	459.40	8.81	0.0	450.59	<100	--	--	<1.0	<1.0	1.8	<3.0	<1.0	--	--	27.4	--
MW-9	12/17/2013	(NS)	459.40	7.74	0.0	451.66	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/5/2014	(NS)	459.40	7.29	0.0	452.11	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/31/2014	(NS)	459.40	9.13	0.0	450.27	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/19/2015	(NS)	459.40	6.78	0.0	452.62	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/3/2015	(LFP)	459.40	7.44	0.0	451.96	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	11.6(J)	--
MW-10	12/7/2010	(LF)	--	7.42	--	--	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	8.6	--
MW-10	3/29/2011	(LF)	459.28	6.28	0.0	453.00	<50	--	--	<1.0	<1.0	<1.0	<2.0	<1.0	--	--	3.1	--
MW-10	5/10/2011	(LF)	459.28	6.44	0.0	452.84	<100	--	--	<0.200	<1.00	<1.00	<3	<1.00	--	--	14	--
MW-10	12/2/2011	(NS)	459.28	7.00	0.0	452.28	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	12/5/2011	(LF)	459.28	--	--	--	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	--	--
MW-10	3/9/2012	(LF)	459.28	6.54	0.0	452.74	<50.0	--	--	<0.20	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-10	11/26/2012	(LF)	459.28	6.45	0.0	452.83	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<3.0
MW-10	3/26/2013	(NS)	459.28	6.31	0.0	452.97	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/27/2013	(LF)	459.28	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<3.0	<10.0
MW-10	6/13/2013	(NS)	459.28	8.01	0.0	451.27	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	6/14/2013	(LF)	459.28	--	--	--	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	--
MW-10	9/25/2013	(LF)	459.28	8.40	0.0	450.88	<100	--	--	<1.0	<1.0	1.8	<3.0	<1.0	--	--	26.6	--
MW-10	12/17/2013	(NS)	459.28	7.48	0.0	451.80	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/5/2014	(NS)	459.28	5.42	0.0	453.86	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	7/31/2014	(NS)	459.28	8.78	0.0	450.50	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/19/2015	(NS)	459.28	6.48	0.0	452.80	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	6/3/2015	(LFP)	459.28	5.49	0.0	453.79	<50	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	<4.7	--
MW-11	7/31/2014	(LF)	463.80	8.71	0.0	455.09	4,200	--	--	460	5.6	100	21	--	--	--	<4.7	<4.7
MW-11	3/19/2015	(LFP)	463.80	5.46	0.0	458.34	4,400	--	--	450	21	360	390	--	--	--	6.4(J)	--
MW-11	6/3/2015	(LFP)	463.80	7.63	0.0	456.17	5,100	--	--	400	6.9	230	220	--	--	--	<4.7	--

TOC = Top of casing in feet North American Vertical Datum of 1988 (NAVD 88)

DTW = Depth to water in feet below TOC

NAPL = Non-aqueous phase liquid thickness in feet

GWE = Groundwater elevation in feet NAVD 88

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-00217 (05377)

13131 Bothell Everett Hwy, Everett, WA 98208

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15

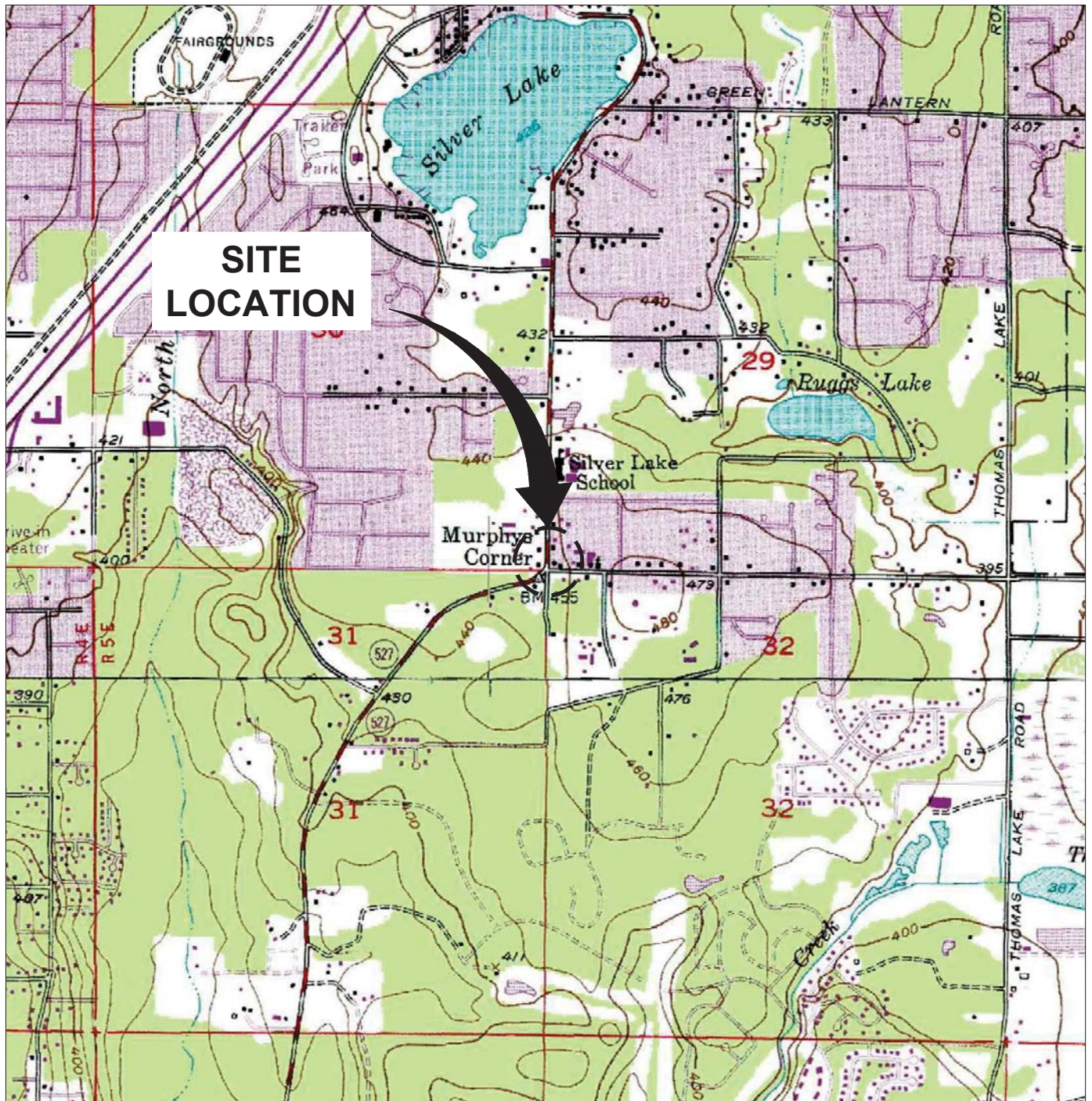
GRO = Total petroleum hydrocarbons - gasoline range organics
DRO = Total petroleum hydrocarbons - diesel range organics
HO = Total petroleum hydrocarbons - heavy oil range organics
MTBE = Methyl tertiary butyl ether
EDB = Ethylene dibromide
EDC = 1,2-Dichloroethane
800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L
-- = Not analyzed/not applicable
< = Analytical result is less than reporting limit shown
NS = Not sampled
LF/LFP = Low flow (purge) sample
DUP = Duplicate sample
J = estimated value – The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)
P = Purge sample
NP = No purge sample
a = Drawdown greater than 3 feet observed during sampling.
Wells were resurveyed in 2010 and are referenced to vertical datum NAVD 88 and horizontal datum NAD 83/98
If NAPL is present, the GWE is corrected according to the following formula (TOC elevation - depth to water) + (0.8 x NAPL thickness)
Data collected prior to 2010 have been provided by previous consultants and are included as historical reference only
GRO, DRO, HO analyzed by Ecology Northwest Methods; Benzene, toluene, ethylbenzene, and total xylenes (BTEX), MTBE, and EDB by 8260B; Lead by U.S. Environmental

BOLD constituent detected above MTCA Cleanup Levels

FIGURES



CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD: PIC: PM: S. DAVIS TM: T. POTTER LYN: (ON) ON: OFF: REF: G:\ENV\CAD\Emery\11000001\2015 GWMP\DWG\GP08BPNAWA01 N01.dwg LAYOUT: 1 SAVED: 4/9/2015 1:16 PM ACADVER: 18.15 (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 4/9/2015 1:16 PM BY: REYES, ALEC



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., EVERETT AND BOTHELL, WA, 1991.

0 2000' 4000'
Approximate Scale: 1 in. = 2000 ft.



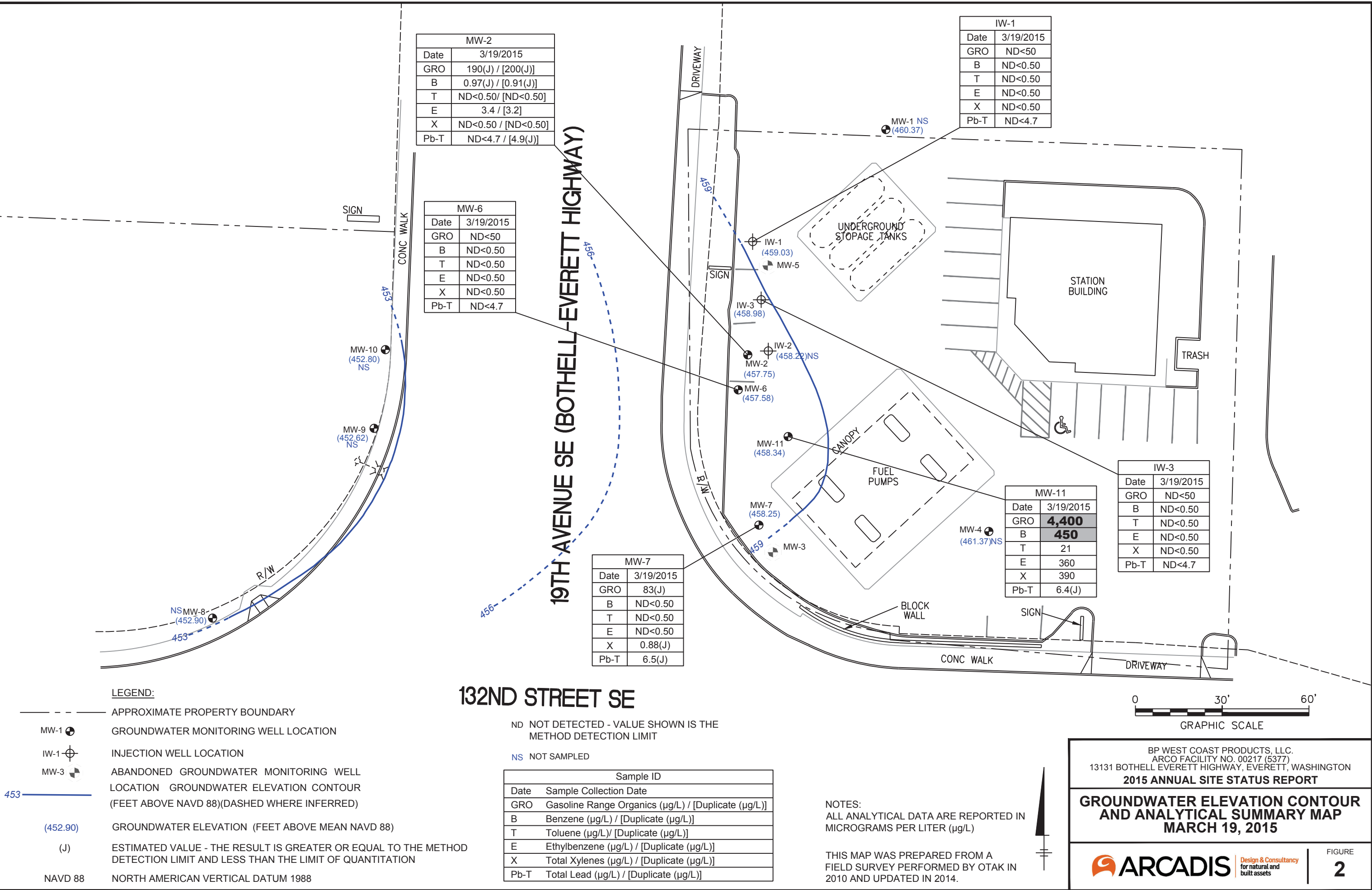
BP WEST COAST PRODUCTS, LLC.
ARCO STATION NO. 00217 (5377)
13131 BOTHELL EVERETT HIGHWAY, EVERETT, WASHINGTON
2015 ANNUAL SITE STATUS REPORT

SITE LOCATION MAP

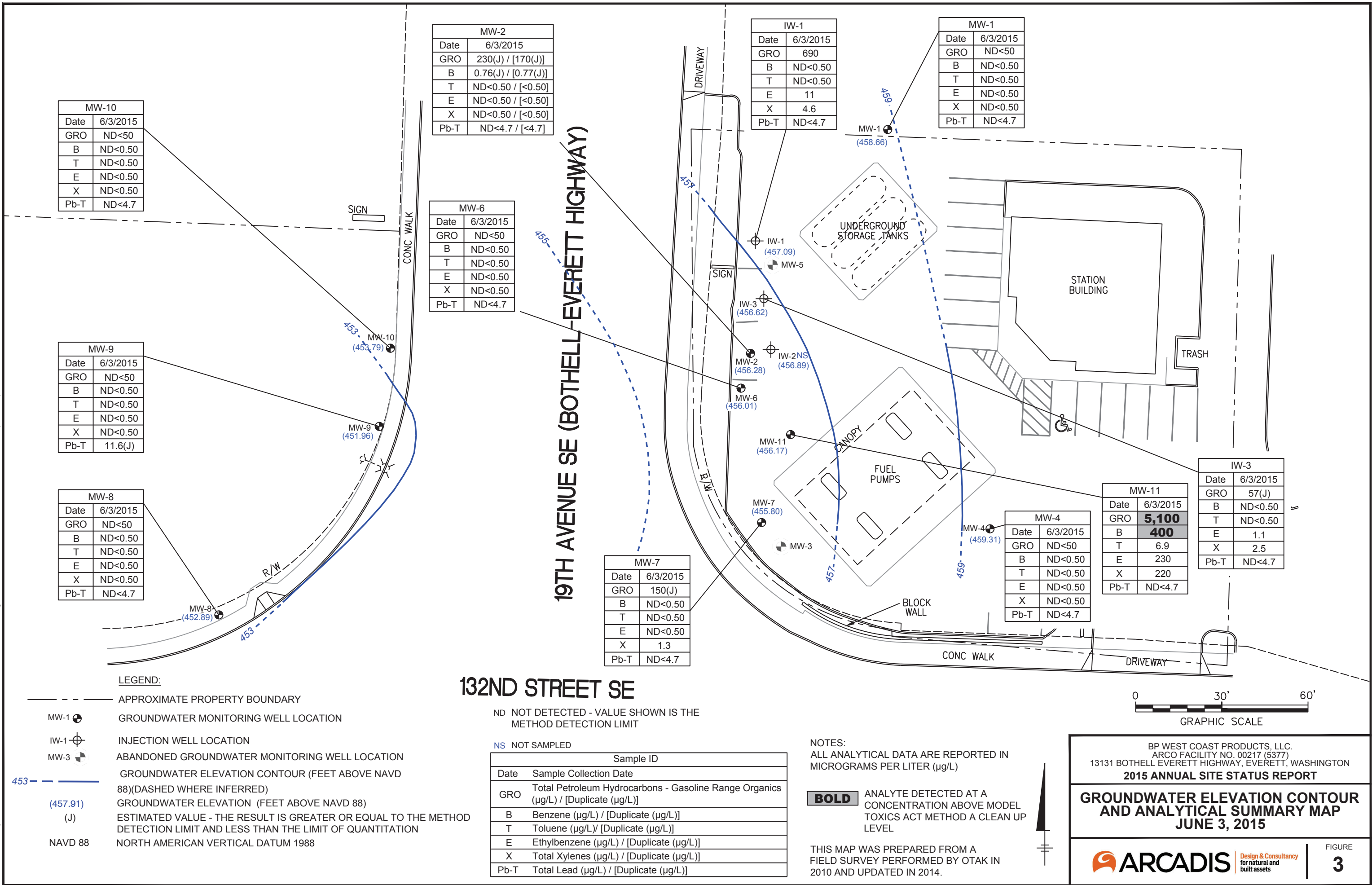
ARCADIS Design & Consultancy
for natural and built assets

FIGURE
1

CITY: (Reqd) DIV: (Group: Reqd) DE: (Reqd) LD: (Opt) PIC: (Opt) PM: (Opt) TY: (Opt) ION: "OFF" = REF* G:\ENVCAD\Emeryville\ACT\G09BPNA\WA01\0000\Annual 2015\DWG\G09BPNA\WA01 W02.dwg LAYOUT: 2, SAVED: 7/31/2015 9:34 AM ACADVER: 19.1S (LMS TECH) PAGES: 2 PLOT: 11/18/2015 11:47 AM BY: REYES, ALEC



CITY: (Redd) DIV: (GROUP: (Redd) DE: (Redd) LD: (Opt) PIC: (Opt) PM: (Redd) TM: (Opt) LVR: (Opt) ON: "OFF" = REF*
G:\ENV\CAD\Emeryville\ACT\GF09BPNA\WA01\0000\Annual 2015\DWG\GF09BPNA\WA01 W03.dwg LAYOUT: 3 SAVED: 11/4/2015 3:05 PM ACADVER: 19.1S (LMS TECH) PAGES: 3 PLOT: 11/4/2015 3:08 PM BY: REYES, ALEC



MW-10	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	ND<4.7

MW-9	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	11.6(J)

MW-8	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	ND<4.7

MW-2	
Date	6/3/2015
GRO	230(J) / [170(J)]
B	0.76(J) / [0.77(J)]
T	ND<0.50 / [<0.50]
E	ND<0.50 / [<0.50]
X	ND<0.50 / [<0.50]
Pb-T	ND<4.7 / [<4.7]

MW-6	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	ND<4.7

MW-7	
Date	6/3/2015
GRO	150(J)
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	1.3
Pb-T	ND<4.7

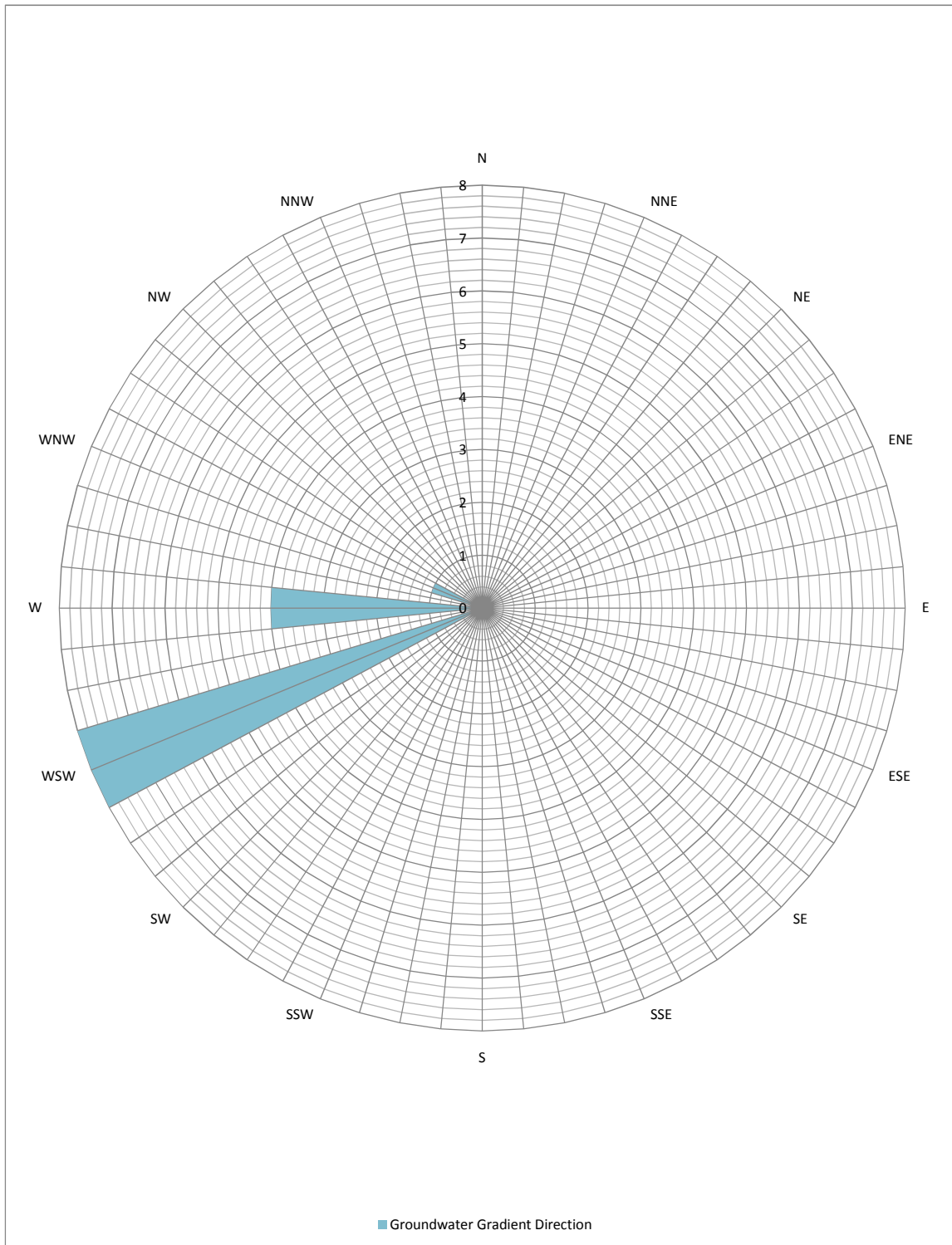
IW-1	
Date	6/3/2015
GRO	690
B	ND<0.50
T	ND<0.50
E	11
X	4.6
Pb-T	ND<4.7

MW-1	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	ND<4.7

MW-11	
Date	6/3/2015
GRO	57(J)
B	ND<0.50
T	ND<0.50
E	1.1
X	2.5
Pb-T	ND<4.7

IW-3	
Date	6/3/2015
GRO	57(J)
B	ND<0.50
T	ND<0.50
E	1.1
X	2.5
Pb-T	ND<4.7

MW-4	
Date	6/3/2015
GRO	ND<50
B	ND<0.50
T	ND<0.50
E	ND<0.50
X	ND<0.50
Pb-T	ND<4.7



Legend

N=North
 NNE= North Northeast
 NE= Northeast
 ENE= East Northeast
 E= East
 ESE= East Southeast
 SE=Southeast
 SSE= South Southeast
 S= South
 SW= Southwest
 SSW= South Southwest
 WSW= West South West
 W= West
 WNW= West Northwest
 NW=Northwest
 NNW= North Northwest

Note

Rose diagram based on gradient direction from groundwater monitoring events conducted by ARCADIS since top of casing survey in June 2010.

Number of Events Observed = 13

ATLANTIC RICHFIELD COMPANY
 ARCO FACILITY NO. 00217 (5377)
 13131 BOTHELL-EVERETT HIGHWAY, EVERETT, WASHINGTON

2015 ANNUAL SITE STATUS REPORT

HISTORICAL GROUNDWATER GRADIENT DIRECTION ROSE DIAGRAM



FIGURE

4

Attachment A

Groundwater Monitoring Field Data Sheets



WELL GAUGING DATA

Project # 1503 19- LRB1 Date 3/19/15 Client ARCADES

Site 13131 BOTHELL EVERETT Hwy, EVERETT, WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Water/ SPH Meter	PID
MW-1	0734	2					4.31	17.89	50 *	0.0
MW-2	0712	2					4.60	19.57	*	0.0
MW-4	0740	2					5.37	23.61	*	0.0
MW-6	0707	1					4.71	11.31	*	0.0
MW-7	0703	1					5.12	14.11	*	0.0
MW-8	0751	1					5.01	13.75	*	0.0
MW-9	0755	1					6.78	14.30	*	0.0
MW-10	0800	1					6.48	14.01	*	0.0
MW-11	0658	2					5.46	14.11	1/2	19.8
IWI-1	0728	4					3.49	14.39	*	0.4
IWI-2	0718	4					4.58	14.37	*	0.0
IWI-3	0723	4					3.55	14.36	*	4.1

Instruments Used: Durham Geoslope Water Level Indicator* GeoTech Oil/Water Interface Probe** Other: _____

Survey Point - Top of casing at all wells

LOW FLOW WELL MONITORING DATA SHEET

Project #: 15031A-LB1	Client: ARCADES
Sampler: LB	Gauging Date: 3/19/15
Well I.D.: MW-2	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 19.57	Depth to Water (ft.): 4.60
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSE 536

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 0920 Flow Rate: 200 mL/MIN Pump Depth: 12.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0923	12.08	6.78	444	18	1.49	15.8	600	4.63
0926	12.07	6.80	445	16	1.42	14.3	1200	4.63
0929	12.09	6.79	447	15	1.40	13.6	1800	4.63
0932	12.10	6.78	448	14	1.39	12.4	2400	4.63
0935	12.11	6.77	449	13	1.38	11.1	3000	4.63

Did well dewater? Yes ☒ No ☐	Amount actually evacuated: 3L
Sampling Time: 0936	Sampling Date: 3/19/15
Sample I.D.: MW-2-03192015	Laboratory: LANCASTER
Analyzed for: TRH-C ☒ BTEX ☒ MTBE ☐ TPH-D ☐ Other: SEE COL	
Equipment Blank I.D.: @ Time	Duplicate I.D.: BD-217-03092015

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150319-LB1	Client: ARCADES
Sampler: LB	Gauging Date: 3/19/15
Well I.D.: MW-6	Well Diameter (in.): 2 3 4 6 8 <u>①</u>
Total Well Depth (ft.): 11.31	Depth to Water (ft.): 4.71
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVC</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Pumping New Tubing Other _____
 Start Purge Time: 0849 Flow Rate: 200 mL / MIN Pump Depth: 8.5'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or ml)	Depth to Water (ft.)
0852	11.74	6.89	426	38	1.56	35.9	600	4.78
0855	11.81	6.83	424	39	1.53	32.8	1200	4.78
0858	11.87	6.85	424	37	1.52	31.3	1800	4.78
0901	11.88	6.84	423	36	1.51	30.6	2400	4.78
0904	11.90	6.83	422	35	1.50	29.4	3000	4.78

Did well dewater? Yes NO Amount actually evacuated: 3 L

Sampling Time: 0905 Sampling Date: 3/19/15

Sample I.D.: MW-6-03192015 Laboratory: LANCASTER

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150319-LB1	Client: ARCADES
Sampler: LB	Gauging Date: 3/19/15
Well I.D.: MW-7	Well Diameter (in.): 2 3 4 6 8 <u>10</u>
Total Well Depth (ft.): 14.11	Depth to Water (ft.): 5.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSC 556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 0813 Flow Rate: 100 mL / MIN Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0819	12.56	6.82	1026	26	1.69	37.6	600	5.18
0822	12.47	6.87	982	23	1.66	35.5	900	5.21
0825	12.40	6.85	988	22	1.65	34.1	1200	5.23
0828	12.41	6.84	987	21	1.64	33.2	1500	5.24
0831	12.42	6.83	986	20	1.63	32.8	1800	5.24

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: 1.8L
Sampling Time: 0832	Sampling Date: 3/19/15
Sample I.D.: MW-7 - 03192015	Laboratory: LANCASTER
Analyzed for: TPH-G <u>BTX</u> MTBE TPH-D	Other: SEE CCL
Equipment Blank I.D.: @	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150319-LB1	Client: ARCADIS
Sampler: LB	Gauging Date: 3/19/15
Well I.D.: MW-11	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.11	Depth to Water (ft.): 5.46
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	Flow Cell Type: YSE 956

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 1056 Flow Rate: 200 mL/min Pump Depth: 10'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1059	11.64	6.92	660	28	1.29	27.8	600	5.49
1102	11.69	6.89	668	25	1.25	22.7	1200	5.49
1105	11.68	6.88	670	23	1.23	20.8	1800	5.49
1108	11.67	6.87	671	22	1.22	19.4	2400	5.49
1111	11.66	6.86	672	21	1.21	18.4	3000	5.49

Did well dewater? Yes ☒ NO	Amount actually evacuated: 3L
Sampling Time: 1112	Sampling Date: 3/19/15
Sample I.D.: MW-11-03192015	Laboratory: LANCASTER
Analyzed for: TPH-G ☒ BTEX ☒ MTBE ☐ TPH-D ☐ Other ☒ SEE COC	
Equipment Blank I.D.: @	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150319-LB1	Client: ARCADES
Sampler: LB	Gauging Date: 3/19/15
Well I.D.: IW-1	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.39	Depth to Water (ft.): 3.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVO Grade	Flow Cell Type: YSI 536

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 0954 Flow Rate: 200 ML / MIN Pump Depth: 10'

Time	Temp. (C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or m³)	Depth to Water (ft.)
0957	11.39	6.99	290	19	1.41	50.5	600	3.49
1000	11.38	6.94	291	18	1.36	49.7	1200	3.49
1003	11.40	6.95	289	17	1.34	48.3	1800	3.49
1006	11.41	6.97	289	17	1.33	47.4	2400	3.49
1009	11.42	6.98	287	16	1.32	46.2	3000	3.49

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 3L

Sampling Time: 1010 Sampling Date: 3/19/15

Sample I.D.: # IW-1-03192015 Laboratory: LANCASTER

Analyzed for: TPH-G ☒ BTEX ☒ MTBE ☐ TPH-D ☐ Other: SEE COC

Equipment Blank I.D.: @ Time Duplicate I.D.:

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>150319-LB1</u>	Client: <u>ARCADIS</u>
Sampler: <u>LB</u>	Gauging Date: <u>3/19/15</u>
Well I.D.: <u>1W-3</u>	Well Diameter (in.): 2 3 <u>4</u> 6 8
Total Well Depth (ft.): <u>14.36</u>	Depth to Water (ft.): <u>3.55</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	Flow Cell Type: <u>VS-550</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 1019 Flow Rate: 200 mL / MIN Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1022	11.31	6.91	253	22	1.10	14.1	600	3.55
1025	11.36	6.85	252	20	1.09	13.7	1200	3.55
1028	11.40	6.83	251	19	1.08	12.4	1800	3.55
1031	11.41	6.82	250	18	1.07	11.6	2400	3.55
1034	11.42	6.83	249	17	1.06	10.4	3000	3.55

Did well dewater? Yes <u>NO</u>	Amount actually evacuated: <u>3L</u>
Sampling Time: <u>1035</u>	Sampling Date: <u>3/19/15</u>
Sample I.D.: <u>1W-3-03192015</u>	Laboratory: <u>LANCASTER</u>
Analyzed for: <u>TPH-D</u> <u>BTEX</u> MTBE TPH-D	Other: <u>SEE COC</u>
Equipment Blank I.D.: @	Duplicate I.D.:

WELL GAUGING DATA

Project # 150603-CPI Date 6/3/15 Client Arcoadis

Site 13131 Bothell Everett Hwy Everett WA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Water/ SPH Meter	PID
MW-1	0830	2					6.02	18.01	*	0.0
MW-2	0853	2					6.07	14.71	*	0.0
MW-4	0925	2					7.43	23.72	*	0.0
MW-6	0848	1					6.28	11.58	*	0.0
MW-7	0846	1					7.57	14.11	*	0.0
MW-8	0802	1					5.02	13.80	*	0.0
MW-9	0809	1					7.44	14.40	*	0.0
MW-10	0815	1					5.49	14.03	*	0.0
MW-11	0918	2					7.63	14.28	*	0.0
IW-1	0855	4					5.43	14.48	*	0.0
IW-2	0907	4					5.91	14.51	*	0.0
IW-3	0858	4					5.91	14.42	*	0.0

Instruments Used: Durham Geoslope Water Level Indicator* GeoTech Oil/Water Interface Probe** Other: _____

Survey Point - Top of casing at all wells

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>150603-CP1</u>	Client: <u>Arcoadis</u>
Sampler: <u>C. Peter</u>	Gauging Date: <u>6/3/15</u>
Well I.D.: <u>MW-1</u>	Well Diameter (in.): <u>(2)</u> 3 4 6 8
Total Well Depth (ft.): <u>18.01</u>	Depth to Water (ft.): <u>6.02</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PV2</u> Grade	Flow Cell Type: <u>VS1556</u>

Purge Method: 2" Grundfos Pump ; Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 1221 Flow Rate: 200 mL/min Pump Depth: 12'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1224	16.34	7.06	278	459	4.30	155.7	600	6.12
1227	16.42	6.99	278	97	4.18	129.5	1200	6.19
1230	16.53	6.94	278	49	4.10	107.2	1800	6.26
1233	16.59	6.91	278	25	4.08	100.7	2400	6.31
1236	16.61	6.90	278	17	4.05	99.3	3000	6.40

Did well dewater? Yes <u>(No)</u>	Amount actually evacuated: <u>3.0L</u>
Sampling Time: <u>1237</u>	Sampling Date: <u>6/3/15</u>
Sample I.D.: <u>MW-1-06032015</u>	Laboratory: <u>Lancaster</u>
Analyzed for: <u>TPH-G</u> <u>BTEX</u> MTBE TPH-D	Other: <u>See cor</u>
Equipment Blank I.D.: <u>@</u> Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CP1	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-2	Well Diameter (in.): (2) 3 4 6 8
Total Well Depth (ft.): 19.71	Depth to Water (ft.): 6.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: FV2 Grade	Flow Cell Type: VSI 556

Purge Method: 2" Grundfos Pump ; Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 1003 Flow Rate: 200 mL/min Pump Depth: 13

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1006	14.52	6.85	422	30	3.52	140.1	600	6.10
1009	14.55	6.82	417	18	3.19	114.6	1200	6.15
1012	14.59	6.78	412	17	2.98	96.1	1800	6.19
1015	14.63	6.76	409	15	2.78	89.2	2400	6.21
1018	14.67	6.75	409	15	2.69	85.1	3000	6.25

Did well dewater? Yes (No)	Amount actually evacuated: 3.0L
Sampling Time: 1020	Sampling Date: 6/3/15
Sample I.D.: MW-2-06032015	Laboratory: Lancaster
Analyzed for: TPH-G BTEX MTBE TPH-D	Other: See COS
Equipment Blank I.D.: TB-1 @ Time 0735	Duplicate I.D.: BD-217-06032015

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-4	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 23.72	Depth to Water (ft.): 7.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVD Grade	Flow Cell Type: 451556

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 0931 Flow Rate: 200 mL/min Pump Depth: 16'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
0934	15.36	7.08	495	81	7.20	256.5	600	7.71
0937	15.43	6.90	493	59	6.91	203.8	1200	7.75
0940	15.58	6.76	506	53	5.33	187.1	1800	7.79
0943	15.61	6.74	511	42	5.29	180.9	2400	7.85
0946	15.70	6.67	516	33	5.20	169.1	3000	7.89

Did well dewater? Yes ☒ No	Amount actually evacuated: 3.0L
Sampling Time: 0947	Sampling Date: 6/3/15
Sample I.D.: MW-4-06032015	Laboratory: Lancaster
Analyzed for: TPH-G ☒ BTEX ☒ MTBE ☐ TPH-D	Other: See doc
Equipment Blank I.D.: @	Duplicate I.D.: Time

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CP1	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-6	Well Diameter (in.): 2 3 4 6 8 <u>1</u>
Total Well Depth (ft.): 11.58	Depth to Water (ft.): 6.28
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PV2</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 1047 Flow Rate: 200 mL/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1050	14.94	6.68	435	209	2.88	149.1	600	6.30
1053	14.89	6.62	435	150	2.49	114.9	1200	6.30
1056	14.92	6.55	435	114	2.27	93.7	1800	6.30
1059	14.93	6.50	434	76	2.15	88.6	2400	6.30
1102	14.93	6.48	433	69	2.10	81.9	3000	6.30

Did well dewater? Yes <u>No</u>	Amount actually evacuated: 3.0L
Sampling Time: 1103	Sampling Date: 6/3/15
Sample I.D.: MW-6-06032015	Laboratory: Lancaster
Analyzed for: TPH <u>6</u> BTEX <u>6</u> MTBE TPH-D	Other: See doc
Equipment Blank I.D.: @	Duplicate I.D.: Time

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CP1	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-7	Well Diameter (in.): 2 3 4 6 8 1
Total Well Depth (ft.): 14.61	Depth to Water (ft.): 7.57
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: FV2 Grade	Flow Cell Type: YSI 556

Purge Method: 2" Grundfos Pump
 Sampling Method: Dedicated Tubing
 Start Purge Time: 1123 Flow Rate: 200 mL/min
 Peristaltic Pump New Tubing
 Bladder Pump Other
 Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1126	15.90	6.34	694	178	2.24	125.1	600	7.62
1129	16.04	6.38	690	211	2.05	86.2	1200	7.62
1132	16.09	6.41	685	378	1.93	84.1	1800	7.62
1135	15.99	6.45	662	401	1.99	85.9	2400	7.62
1138	15.93	6.48	646	410	2.15	90.1	3000	7.62

Did well dewater? Yes ☒ No	Amount actually evacuated: 3.0L
Sampling Time: 1140	Sampling Date: 6/3/15
Sample I.D.: MW-7-06032015	Laboratory: Lancaster
Analyzed for: TPH-C BTEX MTBE TPH-D	Other: See COS
Equipment Blank I.D.: @	Duplicate I.D.: Time

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-8	Well Diameter (in.): 2 3 4 6 8 <u>1</u>
Total Well Depth (ft.): 13.80	Depth to Water (ft.): 5.02
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>202</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 1420 Flow Rate: 200 mL/min Pump Depth: 9'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1423	15.22	6.92	202	198	3.12	224.8	600	5.25
1426	15.20	6.77	205	172	2.89	185.7	1200	5.25
1429	15.10	6.51	209	155	2.62	154.6	1800	5.28
1432	15.11	6.48	210	142	2.46	142.9	2400	5.29
1435	15.10	6.45	210	131	2.42	140.7	3000	5.29

Did well dewater? Yes ☒ No ☐	Amount actually evacuated: 3.0L
Sampling Time: 1436	Sampling Date: 6/3/15
Sample I.D.: MW-8-06032015	Laboratory: Lancaster
Analyzed for: TPH-C ☒ BTEX ☒ MTBE ☐ TPH-D ☐	Other: See doc
Equipment Blank I.D.: @	Duplicate I.D.: Time

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>150603-CPI</u>	Client: <u>Arcoadis</u>
Sampler: <u>C. Peter</u>	Gauging Date: <u>6/3/15</u>
Well I.D.: <u>MW-9</u>	Well Diameter (in.): 2 3 4 6 8 <u>1</u>
Total Well Depth (ft.): <u>14.40</u>	Depth to Water (ft.): <u>7.44</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVD</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 1445 Flow Rate: 200 mL/min Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1448	13.19	5.95	200	505	3.06	150.1	600	7.89
1451	12.89	5.73	192	590	2.84	139.1	1200	8.05
1454	12.92	5.70	190	601	2.69	125.2	1800	8.27
1457	12.94	5.67	192	610	2.60	121.5	2400	8.79
1500	12.47	5.66	192	615	2.56	119.8	3000	9.21

Did well dewater? Yes <u>No</u>	Amount actually evacuated: <u>3.0L</u>
Sampling Time: <u>1501</u>	Sampling Date: <u>6/3/15</u>
Sample I.D.: <u>MW-9-06032015</u>	Laboratory: <u>Lancaster</u>
Analyzed for: <u>TPH</u> <u>BTEX</u> MTBE TPH-D	Other: <u>See cos</u>
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: Arcadis
Sampler: C Peter	Gauging Date: 6/3/15
Well I.D.: MW-10	Well Diameter (in.): 2 3 4 6 8 <u>1</u>
Total Well Depth (ft.): 14.03	Depth to Water (ft.): 5.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PV2</u> Grade	Flow Cell Type: <u>YSI 556</u>

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 1508 Flow Rate: 200 mL/min Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1511	13.70	5.81	131	109	4.01	199.9	600	5.82
1514	13.67	5.69	131	92	3.81	172.0	1200	6.01
1517	13.65	5.67	131	85	3.79	169.7	1800	6.47
1520	13.55	5.64	128	75	3.74	160.5	2400	6.65
1523	13.53	5.64	127	71	3.75	159.9	3000	6.90

Did well dewater? Yes <u>No</u>	Amount actually evacuated: 3.0L
Sampling Time: 1524	Sampling Date: 6/3/15
Sample I.D.: MW-10-06032015	Laboratory: Lancaster
Analyzed for: TPH <u>C</u> BTEX <u>C</u> MTBE TPH-D	Other: SEE COS
Equipment Blank I.D.: @	Duplicate I.D.: Time

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: ARCADES
Sampler: LB	Gauging Date: 6/3/15
Well I.D.: MW-11	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.28	Depth to Water (ft.): 7.63
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVO Grade	Flow Cell Type: YSL-536

Purge Method: 2" Grundfos Pump Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other _____
 Start Purge Time: 1347 Flow Rate: 200 ML / MIN Pump Depth: 11'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or m³)	Depth to Water (ft.)
1350	15.38	6.46	550	20	1.53	54.1	600	7.65
1353	15.46	6.58	552	15	1.42	43.4	1200	7.65
1356	15.48	6.54	550	14	1.40	42.6	1800	7.65
1359	15.49	6.53	549	13	1.39	41.2	2400	7.65
1402	15.50	6.52	548	12	1.38	40.8	3000	7.65

Did well dewater? Yes ☒ No ☐	Amount actually evacuated: 3 L
Sampling Time: 1403	Sampling Date: 6/3/15
Sample I.D.: MW-11-060315 06032015	Laboratory: LANCASTER
Analyzed for: TPH-G ☒ BTEX ☒ MTBE ☐ TPH-D ☐ Other: SECCOX	
Equipment Blank I.D.: @	Duplicate I.D.:

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: Arcadis
Sampler: C Peteri	Gauging Date: 6/3/15
Well I.D.: IW-1	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.48	Depth to Water (ft.): 5.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVD Grade	Flow Cell Type: VSI 556

Purge Method: 2" Grundfos Pump ; Peristaltic Pump Bladder Pump
 Sampling Method: Dedicated Tubing New Tubing Other
 Start Purge Time: 1242 Flow Rate: 200 mL/min Pump Depth: 8'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1245	15.98	6.82	332	47	2.52	132.7	600	5.51
1248	16.08	6.82	335	41	2.19	103.2	1200	5.58
1251	16.18	6.82	336	23	2.05	96.2	1800	5.64
1254	16.22	6.82	336	20	1.94	90.0	2400	5.70
1257	16.23	6.82	337	15	1.89	87.5	3000	5.76

Did well dewater? Yes ☒ No ☐	Amount actually evacuated: 3.0L
Sampling Time: 1258	Sampling Date: 6/3/15
Sample I.D.: IW-1-06032015	Laboratory: Lancaster
Analyzed for: TPH-C ☒ RTEX ☒ MTBE ☐ TPH-D ☐	Other: SEE COR
Equipment Blank I.D.: @ Time	Duplicate I.D.:

LOW FLOW WELL MONITORING DATA SHEET

Project #: 150603-CPI	Client: Arcadis
Sampler: C Peteri	Gauging Date: 6/3/15
Well I.D.: IW-3	Well Diameter (in.): 2 3 4 6 8
Total Well Depth (ft.): 14.42	Depth to Water (ft.): 5.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVD Grade	Flow Cell Type: VSI 556

Purge Method: 2" Grundfos Pump
 Sampling Method: Dedicated Tubing
 Start Purge Time: 1307 Flow Rate: 200 mL/min
 Peristaltic Pump New Tubing
 Bladder Pump Other
 Pump Depth: 10'

Time	Temp. (°C or °F)	pH	Cond. (mS/cm or µS/cm)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (gals. or mL)	Depth to Water (ft.)
1310	15.82	6.65	429	38	2.23	139.2	600	6.05
1313	15.90	6.64	435	32	2.06	123.7	1200	6.10
1316	15.98	6.63	438	23	1.89	107.2	1800	6.14
1319	16.01	6.63	439	23	1.85	103.9	2400	6.19
1322	16.03	6.63	440	21	1.79	98.5	3000	6.25

Did well dewater? Yes ☒ No	Amount actually evacuated: 3.0L
Sampling Time: 1323	Sampling Date: 6/3/15
Sample I.D.: IW-3 - 06032015	Laboratory: Lancaster
Analyzed for: TPH-C ☒ BTEX ☒ MTBE ☐ TPH-D	Other: See cor
Equipment Blank I.D.: @	Duplicate I.D.: Time

Attachment B

Laboratory Report and Chain-of-Custody Documentation



ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

April 02, 2015

Project: WA-0217Submittal Date: 03/21/2015
Group Number: 1547113
PO Number: GP09BPNA.WA01
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
MW-2-03192015 Water	7815335
MW-6-03192015 Water	7815337
MW-7-03192015 Water	7815339
MW-11-03192015 Water	7815341
IW-1-03192015 Water	7815343
IW-3-03192015 Water	7815345
BD-217-03192015 Water	7815347

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/> .

ELECTRONIC ARCADIS U.S., Inc.
COPY TO
ELECTRONIC ARCADIS U.S., Inc.
COPY TO
ELECTRONIC ARCADIS U.S., Inc.
COPY TO

Attn: Sam Miles

Attn: Richard Rodriguez

Attn: Ryan Brauchla

Respectfully Submitted,



Stacy L. Butt
Specialist

(717) 556-7236

Project Name: WA-0217
LL Group #: 1547113

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: MW-2-03192015 Water
WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815335

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 09:36 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEE02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	0.97 J	0.50	1.0	1
10335	Ethylbenzene	100-41-4	3.4	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	190 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 18:28	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 18:28	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15085B20A	03/27/2015 16:05	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 16:05	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 07:31	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6-03192015 Water
WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815337

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 09:05 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEE06

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 18:51	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 18:51	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15085B20A	03/27/2015 16:33	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 16:33	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 07:35	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-7-03192015 Water

WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815339

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 08:32 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEE07

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	0.88 J	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	83 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	6.5 J	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 19:15	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 19:15	Christopher G Torres	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15085B20A	03/27/2015 17:01	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 17:01	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	04/01/2015 02:42	Elaine F Stoltzfus	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11-03192015 Water
WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815341

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 11:12 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEE11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	450	5.0	10	10
10335	Ethylbenzene	100-41-4	360	5.0	10	10
10335	Toluene	108-88-3	21	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	390	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	4,400	500	2,500	10
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	6.4 J	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/29/2015 01:29	Christopher G Torres	1
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/29/2015 01:52	Christopher G Torres	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/29/2015 01:29	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	W150871AA	03/29/2015 01:52	Christopher G Torres	10
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15085B20A	03/27/2015 22:07	Marie D Beamenderfer	10
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 22:07	Marie D Beamenderfer	10
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 06:46	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: IW-1-03192015 Water
WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815343

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 10:10 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEEI1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 19:38	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 19:38	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15085B20A	03/27/2015 17:29	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 17:29	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 07:43	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: IW-3-03192015 Water
WA-0217

13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815345

LL Group # 1547113

Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 10:35 by LB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/21/2015 09:30

630 Plaza Drive

Reported: 04/02/2015 12:56

Highlands Ranch CO 80129

BEEI3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 20:01	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 20:01	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15085B20A	03/27/2015 17:57	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 17:57	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 07:47	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: BD-217-03192015 Water
WA-0217
13131 Bothell-Everett Highway - Everett, WA

LL Sample # WW 7815347
LL Group # 1547113
Account # 13255

Project Name: WA-0217

Collected: 03/19/2015 by LB

Atlantic Richfield c/o ARCADIS

Submitted: 03/21/2015 09:30

Suite 600

Reported: 04/02/2015 12:56

630 Plaza Drive

Highlands Ranch CO 80129

BEEFD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	0.91 J	0.50	1.0	1
10335	Ethylbenzene	100-41-4	3.2	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	200 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	4.9 J	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W150871AA	03/28/2015 20:25	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W150871AA	03/28/2015 20:25	Christopher G Torres	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15085B20A	03/27/2015 18:24	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15085B20A	03/27/2015 18:24	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	150861848001	03/30/2015 07:50	Joanne M Gates	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	150861848001	03/29/2015 22:00	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Quality Control SummaryClient Name: Atlantic Richfield c/o ARCADIS
Reported: 04/02/2015 12:56

Group Number: 1547113

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: W150871AA	Sample number(s): 7815335,7815337,7815339,7815341,7815343,7815345,7815347								
Benzene	N.D.	0.50	1.0	ug/l	101	101	78-120	0	30
Ethylbenzene	N.D.	0.50	1.0	ug/l	104	103	80-120	1	30
Toluene	N.D.	0.50	1.0	ug/l	103	102	80-120	0	30
Xylene (Total)	N.D.	0.50	1.0	ug/l	107	105	80-120	2	30
Batch number: 15085B20A	Sample number(s): 7815335,7815337,7815339,7815341,7815343,7815345,7815347								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	102	101	80-123	1	30
Batch number: 150861848001	Sample number(s): 7815335,7815337,7815339,7815341,7815343,7815345,7815347								
Lead	N.D.	4.7	15.0	ug/l	102		80-120		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 150861848001	Sample number(s): 7815335,7815337,7815339,7815341,7815343,7815345,7815347 UNSPK:								
Lead	102	104	75-125	2	20	6.4	J 5.8	J 10 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs 8260 BTEX
Batch number: W150871AA

	<u>Dibromofluoromethane</u>	<u>1,2-Dichloroethane-d4</u>	<u>Toluene-d8</u>	<u>4-Bromofluorobenzene</u>
7815335	104	104	102	99
7815337	109	105	99	93
7815339	106	101	98	95
7815341	108	99	101	103
7815343	109	101	99	93
7815345	111	101	98	91
7815347	107	98	102	98

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS

Group Number: 1547113

Reported: 04/02/2015 12:56

Surrogate Quality Control

Blank	108	101	98	93
LCS	104	97	102	102
LCSD	105	101	102	101
Limits:	80-116	77-113	80-113	78-113

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 15085B20A

Trifluorotoluene-F

7815335	98
7815337	95
7815339	95
7815341	88
7815343	85
7815345	94
7815347	97
Blank	94
LCS	102
LCSD	101
Limits:	63-135

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

acct# 13255 Cp# 1547113 sample# 7815335-49

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

Required Client Information:

Company: ARCADIS
Address: 1100 Olive Way Suite 800
Seattle, WA 98101
Email To: Ryan.Brauchla@arcadis-us.com
Phone: 206-726-4757 Fax: 206-325-8218
Requested Due Date/TAT: 10 Day (Default)

Section B

Required Project Information:

Report To: Ryan Brauchla
Copy To: Richard Rodriguez
Purchase Order No.
Client Project ID: ARCO 217
Project Number: GP09BPNA.WA01.N0000

Section C

Invoice Information:

Attention: Ryan Brauchla
Company Name: ARCADIS
Address: 1100 Olive Way Suite 800, Seattle, WA
Project Manager: Natalie Luciano

Page : 1 Of 1

Regulatory Agency	
Department of Ecology	
State / Location	
WA	

ITEM#	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other	CODE DW WT WW P SL OL WP AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Y/N	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	**Dissolved Lead On Hold dependent on total lead results. Contact Arcadis for instructions. Dissolved lead to be lab filtered.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
						START		END				Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other		GRO (NWTPH-Gx)	BTEX (8260B)	Total Pb (EPA 6010)	**Dissolved Lead (6010)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		3/19/15		Ryan Brauchla / ELLE	3/20/15	15:00				
				3/21/15 / ELLE	3/21/15	930	0.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: LEE BURES					
SIGNATURE of SAMPLER: 					

Client: Arcadis**Delivery and Receipt Information**

Delivery Method:	<u>SeaTac</u>	Arrival Timestamp:	<u>03/21/2015 9:30</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace $\geq$ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCI
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

*Unpacked by Wesley Miller (2308) at 10:12 on 03/21/2015***Samples Chilled Details**

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT121	0.6	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value $\geq$ the Method Detection Limit (MDL or DL) and the $<$ Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

June 22, 2015

Project: WA-0217Submittal Date: 06/05/2015
Group Number: 1566791
PO Number: GP09BPNA.WA01
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
MW-1-06032015 Grab Water	7916690
MW-2-06032015 Grab Water	7916692
MW-4-06032015 Grab Water	7916694
MW-6-06032015 Grab Water	7916696
MW-7-06032015 Grab Water	7916698
MW-8-06032015 Grab Water	7916700
MW-9-06032015 Grab Water	7916702
MW-10-06032015 Grab Water	7916704
MW-11-06032015 Grab Water	7916706
IW-1-06032015 Grab Water	7916708
IW-3-06032015 Grab Water	7916710
BD-217-06032015 Grab Water	7916712

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Richard Rodriguez
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Ryan Brauchla
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Sam Miles
ELECTRONIC COPY TO	ARCADIS U.S., Inc.	Attn: Prajakta Ghatpande

Respectfully Submitted,



Stacy L. Butt
Specialist

(717) 556-7236

Project Name: WA-0217
LL Group #: 1566791

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 6010B, Metals**

Batch #: 151621848001 (Sample number(s): 7916708 UNSPK: P917389 BKG: P917389)

The duplicate RPD for the following analyte(s) exceeded the acceptance window:
Lead

Sample Description: MW-1-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916690
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 12:37 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEHM1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 06:22	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 06:22	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15159A53A	06/09/2015 18:14	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15159A53A	06/09/2015 18:14	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:09	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916692
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 10:20 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEHM2

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	0.76 J	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	230 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 07:33	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 07:33	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15159A53A	06/09/2015 18:42	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15159A53A	06/09/2015 18:42	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:12	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-4-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916694
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 09:47 by CP

Atlantic Richfield c/o ARCADIS

Submitted: 06/05/2015 09:20

Suite 600

Reported: 06/22/2015 13:36

630 Plaza Drive

Highlands Ranch CO 80129

BEHM4

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 07:56	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 07:56	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15159A53A	06/09/2015 19:10	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15159A53A	06/09/2015 19:10	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 11:31	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916696
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 11:03 by CP

Atlantic Richfield c/o ARCADIS

Submitted: 06/05/2015 09:20

Suite 600

Reported: 06/22/2015 13:36

630 Plaza Drive

Highlands Ranch CO 80129

BEHM6

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 08:20	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 08:20	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15159A53A	06/09/2015 20:06	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15159A53A	06/09/2015 20:06	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:15	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-7-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916698
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 11:40 by CP

Atlantic Richfield c/o ARCADIS

Submitted: 06/05/2015 09:20

Suite 600

Reported: 06/22/2015 13:36

630 Plaza Drive

Highlands Ranch CO 80129

BEHM7

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	1.3	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	150 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 08:44	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 08:44	Christopher G Torres	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15159A53A	06/09/2015 20:33	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	15159A53A	06/09/2015 20:33	Marie D Beamenderfer	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:19	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-8-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916700
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 14:36 by CP

Atlantic Richfield c/o ARCADIS

Submitted: 06/05/2015 09:20

Suite 600

Reported: 06/22/2015 13:36

630 Plaza Drive

Highlands Ranch CO 80129

BEHM8

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151622AA	06/12/2015 09:07	Christopher G Torres	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151622AA	06/12/2015 09:07	Christopher G Torres	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15160A53A	06/10/2015 08:25	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 08:25	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:22	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-9-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916702
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 15:01 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEHM9

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	11.6 J	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151641AA	06/13/2015 13:18	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151641AA	06/13/2015 13:18	Linda C Pape	1
08273	NWT PH-Gx water C7-C12	ECY 97-602	1	15160A53A	06/10/2015 08:54	Jeremy C Giffin	1
		NWT PH-Gx					
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 08:54	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:25	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916704
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 15:24 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEH10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151641AA	06/13/2015 14:29	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151641AA	06/13/2015 14:29	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15160A53A	06/10/2015 09:21	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 09:21	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:28	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916706
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 14:03 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEH11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	400	5.0	10	10
10335	Ethylbenzene	100-41-4	230	0.50	1.0	1
10335	Toluene	108-88-3	6.9	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	220	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	5,100	250	1,300	5
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151651AA	06/14/2015 08:30	Stephanie A Selis	1
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151662AA	06/16/2015 00:40	Kevin A Sposito	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151651AA	06/14/2015 08:30	Stephanie A Selis	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	W151662AA	06/16/2015 00:40	Kevin A Sposito	10
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15162A53A	06/11/2015 18:42	Marie D Beamenderfer	5
01146	GC VOA Water Prep	SW-846 5030B	1	15162A53A	06/11/2015 18:42	Marie D Beamenderfer	5
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:31	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: IW-1-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916708
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 12:58 by CP

Atlantic Richfield c/o ARCADIS

Submitted: 06/05/2015 09:20

Suite 600

Reported: 06/22/2015 13:36

630 Plaza Drive

Highlands Ranch CO 80129

BEHI1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	11	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	4.6	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	690	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151641AA	06/13/2015 14:53	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151641AA	06/13/2015 14:53	Linda C Pape	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15160A53A	06/10/2015 10:17	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 10:17	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151621848001	06/12/2015 10:24	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151621848001	06/11/2015 22:30	Annamaria Kuhns	1

*=This limit was used in the evaluation of the final result

Sample Description: IW-3-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916710
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 13:23 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEHI3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	1.1	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	2.5	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWT PH-Gx		ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	57 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151651AA	06/14/2015 08:54	Stephanie A Selis	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151651AA	06/14/2015 08:54	Stephanie A Selis	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	15160A53A	06/10/2015 10:45	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 10:45	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:41	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Sample Description: BD-217-06032015 Grab Water
BP 0217
13131 Bothell-Everett Hwy - Everett, WA

LL Sample # WW 7916712
LL Group # 1566791
Account # 13255

Project Name: WA-0217

Collected: 06/03/2015 by CP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 06/05/2015 09:20

630 Plaza Drive

Reported: 06/22/2015 13:36

Highlands Ranch CO 80129

BEHBD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
	SW-846 8260B		ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	0.77 J	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC Volatiles						
	ECY 97-602 NWTPH-Gx		ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	170 J	50	250	1
Metals						
	SW-846 6010B		ug/l	ug/l	ug/l	
07055	Lead	7439-92-1	N.D.	4.7	15.0	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX	SW-846 8260B	1	W151651AA	06/14/2015 09:17	Stephanie A Selis	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	W151651AA	06/14/2015 09:17	Stephanie A Selis	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15160A53A	06/10/2015 11:41	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	15160A53A	06/10/2015 11:41	Jeremy C Giffin	1
07055	Lead	SW-846 6010B	1	151611848001	06/12/2015 12:44	Eric L Eby	1
01848	ICP-WW, 3005A (tot rec) - U3	SW-846 3005A	1	151611848001	06/11/2015 13:34	James L Mertz	1

*=This limit was used in the evaluation of the final result

Quality Control SummaryClient Name: Atlantic Richfield c/o ARCADIS
Reported: 06/22/2015 13:36

Group Number: 1566791

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: W151622AA	Sample number(s): 7916690,7916692,7916694,7916696,7916698,7916700								
Benzene	N.D.	0.50	1.0	ug/l	104		78-120		
Ethylbenzene	N.D.	0.50	1.0	ug/l	109		80-120		
Toluene	N.D.	0.50	1.0	ug/l	105		80-120		
Xylene (Total)	N.D.	0.50	1.0	ug/l	104		80-120		
Batch number: W151641AA	Sample number(s): 7916702,7916704,7916708								
Benzene	N.D.	0.50	1.0	ug/l	104		78-120		
Ethylbenzene	N.D.	0.50	1.0	ug/l	110		80-120		
Toluene	N.D.	0.50	1.0	ug/l	106		80-120		
Xylene (Total)	N.D.	0.50	1.0	ug/l	106		80-120		
Batch number: W151651AA	Sample number(s): 7916706,7916710,7916712								
Benzene	N.D.	0.50	1.0	ug/l	102	98	78-120	3	30
Ethylbenzene	N.D.	0.50	1.0	ug/l	111	110	80-120	1	30
Toluene	N.D.	0.50	1.0	ug/l	106	104	80-120	2	30
Xylene (Total)	N.D.	0.50	1.0	ug/l	107	105	80-120	2	30
Batch number: W151662AA	Sample number(s): 7916706								
Benzene	N.D.	0.50	1.0	ug/l	108	105	78-120	3	30
Batch number: 15159A53A	Sample number(s): 7916690,7916692,7916694,7916696,7916698								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	101	101	80-123	1	30
Batch number: 15160A53A	Sample number(s): 7916700,7916702,7916704,7916708,7916710,7916712								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	101	101	80-123	0	30
Batch number: 15162A53A	Sample number(s): 7916706								
NWTPH-Gx water C7-C12	N.D.	50.	250	ug/l	101	99	80-123	2	30
Batch number: 151611848001	Sample number(s): 7916690,7916692,7916694,7916696,7916698,7916700,7916702,7916704,7916706,7916710,7916712								
Lead	N.D.	4.7	15.0	ug/l	105		80-120		
Batch number: 151621848001	Sample number(s): 7916708								
Lead	N.D.	4.7	15.0	ug/l	97		80-120		

Sample Matrix Quality Control

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS

Group Number: 1566791

Reported: 06/22/2015 13:36

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: W151622AA	Sample number(s): 7916690,7916692,7916694,7916696,7916698,7916700 UNSPK: 7916690								
Benzene	107	105	72-134	2	30				
Ethylbenzene	115	112	71-134	2	30				
Toluene	109	107	80-125	2	30				
Xylene (Total)	109	107	79-125	2	30				
Batch number: W151641AA	Sample number(s): 7916702,7916704,7916708 UNSPK: 7916702								
Benzene	109	105	72-134	4	30				
Ethylbenzene	116	115	71-134	0	30				
Toluene	110	110	80-125	1	30				
Xylene (Total)	111	110	79-125	1	30				
Batch number: 151611848001	Sample number(s): 7916690,7916692,7916694,7916696,7916698,7916700,7916702,7916704,7916706,7916710,7916712 UNSPK: 7916694 BKG: 7916694								
Lead	101	102	75-125	1	20	N.D.	N.D.	0 (1)	20
Batch number: 151621848001	Sample number(s): 7916708 UNSPK: P917389 BKG: P917389								
Lead	110	110	75-125	0	20	N.D.	5.8	J 200* (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs 8260 BTEX
Batch number: W151622AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7916690	98	102	100	98
7916692	95	98	103	100
7916694	97	104	102	99
7916696	99	104	101	98
7916698	99	103	101	99
7916700	97	103	102	100
Blank	95	102	103	98
LCS	98	99	103	101
MS	96	99	103	102
MSD	98	102	104	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: VOCs 8260 BTEX
Batch number: W151641AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7916702	97	104	102	97
7916704	96	100	102	98
7916708	97	102	104	101
Blank	98	102	101	97
LCS	96	95	104	101
MS	97	96	104	101

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control SummaryClient Name: Atlantic Richfield c/o ARCADIS
Reported: 06/22/2015 13:36

Group Number: 1566791

Surrogate Quality Control

MSD	93	92	104	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: VOCs 8260 BTEX

Batch number: W151651AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7916706	95	99	104	101
7916710	97	100	103	98
7916712	95	100	104	100
Blank	98	100	103	99
LCS	94	91	104	102
LCSD	93	92	105	103
Limits:	80-116	77-113	80-113	78-113

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 15159A53A

Trifluorotoluene-F

7916690	112
7916692	108
7916694	111
7916696	110
7916698	109
Blank	111
LCS	114
LCSD	116
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 15160A53A

Trifluorotoluene-F

7916700	109
7916702	101
7916704	100
7916708	110
7916710	101
7916712	104
Blank	113
LCS	112
LCSD	114
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 15162A53A

Trifluorotoluene-F

7916706	111
Blank	109
LCS	113
LCSD	113
Limits:	63-135

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Client: ARCADIS**ARCO 217****Delivery and Receipt Information**

Delivery Method:	<u>SeaTac</u>	Arrival Timestamp:	<u>06/05/2015 9:20</u>
Number of Packages:	<u>2</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace $\geq$ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

*Unpacked by Corey Eshleman (3647) at 10:26 on 06/05/2015***Samples Chilled Details: ARCO 217***Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT121	0.5	DT	Wet	Y	Bagged	N
2	DT121	0.9	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value $\geq$ the Method Detection Limit (MDL or DL) and the $<$ Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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