



Remediation Management Services Company

4 Centerpointe Drive, Suite 200
La Palma, CA 90623
Room LPR 4-222
Office: (360) 594-7978
wade.melton@bp.com

January 30, 2019

Washington Department of Ecology
Southwest Regional Office
Attn: Mr. Aaren Fielder
300 Desmond Drive SE
Lacey, WA 98503

Dear Mr. Fielder:

Please find the enclosed Semi-Annual Groundwater Monitoring Report – Second Half of 2018, that documents the results at ARCO Facility No. 5300 located at 710 15th Avenue, Longview, Washington.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Wade Melton', written over a light blue rectangular background.

Wade Melton
Operations Project Manager
Remediation Management Services Company
An affiliate of Atlantic Richfield Company

cc: File, Antea Group



Semi-Annual Groundwater Monitoring Report

Second Half of 2018
ARCO Facility No. 5300
710 15th Avenue, Longview, Washington

Antea®Group

Understanding today.
Improving tomorrow.

PREPARED FOR

Remediation Management Services
Company

An affiliate of Atlantic Richfield Company
4 Centerpointe Drive, Suite 200
Room LPR-4-222
La Palma, CA 90623

January 30, 2019

Antea Group Project No. 05300SA181

us.anteagroup.com

ARCO Facility No.:	5300
Address:	710 15th Avenue, Longview, Washington
Atlantic Richfield Project Manager:	Wade Melton, (360) 594-7978
Consulting Co. /Contact Person:	Antea Group / Megan Richard, (425) 498-7711
Consultant Project Number:	05300SA181
Primary Agency/Regulatory FS ID No.:	Washington State Department of Ecology / 41995646

WORK PERFORMED DURING SECOND HALF OF 2018:

- Antea®Group (Antea Group) conducted groundwater monitoring and sampling on August 14th, September 11th, and November 29th, 2018.
- Antea Group conducted in-situ chemical oxidation (ISCO) events on August 14, 2018, August 21, 2018, and August 28, 2018.
- Antea Group prepared this Semi-Annual Groundwater Monitoring Report.

WORK SCHEDULED FOR FIRST HALF OF 2019:

- Antea Group will conduct quarterly groundwater monitoring and sampling.
- Antea Group will modify the Underground Injection Control (UIC) registration to accommodate alternative in-situ remedial products.
- Antea Group will prepare a workplan to conduct an additional assessment.
- Antea Group will prepare a Semi-Annual Groundwater Monitoring Report.

Current Phase of Project:	Remediation
Frequency of Groundwater Sampling and Monitoring:	Quarterly
Are LPH Present On-Site/Off-Site:	No
LPH Recovered this Reporting Period:	None
Cumulative LPH Recovered to Date:	None
Amount of Soil Removed to Date:	9.91 tons (Dispenser Upgrades – Antea Group, December 2010)
Current Remediation Techniques:	ISCO
Approximate Depth to Groundwater:	8/14/2018: 11.34 to 12.42 ft. 9/11/2018: 11.32 to 12.45 ft. 11/29/2018: 11.10 to 12.10 ft.

Groundwater Gradient:	8/14/2018: Southwest 9/11/2018: Southwest 11/29/2018: West-Southwest
	8/14/2018: 0.01 ft./linear ft. 9/11/2018: 0.008 ft./linear ft. 11/29/2018: 0.007 ft./linear ft.

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by



Forrest Shafer
 Staff Professional

Date: January 30, 2019



Megan Richard, LG
 Project Manager



MEGAN RICHARD

Date: January 22, 2019

cc: Mr. Aaren Fiedler, Washington Department of Ecology, Southwest Regional Office (Hard Copy, Electronic Copy)
 Mr. Wade Melton, Remediation Management Services Company (Electronic copy, RMO upload)
 File, Antea Group

Contact Information

4006 148th Avenue NE
 Redmond, WA 98052 USA

Toll Free +1 800 477 7411
 International +1 425 882 3528

Enclosures

Tables

Table 1	Groundwater Gauging Data
Table 2	Groundwater Analytical Data

Figures

Figure 1	Site Location Map
Figure 2	Site Aerial Map
Figure 3	Groundwater Analytical and Elevation Contour Map - 8/14/2018
Figure 4	Groundwater Analytical and Elevation Contour Map - 9/11/2018
Figure 5	Groundwater Analytical and Elevation Contour Map - 11/29/2018

Appendix

Appendix A	Analytical Lab Reports and Chain-of-Custody Documentation
------------	---

Tables

Table 1	Groundwater Gauging Data
Table 2	Groundwater Analytical Data

TABLE 1
Groundwater Gauging Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-1	9/6/2012	99.90	11.57	NP	--	88.33	--
MW-1	12/14/2012	99.90	10.45	NP	--	89.45	--
MW-1	1/9/2013	99.90	10.42	NP	--	89.48	--
MW-1	5/29/2013	99.90	10.68	NP	--	89.22	--
MW-1	8/20/2013	99.90	11.45	NP	--	88.45	--
MW-1	11/13/2013	99.90	11.08	NP	--	88.82	--
MW-1	2/19/2014	99.90	10.54	NP	--	89.36	--
MW-1	4/23/2014	99.90	10.40	NP	--	89.50	--
MW-1	8/7/2014	99.90	11.28	NP	--	88.62	--
MW-1	11/19/2014	99.90	11.12	NP	--	88.78	--
MW-1	2/25/2015	99.90	10.72	NP	--	89.18	--
MW-1	8/11/2015	99.90	11.84	NP	--	88.06	--
MW-1	2/3/2016	99.90	10.10	NP	--	89.80	--
MW-1	4/8/2016	99.90	10.20	NP	--	89.70	--
MW-1	9/20/2016	99.90	11.88	NP	--	88.02	--
MW-1	12/28/2016	99.90	10.18	NP	--	89.72	--
MW-1	3/24/2017	99.90	9.65	NP	--	90.25	--
MW-1	6/22/2017	99.90	10.42	NP	--	89.48	--
MW-1	9/29/2017	99.90	11.48	NP	--	88.42	--
MW-1	11/14/2017	99.90	10.91	NP	--	88.99	--
MW-1	2/26/2018	99.90	10.02	NP	--	89.88	--
MW-1	6/12/2018	99.90	10.61	NP	--	89.29	--
MW-1	8/14/2018	99.90	11.40	NP	--	88.50	--
MW-1	9/11/2018	99.90	11.42	NP	--	88.48	--
MW-1	11/29/2018	99.90	11.12	NP	--	88.78	--
MW-2	9/6/2012	99.72	11.43	NP	--	88.29	--
MW-2	12/14/2012	99.72	10.45	NP	--	89.27	--
MW-2	1/9/2013	99.72	10.38	NP	--	89.34	--
MW-2	5/29/2013	99.72	10.66	NP	--	89.06	--
MW-2	8/20/2013	99.72	11.35	NP	--	88.37	--
MW-2	11/13/2013	99.72	11.02	NP	--	88.70	--
MW-2	2/19/2014	99.72	10.49	NP	--	89.23	--
MW-2	4/23/2014	99.72	10.38	NP	--	89.34	--
MW-2	8/7/2014	99.72	11.22	NP	--	88.50	--
MW-2	11/19/2014	99.72	11.03	NP	--	88.69	--
MW-2	2/25/2015	99.72	10.72	NP	--	89.00	--
MW-2	8/11/2015	99.72	11.74	NP	--	87.98	--

TABLE 1
Groundwater Gauging Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-2	2/3/2016	99.72	9.88	NP	--	89.84	--
MW-2	4/8/2016	99.72	10.13	NP	--	89.59	--
MW-2	9/20/2016	99.72	11.80	NP	--	87.92	--
MW-2	12/28/2016	99.72	10.11	NP	--	89.61	--
MW-2	3/24/2017	99.72	9.55	NP	--	90.17	--
MW-2	6/22/2017	99.72	10.35	NP	--	89.37	--
MW-2	9/29/2017	99.72	11.41	NP	--	88.31	--
MW-2	11/14/2017	99.72	10.48	NP	--	89.24	--
MW-2	2/26/2018	99.72	9.92	NP	--	89.80	--
MW-2	6/12/2018	99.72	10.56	NP	--	89.16	--
MW-2	8/14/2018	99.72	11.34	NP	--	88.38	--
MW-2	9/11/2018	99.72	11.32	NP	--	88.40	--
MW-2	11/29/2018	99.72	11.10	NP	--	88.62	--
MW-3	9/6/2012	99.68	11.63	NP	--	88.05	--
MW-3	12/14/2012	99.68	10.51	NP	--	89.17	--
MW-3	1/9/2013	99.68	10.45	NP	--	89.23	--
MW-3	5/29/2013	99.68	10.81	NP	--	88.87	--
MW-3	8/20/2013	99.68	11.55	NP	--	88.13	--
MW-3	11/13/2013	99.68	11.10	NP	--	88.58	--
MW-3	2/19/2014	99.68	10.01	NP	--	89.67	--
MW-3	4/23/2014	99.68	10.47	NP	--	89.21	--
MW-3	8/7/2014	99.68	11.36	NP	--	88.32	--
MW-3	11/19/2014	99.68	11.10	NP	--	88.58	--
MW-3	2/25/2015	99.68	10.92	NP	--	88.76	--
MW-3	8/11/2015	99.68	11.94	NP	--	87.74	--
MW-3	2/3/2016	99.68	10.25	NP	--	89.43	--
MW-3	4/8/2016	99.68	10.44	NP	--	89.24	--
MW-3	9/20/2016	99.68	11.82	NP	--	87.86	--
MW-3	12/28/2016	99.68	10.20	NP	--	89.48	--
MW-3	3/24/2017	99.68	9.63	NP	--	90.05	--
MW-3	6/22/2017	99.68	10.85	NP	--	88.83	--
MW-3	9/29/2017	99.68	11.64	NP	--	88.04	--
MW-3	11/14/2017	99.68	10.81	NP	--	88.87	--
MW-3	2/26/2018	99.68	9.95	NP	--	89.73	--
MW-3	6/12/2018	99.68	10.90	NP	--	88.78	--
MW-3	8/14/2018	99.68	11.56	NP	--	88.12	--

TABLE 1
Groundwater Gauging Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-3	9/11/2018	99.68	11.57	NP	--	88.11	--
MW-3	11/29/2018	99.68	11.12	NP	--	88.56	--
MW-4	9/6/2012	100.00	12.02	NP	--	87.98	--
MW-4	12/14/2012	100.00	11.03	NP	--	88.97	--
MW-4	1/9/2013	100.00	10.90	NP	--	89.10	--
MW-4	5/29/2013	100.00	11.28	NP	--	88.72	--
MW-4	8/20/2013	100.00	11.95	NP	--	88.05	--
MW-4	11/13/2013	100.00	11.69	NP	--	88.31	--
MW-4	2/19/2014	100.00	10.73	NP	--	89.27	--
MW-4	4/23/2014	100.00	11.14	NP	--	88.86	--
MW-4	8/7/2014	100.00	11.88	NP	--	88.12	--
MW-4	11/19/2014	100.00	11.71	NP	--	88.29	--
MW-4	2/25/2015	100.00	11.43	NP	--	88.57	--
MW-4	8/11/2015	100.00	12.25	NP	--	87.75	--
MW-4	2/3/2016	100.00	10.65	NP	--	89.35	--
MW-4	4/8/2016	100.00	10.78	NP	--	89.22	--
MW-4	9/20/2016	100.00	12.40	NP	--	87.60	--
MW-4	12/28/2016	100.00	10.70	NP	--	89.30	--
MW-4	3/24/2017	100.00	10.11	NP	--	89.89	--
MW-4	6/22/2017	100.00	11.11	NP	--	88.89	--
MW-4	9/29/2017	100.00	12.01	NP	--	87.99	--
MW-4	11/14/2017	100.00	11.48	NP	--	88.52	--
MW-4	2/26/2018	100.00	10.48	NP	--	89.52	--
MW-4	6/12/2018	100.00	11.32	NP	--	88.68	--
MW-4	8/14/2018	100.00	11.97	NP	--	88.03	--
MW-4	9/11/2018	100.00	11.99	NP	--	88.01	--
MW-4	11/29/2018	100.00	11.71	NP	--	88.29	--
MW-5	4/8/2016	99.63	11.13	NP	--	88.50	--
MW-5	9/20/2016	99.63	12.40	NP	--	87.23	--
MW-5	12/28/2016	99.63	11.24	NP	--	88.39	--
MW-5	3/24/2017	99.63	10.70	NP	--	88.93	--
MW-5	6/22/2017	99.63	11.41	NP	--	88.22	--
MW-5	9/29/2017	99.63	12.07	NP	--	87.56	--
MW-5	11/14/2017	99.63	11.69	NP	--	87.94	--
MW-5	2/26/2018	99.63	11.03	NP	--	88.60	--
MW-5	6/12/2018	99.63	11.50	NP	--	88.13	--

TABLE 1
Groundwater Gauging Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-5	8/14/2018	99.63	11.96	NP	--	87.67	--
MW-5	9/11/2018	99.63	12.10	NP	--	87.53	--
MW-5	11/29/2018	99.63	11.86	NP	--	87.77	--
MW-6	8/20/2013	99.76	11.63	NP	--	88.13	--
MW-6	11/13/2013	99.76	11.43	NP	--	88.33	--
MW-6	2/19/2014	99.76	10.51	NP	--	89.25	--
MW-6	4/23/2014	99.76	10.68	NP	--	89.08	--
MW-6	8/7/2014	99.76	11.60	NP	--	88.16	--
MW-6	11/19/2014	99.73	11.35	NP	--	88.38	--
MW-6	2/25/2015	99.73	11.04	NP	--	88.69	--
MW-6	8/11/2015	99.73	12.00	NP	--	87.73	--
MW-6	2/3/2016	99.73	10.13	NP	--	89.60	--
MW-6	4/8/2016	99.73	10.40	NP	--	89.33	--
MW-6	9/20/2016	99.73	12.11	NP	--	87.62	--
MW-6	12/28/2016	99.73	10.43	NP	--	89.30	--
MW-6	3/24/2017	99.73	9.76	NP	--	89.97	--
MW-6	6/22/2017	99.73	10.78	NP	--	88.95	--
MW-6	9/29/2017	99.73	11.70	NP	--	88.03	--
MW-6	11/14/2017	99.73	11.16	NP	--	88.57	--
MW-6	2/26/2018	99.73	10.11	NP	--	89.62	--
MW-6	6/12/2018	99.73	10.95	NP	--	88.78	--
MW-6	8/14/2018	99.73	11.62	NP	--	88.11	--
MW-6	9/11/2018	99.73	11.65	NP	--	88.08	--
MW-6	11/29/2018	99.73	11.39	NP	--	88.34	--
MW-7	8/20/2013	100.27	12.40	NP	--	87.87	--
MW-7	11/13/2013	100.27	12.09	NP	--	88.18	--
MW-7	2/19/2014	100.27	10.91	NP	--	89.36	--
MW-7	4/23/2014	100.27	11.52	NP	--	88.75	--
MW-7	8/7/2014	100.27	12.35	NP	--	87.92	--
MW-7	11/19/2014	100.27	12.09	NP	--	88.18	--
MW-7	2/25/2015	100.27	11.83	NP	--	88.44	--
MW-7	8/11/2015	100.27	12.75	NP	--	87.52	--
MW-7	2/3/2016	100.27	11.00	NP	--	89.27	--
MW-7	4/8/2016	100.27	11.40	NP	--	88.87	--
MW-7	9/20/2016	100.27	12.73	NP	--	87.54	--
MW-7	12/28/2016	100.27	11.18	NP	--	89.09	--

TABLE 1
Groundwater Gauging Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-7	3/24/2017	100.27	10.70	NP	--	89.57	--
MW-7	6/22/2017	100.27	11.67	NP	--	88.60	--
MW-7	9/29/2017	100.27	12.50	NP	--	87.77	--
MW-7	11/14/2017	100.27	11.90	NP	--	88.37	--
MW-7	2/26/2018	100.27	10.97	NP	--	89.30	--
MW-7	6/12/2018	100.27	11.88	NP	--	88.39	--
MW-7	8/14/2018	100.27	12.42	NP	--	87.85	--
MW-7	9/11/2018	100.27	12.45	NP	--	87.82	--
MW-7	11/29/2018	100.27	12.10	NP	--	88.17	--
MW-8	8/20/2013	100.00	12.04	NP	--	87.96	--
MW-8	11/13/2013	100.00	12.73	NP	--	87.27	--
MW-8	2/19/2014	100.00	10.29	NP	--	89.71	--
MW-8	4/23/2014	100.00	11.14	NP	--	88.86	--
MW-8	8/7/2014	100.00	11.94	NP	--	88.06	--
MW-8	11/19/2014	100.00	11.70	NP	--	88.30	--
MW-8	2/25/2015	100.00	11.50	NP	--	88.50	--
MW-8	8/11/2015	100.00	12.42	NP	--	87.58	--
MW-8	2/3/2016	100.00	10.65	NP	--	89.35	--
MW-8	4/8/2016	100.00	11.04	NP	--	88.96	--
MW-8	9/20/2016	100.00	12.37	NP	--	87.63	--
MW-8	12/28/2016	100.00	10.76	NP	--	89.24	--
MW-8	3/24/2017	100.00	10.26	NP	--	89.74	--
MW-8	6/22/2017	100.00	11.30	NP	--	88.70	--
MW-8	9/29/2017	100.00	12.15	NP	--	87.85	--
MW-8	11/14/2017	100.00	11.41	NP	--	88.59	--
MW-8	2/26/2018	100.00	10.55	NP	--	89.45	--
MW-8	6/12/2018	100.00	11.52	NP	--	88.48	--
MW-8	8/14/2018	100.00	12.07	NP	--	87.93	--
MW-8	9/11/2018	100.00	12.08	NP	--	87.92	--
MW-8	11/29/2018	100.00	11.70	NP	--	88.30	--

Notes:

TOC - Top of Casing

ft - feet

NP - No Product

LNAPL - Light Non-Aqueous Phase Liquid

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

-- No Information Available

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	NE
Well ID	Date										
MW-1	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50.0	50.6	--
MW-1	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	< 3.0	--
MW-1	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	< 1.0	< 80	11	--
MW-1	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	< 0.50	< 0.0096	< 0.50	< 50	< 10	--
MW-1	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50	< 0.0096	< 0.50	< 50	< 10	< 10
MW-1	11/13/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	8.1	< 2.0
MW-1	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	< 100	< 2.0	< 2.0
MW-1	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	190	< 2.0	< 2.0
MW-1	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0*	--	--	< 50*	< 2.0	< 2.0
MW-1	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-1	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-1	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-1	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 4.0	< 4.0
MW-1	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 500	< 4.0	< 4.0
MW-1	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-1	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	< 1.0 H1 L1 SS	--	--	< 100	< 10.0	< 10.0
MW-1	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-1	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-1	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	< 2.0*	--	--	< 250	< 4.0	< 4.0
MW-1	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-1	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-2	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	2.6	< 0.010	< 1.0	< 50.0	15.8	--
MW-2	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	< 3.0	--
MW-2	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	< 1.0	< 80	< 1.0	--
MW-2	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	0.66	< 0.0098	< 0.50	< 50	13.0	--
MW-2	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	0.70	< 0.0097	< 0.50	< 50	< 10	< 10
MW-2	11/13/2013	< 1.0	2.8	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	7.8	< 2.0
MW-2	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	< 100	< 2.0	< 2.0

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	NE
MW-2	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	65	< 2.0	< 2.0
MW-2	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0*	--	--	< 50*	< 2.0	< 2.0
MW-2	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-2	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-2	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0
MW-2	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 4.0	< 4.0
MW-2	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 500	< 4.0	< 4.0
MW-2	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-2	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	< 1.0 H1 L1	--	--	< 100	< 10.0	< 10.0
MW-2	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-2	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-2	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	< 2.0*	--	--	< 250	< 4.0	< 4.0
MW-2	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-2	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-3	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	16.9	< 0.010	< 1.0	< 50.0	< 10.0	--
MW-3	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	11.1	--
MW-3	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	17	< 1.0	< 1.0	< 80	< 1.0	--
MW-3	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	14	< 0.0097	< 0.50	< 50	10.7	--
MW-3	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	7.9	< 0.0097	< 0.50	< 50	< 10	< 10
MW-3	11/13/2013	< 1.0	2.3	< 1.0	< 3.0	17	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	11	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	14	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	25	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	11	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	8.1	--	--	< 100	< 2.0	< 2.0
MW-3	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	3.8	--	--	54	< 2.0	< 2.0
MW-3	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	4.8 H	--	--	< 50*	< 2.0	< 2.0
MW-3	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	7.9	--	--	< 50	< 2.0	< 2.0
MW-3	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	8.6	--	--	< 50	< 2.0	< 2.0
MW-3	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	13	--	--	< 50	< 2.0	< 2.0
MW-3	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	4.8	--	--	< 50	< 4.0	< 4.0
MW-3	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	9.2	--	--	< 500	< 4.0	< 4.0
MW-3	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	10.3	--	--	< 100	< 10.0	< 10.0
MW-3	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	5.4 H1 L1 SS	--	--	< 100	< 10.0	< 10.0
MW-3	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	8.0	--	--	< 100	< 10.0	< 10.0
MW-3	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0	6.7	--	--	< 100	13.4	< 10.0
MW-3	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	9.2 *	--	--	< 250	< 4.0	< 4.0

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	NE
MW-3	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	8.2	--	--	< 250	< 4.0	< 4.0
MW-3	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	6.7	--	--	< 250	< 4.0	< 4.0
MW-4	9/6/2012	6.1	< 1.0	290	116	3.6	< 0.010	< 1.0	10200	< 10.0	--
MW-4	12/14/2012	4.8	< 1.0	208	50.7	--	< 0.01	< 1.0	3230	15.8	--
MW-4	1/9/2013	< 5.0	< 5.0	250	56	< 5.0	< 5.0	< 5.0	4500	6.1	--
MW-4	5/29/2013	2.1	< 0.50	220	48.8	2.6	< 0.0095	< 0.50	4500	14.7	--
MW-4	8/20/2013	1.6	< 0.50	240	47	< 2.4	< 0.0098	< 0.50	4500	< 10	< 10
MW-4	11/13/2013	1.7	1.9	270	43	1.1	< 0.010	< 1.0	7100	8.9	8.2
MW-4	2/19/2014	1.1	< 1.0	180	26	2.0	< 0.010	< 1.0	5400	5.6	5.7
MW-4	4/23/2014	< 1.0	< 1.0	130	17	< 1.0	< 0.010	< 1.0	5800	8.6	6.1
MW-4	8/7/2014	< 1.0	< 1.0	170	15	< 1.0	< 0.010	< 1.0	5700	6.6	6.0
MW-4	11/19/2014	< 1.0	< 1.0	< 1.0	7.6	< 1.0	< 0.010	< 1.0	4900	9.0	6.9
MW-4	2/25/2015	< 2.0*	< 2.0*	130	5.5	< 1.0	--	--	< 100	6.1	5.3
MW-4	8/11/2015	< 2.0	< 2.0	46	< 3.0	< 1.0	--	--	3700	5.7	5.6
MW-4	2/3/2016	< 2.0	< 2.0	53	< 3.0	< 1.0*	--	--	3300 *	5.8	5.5
MW-4	4/8/2016	< 2.0	< 2.0	54	< 3.0	< 1.0	--	--	1900	5.8	5.3
MW-4	9/20/2016	< 2.0	< 2.0	15	< 3.0	< 1.0	--	--	2200	5.4	4.3
MW-4	12/28/2016	< 2.0	< 2.0	39	< 3.0	< 1.0	--	--	2300	5.9	5.1
MW-4	3/24/2017	< 2.0	< 2.0	24	< 3.0	< 1.0	--	--	1800	4.8	4.8
MW-4	6/22/2017	< 2.0	< 2.0	22	< 3.0	< 2.0	--	--	1700	5.3	4.9
MW-4	9/29/2017	< 1.0	< 1.0	23.5	< 3.0	< 1.0	--	--	2260	< 10.0	< 10.0
MW-4	11/14/2017	< 1.0 H1	< 1.0 H1	24.3 H1	< 3.0	< 1.0 H1 L1	--	--	2300	< 10.0	< 10.0
MW-4	2/26/2018	< 1.0	< 1.0	12.4	< 3.0	< 1.0	--	--	2240	< 10.0	< 10.0
MW-4	6/12/2018	< 1.0	< 1.0	7.3	< 3.0	< 1.0	--	--	2140	< 10.0	< 10.0
MW-4	8/14/2018	< 3.0	< 2.0*	11	< 3.0	< 2.0*	--	--	2200	5.1	5.0
MW-4	9/11/2018	< 3.0	< 2.0	60	< 3.0	< 2.0	--	--	3600	30	28
MW-4	11/29/2018	< 3.0	< 2.0	43	< 3.0	< 2.0	--	--	2800	10	10
MW-5	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	270	< 2.0	< 2.0
MW-5	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	270	< 2.0	< 2.0
MW-5	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	480	< 2.0	< 2.0
MW-5	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	300	< 4.0	< 4.0
MW-5	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	670	< 4.0	< 4.0
MW-5	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	483	< 10.0	< 10.0
MW-5	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	< 1.0 H1 L1	--	--	418	< 10.0	< 10.0
MW-5	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	320	< 10.0	< 10.0
MW-5	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	318	< 10.0	< 10.0

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	NE
MW-5	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	< 2.0*	--	--	370	< 4.0	< 4.0
MW-5	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-5	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 250	< 4.0	< 4.0
MW-6	8/20/2013	< 0.50	< 0.50	1.9	< 1.0	4.9	< 0.0097	< 0.50	650	< 10	< 10
MW-6	11/13/2013	< 1.0	1.4	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	400	2.1	< 2.0
MW-6	2/19/2014	< 1.0	< 1.0	1.4	< 3.0	1.6	< 0.010	< 1.0	300	< 2.0	< 2.0
MW-6	4/23/2014	< 1.0	< 1.0	1.0	< 3.0	< 1.0	< 0.010	< 1.0	830	3.4	< 2.0
MW-6	8/7/2014	< 1.0	< 1.0	3.0	< 3.0	< 1.0	< 0.010	< 1.0	570	< 2.0	< 2.0
MW-6	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	220	< 2.0	< 2.0
MW-6	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	370	< 2.0	< 2.0
MW-6	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	2.2	--	--	88	< 2.0	< 2.0
MW-6	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0H	--	--	140 *	< 2.0	< 2.0
MW-6	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	230	< 2.0	< 2.0
MW-6	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	1.3	--	--	84	< 2.0	< 2.0
MW-6	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	97	< 2.0	< 2.0
MW-6	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	80	< 4.0	< 4.0
MW-6	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 500	< 4.0	< 4.0
MW-6	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	2.3	--	--	149	< 10.0	< 10.0
MW-6	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	1.1 H1 L1 SS	--	--	190	< 10.0	< 10.0
MW-6	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	< 100	< 10.0	< 10.0
MW-6	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	--	--	133	< 10.0	< 10.0
MW-6	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	< 2.0*	--	--	< 250	< 4.0	< 4.0
MW-6	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	2.7	--	--	< 250	< 4.0	< 4.0
MW-6	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	3.1	--	--	< 250	< 4.0	< 4.0
MW-7	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	2.0	< 0.0096	< 0.50	< 50	< 10	< 10
MW-7	11/13/2013	< 1.0	1.2	< 1.0	< 3.0	2.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.9	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	3.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	1.8	--	--	< 100	< 2.0	< 2.0
MW-7	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	2.8	--	--	< 50	< 2.0	< 2.0
MW-7	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0*	--	--	< 50*	< 2.0	< 2.0
MW-7	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	1.8	--	--	< 50	< 2.0	< 2.0
MW-7	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	3.0	--	--	< 50	< 2.0	< 2.0
MW-7	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 2.0	< 2.0

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	NE
MW-7	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	< 50	< 4.0	< 4.0
MW-7	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	< 2.0	--	--	< 500	< 4.0	< 4.0
MW-7	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	3.9	--	--	< 100	< 10.0	< 10.0
MW-7	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	2.6 H1 L1 SS	--	--	< 100	< 10.0	< 10.0
MW-7	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	1.3	--	--	< 100	< 10.0	< 10.0
MW-7	6/12/2018	< 1.0	< 1.0	< 1.0	< 3.0 RS	2.0	--	--	< 100	< 10.0	< 10.0
MW-7	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	3.6 *	--	--	< 250	< 4.0	< 4.0
MW-7	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	2.6	--	--	< 250	< 4.0	< 4.0
MW-7	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	2.7	--	--	< 250	< 4.0	< 4.0
MW-8	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	2.2	< 0.0097	< 0.50	< 50	< 10	< 10
MW-8	11/13/2013	< 1.0	1.0	< 1.0	< 3.0	2.3	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	1.9	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	1.8	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.7	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	3.0	--	--	< 100	< 2.0	< 2.0
MW-8	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	4.6	--	--	200	< 2.0	< 2.0
MW-8	2/3/2016	< 2.0	< 2.0	< 3.0	< 3.0	9.5 *	--	--	< 50*	< 2.0	< 2.0
MW-8	4/8/2016	< 2.0	< 2.0	< 3.0	< 3.0	4.5	--	--	< 50	< 2.0	< 2.0
MW-8	9/20/2016	< 2.0	< 2.0	< 3.0	< 3.0	8.6	--	--	< 50	< 2.0	< 2.0
MW-8	12/28/2016	< 2.0	< 2.0	< 3.0	< 3.0	1.2	--	--	< 50	< 2.0	< 2.0
MW-8	3/24/2017	< 2.0	< 2.0	< 3.0	< 3.0	4.2	--	--	< 50	< 4.0	< 4.0
MW-8	6/22/2017	< 2.0	< 2.0	< 3.0	< 3.0	6.3	--	--	< 500	< 4.0	< 4.0
MW-8	9/29/2017	< 1.0	< 1.0	< 1.0	< 3.0	8.2	--	--	< 100	< 10.0	< 10.0
MW-8	11/14/2017	< 1.0 H1	< 1.0 H1	< 1.0 H1	< 3.0	6.6 H1 L1 SS	--	--	< 100	< 10.0	< 10.0
MW-8	2/26/2018	< 1.0	< 1.0	< 1.0	< 3.0	3.5	--	--	< 100	< 10.0	< 10.0
MW-8	6/12/2018	< 1.0	< 1.0 M1	< 1.0 M1	< 3.0	4.6	--	--	< 100	< 10.0	< 10.0
MW-8	8/14/2018	< 3.0	< 2.0*	< 3.0	< 3.0	8.1 *	--	--	< 250	< 4.0	< 4.0
MW-8	9/11/2018	< 3.0	< 2.0	< 3.0	< 3.0	6.3	--	--	< 250	< 4.0	< 4.0
MW-8	11/29/2018	< 3.0	< 2.0	< 3.0	< 3.0	9.9	--	--	< 250	< 4.0	< 4.0

Table 2
Groundwater Analytical Data
ARCO Facility 5300
710 15th Avenue
Longview, WA

CONSTITUENT	B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS	5	1000	700	1000	20	0.01	5	1000/800¹	15	NE

Notes:

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes, Total

MTBE = Methyl-tertiary-butyl ether

EDB = 1,2-Dibromo-ethane

EDC = 1,2-Dichloro-ethane

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

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx

TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx

1,000/800¹ ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L

NE = Not evaluated

<1.0 = Concentrations were not detected above the laboratory method reporting limit.

ug/L = Micrograms per liter (ppb)

ND = Not detected

-- = No value given/Not analyzed/Not applicable

MTCA = Model Toxics Control Act

Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels

* = LCS or LCSD is outside acceptance limits

L1 = Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

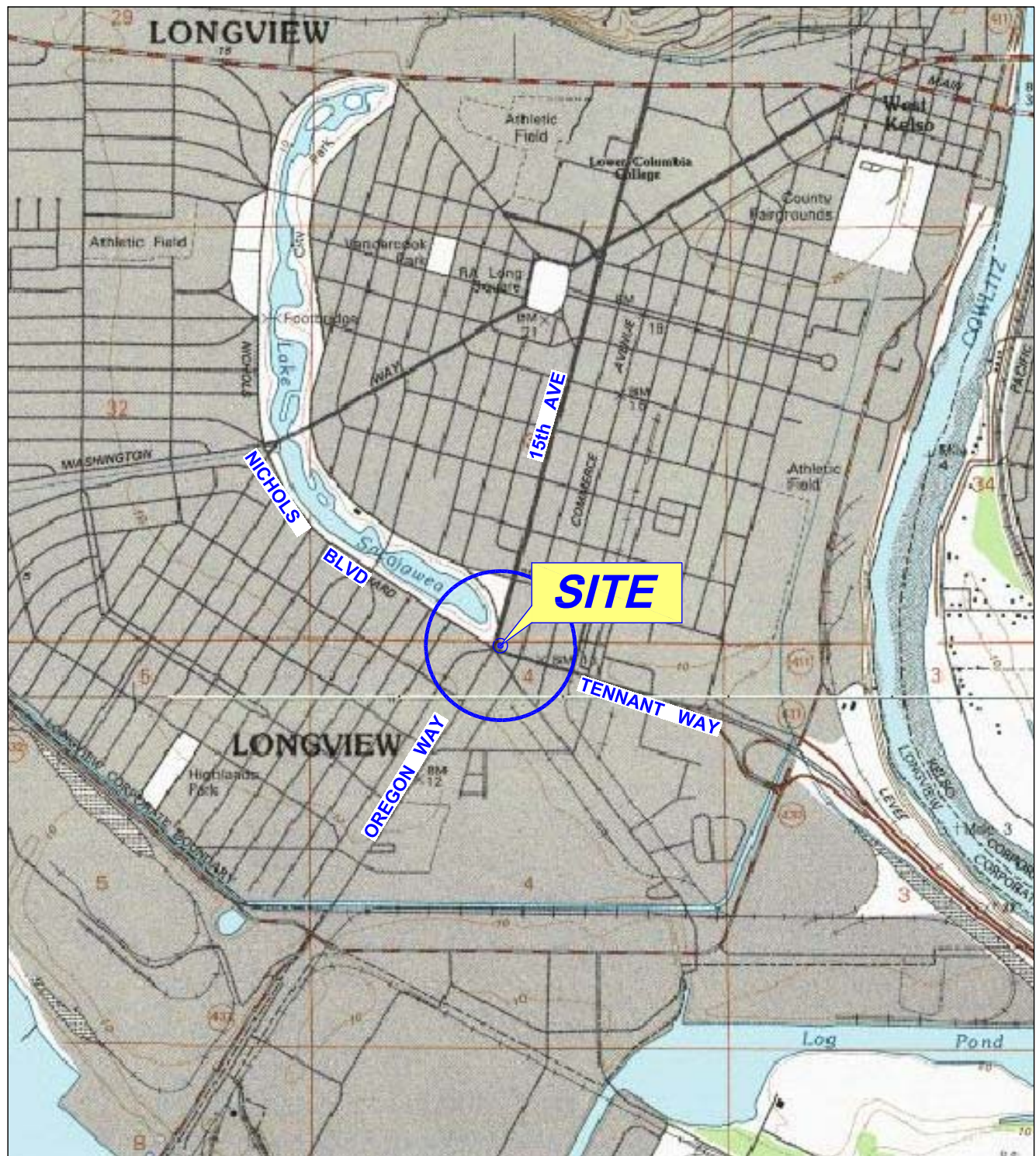
H1 = Analysis conducted outside the recognized method holding time.

SS = This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

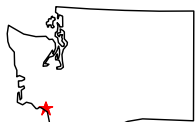
M1 = Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Figures

- | | |
|----------|---|
| Figure 1 | Site Location Map |
| Figure 2 | Site Aerial Map |
| Figure 3 | Groundwater Analytical and Elevation Contour Map - 8/14/2018 |
| Figure 4 | Groundwater Analytical and Elevation Contour Map - 9/11/2018 |
| Figure 5 | Groundwater Analytical and Elevation Contour Map - 11/29/2018 |



GENERAL NOTES:
 BASE MAP FROM TERRAIN NAVIGATOR PRO
 KELSO, WA. QUADRANGLE
 7.5 MINUTE TOPOGRAPHIC MAP
 1990



QUADRANGLE LOCATION

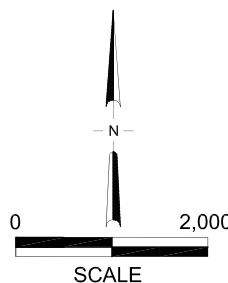
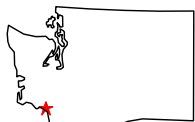


FIGURE 1
 SITE LOCATION MAP

ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WA.

PROJECT NO. 05300SA181	DRAWN BY KM
FILE NO. 5300-SLM	PREPARED BY FS
REVISION NO. 1	REVIEWED BY MR





QUADRANGLE LOCATION

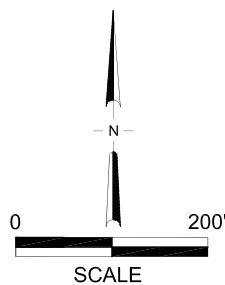
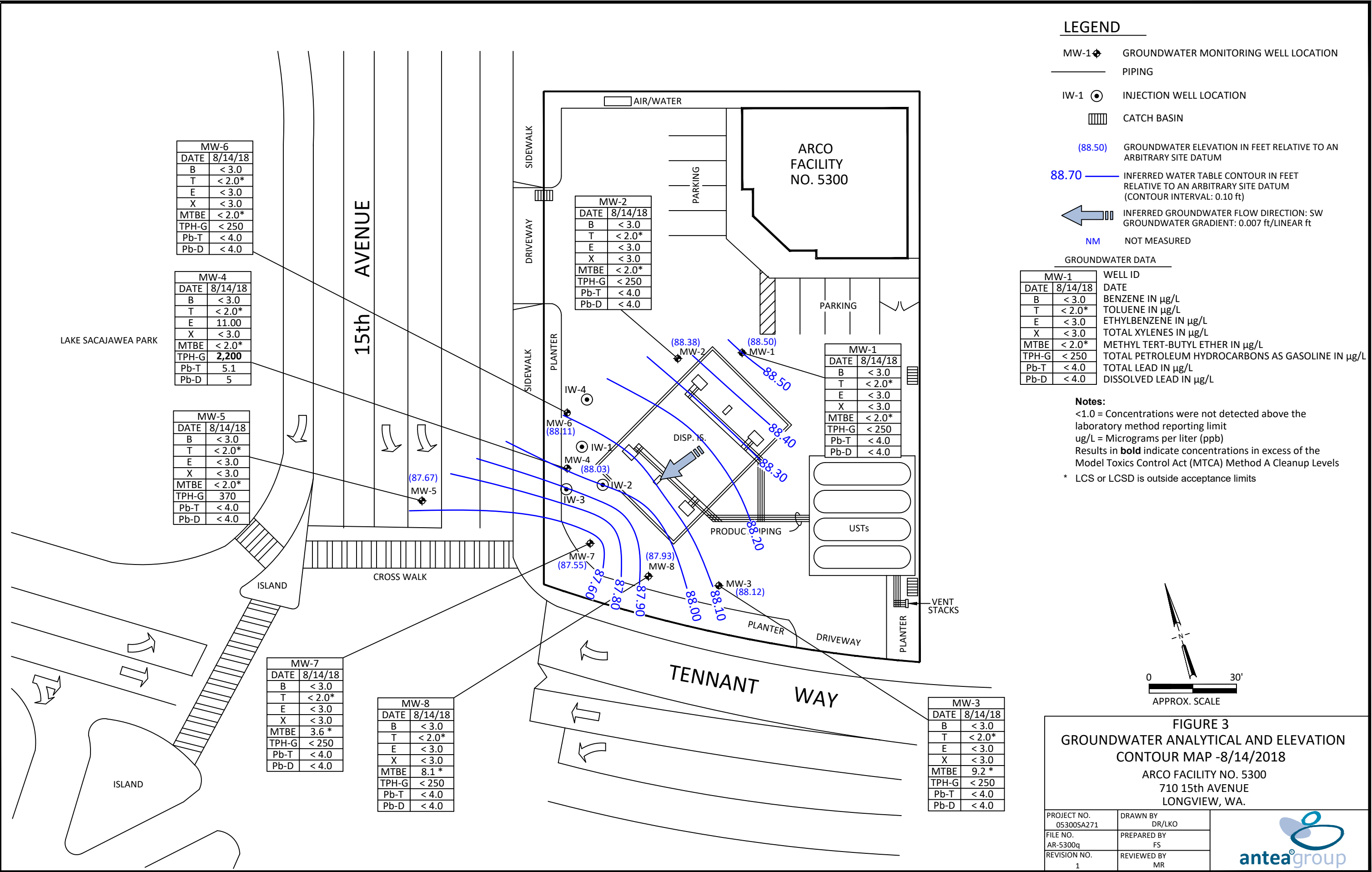


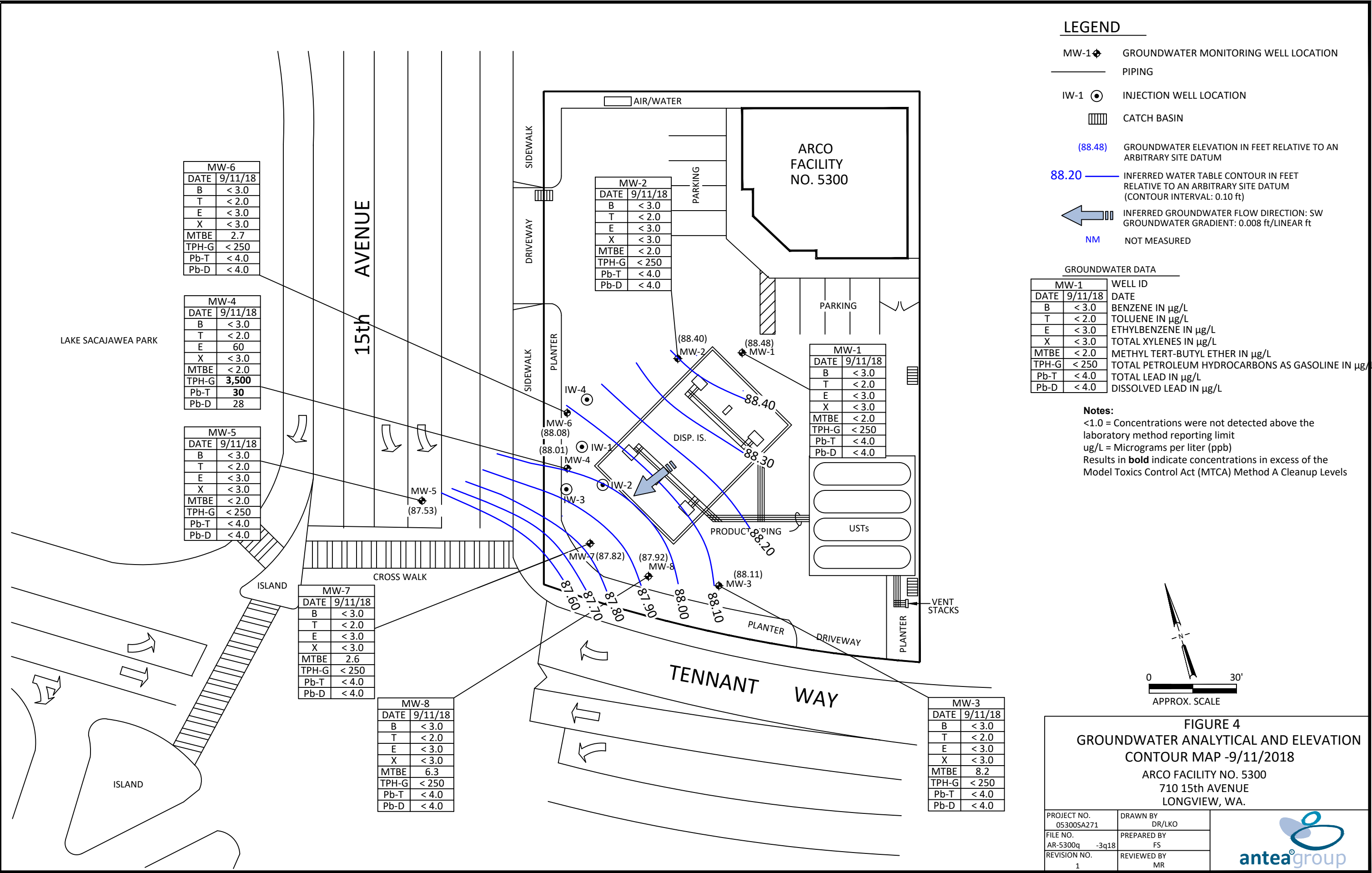
FIGURE 2 SITE AERIAL MAP

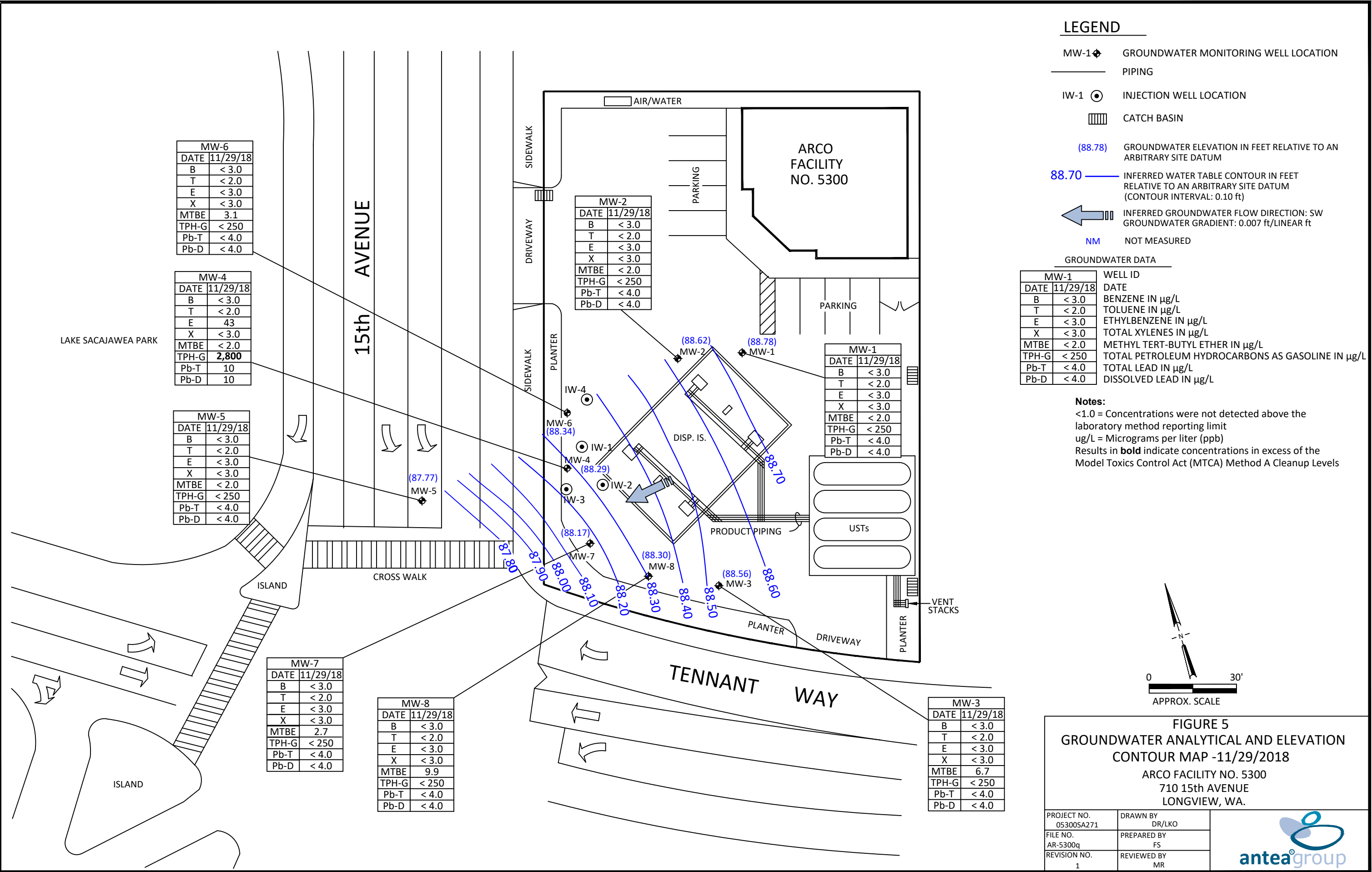
ARCO FACILITY NO. 5300
710 15th AVENUE
LONGVIEW, WA.

PROJECT NO. 05300SA181	DRAWN BY KM
FILE NO. 5300-Sam	PREPARED BY FS
REVISION NO. 1	REVIEWED BY MR









Appendix A

Analytical Lab Reports and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

Tel: (253)922-2310

TestAmerica Job ID: 580-79600-1

Client Project/Site: BP - ARCO 5300

For:

Antea USA, Inc.

4006 148th Ave NE

Redmond, Washington 98052

Attn: Mackie Stock

Kristine D. Allen

Authorized for release by:

8/29/2018 3:23:57 PM

Kristine Allen, Manager of Project Management

(253)248-4970

kristine.allen@testamericainc.com

Designee for

Elaine Walker, Project Manager II

(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The signature on the cover page extends to the case narrative and all the data and forms in the package. The Chain of Custody is included and is an integral part of this report.

A handwritten signature in black ink that reads "Kristine D. Allen". The signature is written in a cursive style and is positioned above a horizontal blue line.

Kristine Allen
Manager of Project Management
8/29/2018 3:23:57 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions	5
Client Sample Results	6
QC Sample Results	15
Chronicle	19
Certification Summary	22
Sample Summary	23
Chain of Custody	24
Receipt Checklists	26



Case Narrative

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Job ID: 580-79600-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-79600-1

Comments

No additional comments.

Receipt

The samples were received on 8/15/2018 10:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.1° C.

GC/MS VOA

Method(s) 8260B: The surrogate recovery for the blank and LCS associated with analytical batch 580-281820 was outside the upper control limits.

Method(s) 8260B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch analytical batch 580-281820 recovered outside control limits for the following analytes: Toluene and Methyl tert-butyl ether. The individual recoveries of both the LCS and LCSD met the acceptance criteria.

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-4 (580-79600-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: TFT surrogate drift is high but recovers within recovery limits. All samples are within limits and have been reported. (CCV 580-282616/19) and (CCVRT 580-282616/5)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-1

Date Collected: 08/14/18 08:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 14:18	1
Toluene	ND	*	2.0		ug/L			08/17/18 14:18	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 14:18	1
Methyl tert-butyl ether	ND	*	2.0		ug/L			08/17/18 14:18	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		80 - 126		08/17/18 14:18	1
4-Bromofluorobenzene (Surr)	101		80 - 125		08/17/18 14:18	1
Toluene-d8 (Surr)	101		80 - 122		08/17/18 14:18	1
Trifluorotoluene (Surr)	94		80 - 120		08/17/18 14:18	1
Dibromofluoromethane (Surr)	95		77 - 120		08/17/18 14:18	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 14:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		50 - 150		08/28/18 14:42	1
Trifluorotoluene (Surr)	114		50 - 150		08/28/18 14:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:26	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:16	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-2
Date Collected: 08/14/18 08:25
Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 14:42	1
Toluene	ND	*	2.0		ug/L			08/17/18 14:42	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 14:42	1
Methyl tert-butyl ether	ND	*	2.0		ug/L			08/17/18 14:42	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 14:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 126		08/17/18 14:42	1
4-Bromofluorobenzene (Surr)	101		80 - 125		08/17/18 14:42	1
Toluene-d8 (Surr)	103		80 - 122		08/17/18 14:42	1
Trifluorotoluene (Surr)	104		80 - 120		08/17/18 14:42	1
Dibromofluoromethane (Surr)	105		77 - 120		08/17/18 14:42	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 15:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		50 - 150		08/28/18 15:12	1
Trifluorotoluene (Surr)	114		50 - 150		08/28/18 15:12	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 11:48	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 13:44	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-3

Date Collected: 08/14/18 11:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 15:07	1
Toluene	ND	*	2.0		ug/L			08/17/18 15:07	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 15:07	1
Methyl tert-butyl ether	9.2	*	2.0		ug/L			08/17/18 15:07	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 15:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		08/17/18 15:07	1
4-Bromofluorobenzene (Surr)	102		80 - 125		08/17/18 15:07	1
Toluene-d8 (Surr)	100		80 - 122		08/17/18 15:07	1
Trifluorotoluene (Surr)	102		80 - 120		08/17/18 15:07	1
Dibromofluoromethane (Surr)	105		77 - 120		08/17/18 15:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 16:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		50 - 150		08/28/18 16:13	1
Trifluorotoluene (Surr)	114		50 - 150		08/28/18 16:13	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:30	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:20	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-4

Date Collected: 08/14/18 09:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 15:31	1
Toluene	ND	*	2.0		ug/L			08/17/18 15:31	1
Ethylbenzene	11		3.0		ug/L			08/17/18 15:31	1
Methyl tert-butyl ether	ND	*	2.0		ug/L			08/17/18 15:31	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 15:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 126		08/17/18 15:31	1
4-Bromofluorobenzene (Surr)	97		80 - 125		08/17/18 15:31	1
Toluene-d8 (Surr)	106		80 - 122		08/17/18 15:31	1
Trifluorotoluene (Surr)	105		80 - 120		08/17/18 15:31	1
Dibromofluoromethane (Surr)	104		77 - 120		08/17/18 15:31	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		250		ug/L			08/28/18 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	197	X	50 - 150		08/28/18 16:43	1
Trifluorotoluene (Surr)	114		50 - 150		08/28/18 16:43	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0051		0.0040		mg/L		08/17/18 16:03	08/20/18 12:34	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0050		0.0040		mg/L		08/21/18 11:15	08/22/18 14:23	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-5

Date Collected: 08/14/18 12:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 15:55	1
Toluene	ND	*	2.0		ug/L			08/17/18 15:55	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 15:55	1
Methyl tert-butyl ether	ND	*	2.0		ug/L			08/17/18 15:55	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		08/17/18 15:55	1
4-Bromofluorobenzene (Surr)	105		80 - 125		08/17/18 15:55	1
Toluene-d8 (Surr)	105		80 - 122		08/17/18 15:55	1
Trifluorotoluene (Surr)	103		80 - 120		08/17/18 15:55	1
Dibromofluoromethane (Surr)	106		77 - 120		08/17/18 15:55	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	370		250		ug/L			08/28/18 17:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		50 - 150		08/28/18 17:14	1
Trifluorotoluene (Surr)	113		50 - 150		08/28/18 17:14	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:38	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:27	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-6

Date Collected: 08/14/18 09:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 16:20	1
Toluene	ND	*	2.0		ug/L			08/17/18 16:20	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 16:20	1
Methyl tert-butyl ether	ND	*	2.0		ug/L			08/17/18 16:20	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 16:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		08/17/18 16:20	1
4-Bromofluorobenzene (Surr)	100		80 - 125		08/17/18 16:20	1
Toluene-d8 (Surr)	104		80 - 122		08/17/18 16:20	1
Trifluorotoluene (Surr)	102		80 - 120		08/17/18 16:20	1
Dibromofluoromethane (Surr)	102		77 - 120		08/17/18 16:20	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 17:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		50 - 150		08/28/18 17:44	1
Trifluorotoluene (Surr)	113		50 - 150		08/28/18 17:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:43	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:31	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-7

Date Collected: 08/14/18 09:50

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 16:45	1
Toluene	ND	*	2.0		ug/L			08/17/18 16:45	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 16:45	1
Methyl tert-butyl ether	3.6	*	2.0		ug/L			08/17/18 16:45	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 16:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		08/17/18 16:45	1
4-Bromofluorobenzene (Surr)	100		80 - 125		08/17/18 16:45	1
Toluene-d8 (Surr)	106		80 - 122		08/17/18 16:45	1
Trifluorotoluene (Surr)	102		80 - 120		08/17/18 16:45	1
Dibromofluoromethane (Surr)	107		77 - 120		08/17/18 16:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 18:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		50 - 150					08/28/18 18:14	1
Trifluorotoluene (Surr)	112		50 - 150					08/28/18 18:14	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:47	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:34	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-8

Date Collected: 08/14/18 10:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 17:09	1
Toluene	ND	*	2.0		ug/L			08/17/18 17:09	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 17:09	1
Methyl tert-butyl ether	8.1	*	2.0		ug/L			08/17/18 17:09	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 17:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		08/17/18 17:09	1
4-Bromofluorobenzene (Surr)	98		80 - 125		08/17/18 17:09	1
Toluene-d8 (Surr)	100		80 - 122		08/17/18 17:09	1
Trifluorotoluene (Surr)	103		80 - 120		08/17/18 17:09	1
Dibromofluoromethane (Surr)	105		77 - 120		08/17/18 17:09	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 18:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150					08/28/18 18:44	1
Trifluorotoluene (Surr)	110		50 - 150					08/28/18 18:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 12:51	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 14:38	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: TB

Date Collected: 08/14/18 00:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 13:05	1
Toluene	ND	*	2.0		ug/L			08/17/18 13:05	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 13:05	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 13:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	85		80 - 122		08/17/18 13:05	1
Trifluorotoluene (Surr)	106		80 - 120		08/17/18 13:05	1
4-Bromofluorobenzene (Surr)	102		80 - 125		08/17/18 13:05	1
Dibromofluoromethane (Surr)	112		77 - 120		08/17/18 13:05	1
1,2-Dichloroethane-d4 (Surr)	118		80 - 126		08/17/18 13:05	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		50 - 150		08/28/18 14:11	1
Trifluorotoluene (Surr)	114		50 - 150		08/28/18 14:11	1

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-281820/5

Matrix: Water

Analysis Batch: 281820

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			08/17/18 11:51	1
Toluene	ND		2.0		ug/L			08/17/18 11:51	1
Ethylbenzene	ND		3.0		ug/L			08/17/18 11:51	1
Methyl tert-butyl ether	ND		2.0		ug/L			08/17/18 11:51	1
Xylenes, Total	ND		3.0		ug/L			08/17/18 11:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		80 - 125		08/17/18 11:51	1
Toluene-d8 (Surr)	110		80 - 122		08/17/18 11:51	1
1,2-Dichloroethane-d4 (Surr)	122		80 - 126		08/17/18 11:51	1
Trifluorotoluene (Surr)	107		80 - 120		08/17/18 11:51	1
Dibromofluoromethane (Surr)	123	X	77 - 120		08/17/18 11:51	1

Lab Sample ID: LCS 580-281820/6

Matrix: Water

Analysis Batch: 281820

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.4		ug/L		104	75 - 128
Toluene	10.0	10.5		ug/L		105	75 - 120
Ethylbenzene	10.0	10.3		ug/L		103	75 - 120
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	75 - 120
Methyl tert-butyl ether	10.0	12.8		ug/L		128	72 - 130
o-Xylene	10.0	10.5		ug/L		105	74 - 120
Xylenes, Total	20.0	21.1		ug/L		106	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 125
Toluene-d8 (Surr)	97		80 - 122
1,2-Dichloroethane-d4 (Surr)	121		80 - 126
Trifluorotoluene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	123	X	77 - 120

Lab Sample ID: LCSD 580-281820/7

Matrix: Water

Analysis Batch: 281820

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	9.12		ug/L		91	75 - 128	13	14
Toluene	10.0	7.53	*	ug/L		75	75 - 120	33	13
Ethylbenzene	10.0	9.23		ug/L		92	75 - 120	11	14
m-Xylene & p-Xylene	10.0	9.40		ug/L		94	75 - 120	12	14
Methyl tert-butyl ether	10.0	10.4	*	ug/L		104	72 - 130	21	18
o-Xylene	10.0	9.25		ug/L		92	74 - 120	13	16
Xylenes, Total	20.0	18.7		ug/L		93	74 - 120	12	15

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-281820/7

Matrix: Water

Analysis Batch: 281820

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 125
Toluene-d8 (Surr)	81		80 - 122
1,2-Dichloroethane-d4 (Surr)	110		80 - 126
Trifluorotoluene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	110		77 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-282616/6

Matrix: Water

Analysis Batch: 282616

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			08/28/18 12:40	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		50 - 150					08/28/18 12:40	1
Trifluorotoluene (Surr)	67		50 - 150					08/28/18 12:40	1

Lab Sample ID: LCS 580-282616/7

Matrix: Water

Analysis Batch: 282616

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	947		ug/L		95	79 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	113		50 - 150				
Trifluorotoluene (Surr)	115		50 - 150				

Lab Sample ID: LCSD 580-282616/8

Matrix: Water

Analysis Batch: 282616

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	902		ug/L		90	79 - 120	5	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	111		50 - 150						
Trifluorotoluene (Surr)	110		50 - 150						

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-281888/18-A

Matrix: Water

Analysis Batch: 282040

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/17/18 16:03	08/20/18 11:31	5

Lab Sample ID: LCS 580-281888/19-A

Matrix: Water

Analysis Batch: 282040

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.893		mg/L		89	80 - 120

Lab Sample ID: LCSD 580-281888/20-A

Matrix: Water

Analysis Batch: 282040

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	0.883		mg/L		88	80 - 120	1	20

Lab Sample ID: 580-79600-2 MS

Matrix: Water

Analysis Batch: 282040

Client Sample ID: MW-2

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.912		mg/L		91	80 - 120

Lab Sample ID: 580-79600-2 MSD

Matrix: Water

Analysis Batch: 282040

Client Sample ID: MW-2

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1.00	0.903		mg/L		90	80 - 120	1	20

Lab Sample ID: 580-79600-2 DU

Matrix: Water

Analysis Batch: 282040

Client Sample ID: MW-2

Prep Type: Total Recoverable

Prep Batch: 281888

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

Lab Sample ID: LCS 580-282072/13-A

Matrix: Water

Analysis Batch: 282241

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 282072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.965		mg/L		96	80 - 120

Lab Sample ID: LCSD 580-282072/14-A

Matrix: Water

Analysis Batch: 282241

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 282072

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	0.984		mg/L		98	80 - 120	2	20

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Lab Sample ID: MB 580-282032/9-B
Matrix: Water
Analysis Batch: 282241

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 282072

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		08/21/18 11:15	08/22/18 13:33	5

Lab Sample ID: 580-79600-2 MS
Matrix: Water
Analysis Batch: 282241

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 282072

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.987		mg/L		99	80 - 120

Lab Sample ID: 580-79600-2 MSD
Matrix: Water
Analysis Batch: 282241

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 282072

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1.00	1.05		mg/L		105	80 - 120	6	20

Lab Sample ID: 580-79600-2 DU
Matrix: Water
Analysis Batch: 282241

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 282072

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/L		NC	20

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-1

Date Collected: 08/14/18 08:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 14:18	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 14:42	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:16	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:26	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 08/14/18 08:25

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 14:42	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 15:12	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 13:44	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 11:48	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 08/14/18 11:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 15:07	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 16:13	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:20	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:30	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 08/14/18 09:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 15:31	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 16:43	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-4

Date Collected: 08/14/18 09:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:23	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:34	FCW	TAL SEA

Client Sample ID: MW-5

Date Collected: 08/14/18 12:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 15:55	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 17:14	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:27	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:38	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 08/14/18 09:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 16:20	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 17:44	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:45	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:31	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:43	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 08/14/18 09:50

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 16:45	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 18:14	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:46	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:34	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:47	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Client Sample ID: MW-8

Date Collected: 08/14/18 10:30

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 17:09	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 18:44	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			282032	08/20/18 16:46	JKM	TAL SEA
Dissolved	Prep	3005A			282072	08/21/18 11:15	T1H	TAL SEA
Dissolved	Analysis	6020A		5	282241	08/22/18 14:38	FCW	TAL SEA
Total Recoverable	Prep	3005A			281888	08/17/18 16:03	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	282040	08/20/18 12:51	FCW	TAL SEA

Client Sample ID: TB

Date Collected: 08/14/18 00:00

Date Received: 08/15/18 10:35

Lab Sample ID: 580-79600-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	281820	08/17/18 13:05	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	282616	08/28/18 14:11	JSM	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Lead
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Methyl tert-butyl ether
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Sample Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-79600-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-79600-1	MW-1	Water	08/14/18 08:30	08/15/18 10:35
580-79600-2	MW-2	Water	08/14/18 08:25	08/15/18 10:35
580-79600-3	MW-3	Water	08/14/18 11:00	08/15/18 10:35
580-79600-4	MW-4	Water	08/14/18 09:30	08/15/18 10:35
580-79600-5	MW-5	Water	08/14/18 12:30	08/15/18 10:35
580-79600-6	MW-6	Water	08/14/18 09:00	08/15/18 10:35
580-79600-7	MW-7	Water	08/14/18 09:50	08/15/18 10:35
580-79600-8	MW-8	Water	08/14/18 10:30	08/15/18 10:35
580-79600-9	TB	Water	08/14/18 00:00	08/15/18 10:35

Lab Name: Test America	BP/ARC Facility Address: 710 15th Street	Consultant/Contractor: Antea Group						
Lab Address: 5755 8th street east, Tacoma WA	City, State, ZIP Code: Longview, WA	Consultant/Contractor Project No: 05300						
Lab PM: Elaine Walker	Lead Regulatory Agency: Washington State Department of Ecology	Address: 4006 148th Ave NE, Redmond, WA 98052						
Lab Phone:	California Global ID No.: NA	Consultant/Contractor PM: Megan Richard						
Lab Shipping Accont:	Enfos Proposal No: 009VY-0007 WR321180	Phone: 425-498-7711						
Lab Bottle Order No:	Accounting Mode: Provision ☒ OOC-BU ☐ OOC-RM ☐	Email EDD To: megan.richard@anteagroup.com						
Other Info:	Stage: Activity:	Invoice To: BP/ARC ☐ Contractor ☐						
BP/ARC EBM: Chuck Carmel	No. C	Report Type & QC Level						
EBM Phone: (657) 529-4503	Matrix	Standard ☒ w/Access						
EBM Email: charles.carmel@bp.com	No. of Containers	Full Data Package ☐						
Lab No.	Sample Description	Date	Time	Comments				
MW-1		8/14/18	0830					
MW-2		↑	0845					
MW-3			1100					
MW-4			930					
MW-5			1230					
MW-6			900					
MW-7			950					
MW-8		8/14/18	1030					
TB		-	-					
Sampler's Name: Nolan Lewis		Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Antea Group		Nolan Lewis / A.G.		8/15/18 1035	8/15/18 1035	2000	APR	8/15/18 1035
Shipment Method:		Ship Date:						
Shipment Tracking No:								
Special Instructions:								
THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No								
Temp Blank: Yes / No								
Cooler Temp on Receipt: 4.1 °F/C								
Trip Blank: Yes / No								
MS/MSD Sample Submitted: Yes / No								



Laboratory Management Program LaMP Chain of Custody Record

Page 1 of 1

BP/ARC Project Name: Former ARCO 5300

Req Due Date (mm/dd/yy): Standart TAT

Rush TAT: Yes No

BP/ARC Facility No: Former ARCO Facility No. 5300

Lab Work Order Number:

Lab Name: Test America				BP/ARC Facility Address: 710 15th Street				Consultant/Contractor: Antea Group															
Lab Address: 5755 8th street east, Tacoma WA				City, State, ZIP Code: Longview, WA				Consultant/Contractor Project No: 05300															
Lab PM: Elaine Walker				Lead Regulatory Agency: Washington State Department of Ecology				Address: 4006 148th Ave NE, Redmond, WA 98052															
Lab Phone:				California Global ID No: NA				Consultant/Contractor PM: Megan Richard															
Lab Shipping Acct:				Enfos Proposal No: 009V4-0007 WR321180				Phone: 425-498-7711															
Lab Bottle Order No:				Accounting Mode: Provision ☒ OOC-BU ☐ OOC-RM ☐				Email EDD To: megan.richard@anteagroup.com															
Other Info:				Stage: Activity:				Invoice To: BP/ARC ☒ Contractor ☐															
BP/ARC EBM: Chuck Carmel				Matrix		No. C:		ted Analyses				Report Type & QC Level											
EBM Phone: (657) 529-4503												Standard ☒ w/Access											
EBM Email: charles.carmel@bp.com								580-79600 Chain of Custody				Full Data Package ☐											
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ SO ₃	BTEX	MTBE	NWTPH-Gx	NWTPH-Dx	NWTPH-LO	Pb-T by EPA 6010	Pb-D by EPA 6010	EDB by EPA 8011	EDC by EPA 8260B	Comments	
	MW-1	8/14/18	0830	x			8						x	x	x			x	x				
	MW-2		0825	x			8						x	x	x			x	x				
	MW-3		1100	x			8						x	x	x			x	x				
	MW-4		930	x			8						x	x	x			x	x				
	MW-5		1230	x			8						x	x	x			x	x				
	MW-6		900	x			8						x	x	x			x	x				
	MW-7		950	x			8						x	x	x			x	x				
	MW-8	8/14/18	1030	x			8						x	x	x			x	x				
	TB			x			6						x		x								
Sampler's Name: Nolan Lewis				Relinquished By / Affiliation				Date	Time	Accepted By / Affiliation				Date	Time								
Sampler's Company: Antea Group				Nolan Lewis / A.G.				8/15/18	1035	TAPOR				8/15/18	1035								
Shipment Method: Ship Date:				B. Magan TAPOR				8/15/18	1700	B. Magan SRH TR				8/16/18	0930								
Shipment Tracking No:																							
Special Instructions:																							
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: 4.1 °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No																							

DR5 = 0.7/0.7 w/c.s.

BP/ARC LaMP COC Rev. 6 01/01/2009

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-79600-1

Login Number: 79600

List Source: TestAmerica Seattle

List Number: 1

Creator: O'Connell, Jason I

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

Tel: (253)922-2310

TestAmerica Job ID: 580-80278-1

Client Project/Site: BP - ARCO 5300

Revision: 1

For:

Antea USA, Inc.

4006 148th Ave NE

Redmond, Washington 98052

Attn: Mackie Stock

M. Elaine Walker

Authorized for release by:

2/1/2019 2:01:04 PM

Elaine Walker, Project Manager II

(253)248-4972

elaine.walker@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1
2
3
4
5
6
7
8
9
10
11

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The signature on the cover page extends to the case narrative and all the data and forms in the package. The Chain of Custody is included and is an integral part of this report.



Elaine Walker
Project Manager II
2/1/2019 2:01:04 PM

Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions	5
Client Sample Results	6
QC Sample Results	15
Chronicle	20
Certification Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	26



Case Narrative

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Job ID: 580-80278-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-80278-1

Revision 1: February 1, 2019

During a recent internal data review, TestAmerica Seattle discovered that a dual detector instrument configured with a Photoionization Detector (PID) and a Flame Ionization Detector (FID) was using the incorrect detector for quantitation of TPH by Method NWTPH-Gx. The data for sample MW-4 (580-80278-4) has changed. Results for the remaining samples stayed the same. Surrogate recoveries are slightly different for most samples, but still within control limits. The PID is typically used for analysis of aromatic compounds, such as BTEX, while the FID is a non-selective detector used for analysis of gasoline range petroleum hydrocarbon compounds. The PID detects many of the components of gasoline, but is more selective. The instrument was collecting data from both detectors, but due to a software configuration issue, the data from the PID detector was being displayed as the primary detector, and it was not clearly indicated on the reported data which detector was being used for quantitation. All QC passed on the PID, however reevaluation of the data on the FID indicated a potential low bias based on low percent difference (%D) of the initial calibration verification (ICV). Please see attached letter which contains details. Please also note the change in **BOLD** type below..

Receipt

The samples were received on 9/12/2018 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

GC/MS VOA

Method(s) NWTPH-Gx: The %D of the analyte Gasoline for ICV associated with batch 580-291670 was outside the lower control limits at -22.7%, limit 20%. The %D of surrogate 4-Bromofluorobenzene (Surr) for ICV associated with batch 580-291670 was outside the upper control limits at 33.7%, limit 20%. MW-1 (580-80278-1), MW-2 (580-80278-2), MW-3 (580-80278-3), MW-4 (580-80278-4), (LCS 580-291699/7), (LCSD 580-291699/8), (MB 580-291699/6), MW-5 (580-80278-5), MW-6 (580-80278-6), MW-7 (580-80278-7), MW-8 (580-80278-8), (LCS 580-291693/6), (LCSD 580-291693/7) and (MB 580-291693/5).

Method(s) NWTPH-Gx: Continuing calibration verification (CCV) standard associated with batch 580-291693 recovered outside %Drift acceptance criteria for Trifluorotoluene (Surr). The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. (CCV 580-291693/15) and (CCVRT 580-291693/4)

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-4 (580-80278-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) NWTPH-Gx: The continuing calibration verification (CCV) standard associated with batch 580-291699 recovered outside %Drift acceptance criteria for Trifluorotoluene surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. (CCVRT 580-291699/5)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-1
Date Collected: 09/11/18 09:10
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 03:17	1
Toluene	ND		2.0		ug/L			09/24/18 03:17	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 03:17	1
Methyl tert-butyl ether	ND		2.0		ug/L			09/24/18 03:17	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 03:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 126		09/24/18 03:17	1
4-Bromofluorobenzene (Surr)	106		80 - 125		09/24/18 03:17	1
Toluene-d8 (Surr)	100		80 - 122		09/24/18 03:17	1
Trifluorotoluene (Surr)	97		80 - 120		09/24/18 03:17	1
Dibromofluoromethane (Surr)	99		77 - 120		09/24/18 03:17	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/23/18 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		09/23/18 14:11	1
Trifluorotoluene (Surr)	120		50 - 150		09/23/18 14:11	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 15:13	5
Iron	4.6		1.0		mg/L		09/20/18 08:55	09/20/18 15:13	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:04	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-2
Date Collected: 09/11/18 09:50
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 03:43	1
Toluene	ND		2.0		ug/L			09/24/18 03:43	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 03:43	1
Methyl tert-butyl ether	ND		2.0		ug/L			09/24/18 03:43	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 03:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		80 - 126		09/24/18 03:43	1
4-Bromofluorobenzene (Surr)	104		80 - 125		09/24/18 03:43	1
Toluene-d8 (Surr)	100		80 - 122		09/24/18 03:43	1
Trifluorotoluene (Surr)	98		80 - 120		09/24/18 03:43	1
Dibromofluoromethane (Surr)	95		77 - 120		09/24/18 03:43	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/23/18 14:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150		09/23/18 14:42	1
Trifluorotoluene (Surr)	126		50 - 150		09/23/18 14:42	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 15:51	5
Iron	7.0		1.0		mg/L		09/20/18 08:55	09/20/18 15:51	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:36	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-3
Date Collected: 09/11/18 13:10
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 04:10	1
Toluene	ND		2.0		ug/L			09/24/18 04:10	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 04:10	1
Methyl tert-butyl ether	8.2		2.0		ug/L			09/24/18 04:10	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 04:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 126		09/24/18 04:10	1
4-Bromofluorobenzene (Surr)	104		80 - 125		09/24/18 04:10	1
Toluene-d8 (Surr)	99		80 - 122		09/24/18 04:10	1
Trifluorotoluene (Surr)	99		80 - 120		09/24/18 04:10	1
Dibromofluoromethane (Surr)	96		77 - 120		09/24/18 04:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/23/18 15:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150					09/23/18 15:13	1
Trifluorotoluene (Surr)	120		50 - 150					09/23/18 15:13	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 15:55	5
Iron	49		1.0		mg/L		09/20/18 08:55	09/20/18 15:55	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:40	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-4
Date Collected: 09/11/18 11:10
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 04:36	1
Toluene	ND		2.0		ug/L			09/24/18 04:36	1
Ethylbenzene	60		3.0		ug/L			09/24/18 04:36	1
Methyl tert-butyl ether	ND		2.0		ug/L			09/24/18 04:36	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 04:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		80 - 126		09/24/18 04:36	1
4-Bromofluorobenzene (Surr)	104		80 - 125		09/24/18 04:36	1
Toluene-d8 (Surr)	102		80 - 122		09/24/18 04:36	1
Trifluorotoluene (Surr)	97		80 - 120		09/24/18 04:36	1
Dibromofluoromethane (Surr)	95		77 - 120		09/24/18 04:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3600		250		ug/L			09/23/18 15:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	247	X	50 - 150		09/23/18 15:43	1
Trifluorotoluene (Surr)	129		50 - 150		09/23/18 15:43	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.030		0.0040		mg/L		09/20/18 08:55	09/20/18 15:59	5
Iron	14		1.0		mg/L		09/20/18 08:55	09/20/18 15:59	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.028		0.0040		mg/L		09/14/18 08:31	09/19/18 18:43	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-5
Date Collected: 09/11/18 08:40
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 05:02	1
Toluene	ND		2.0		ug/L			09/24/18 05:02	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 05:02	1
Methyl tert-butyl ether	ND		2.0		ug/L			09/24/18 05:02	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 05:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		80 - 126		09/24/18 05:02	1
4-Bromofluorobenzene (Surr)	103		80 - 125		09/24/18 05:02	1
Toluene-d8 (Surr)	101		80 - 122		09/24/18 05:02	1
Trifluorotoluene (Surr)	96		80 - 120		09/24/18 05:02	1
Dibromofluoromethane (Surr)	93		77 - 120		09/24/18 05:02	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/19/18 17:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		50 - 150		09/19/18 17:11	1
Trifluorotoluene (Surr)	115		50 - 150		09/19/18 17:11	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 16:04	5
Iron	63		1.0		mg/L		09/20/18 08:55	09/20/18 16:04	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:47	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-6
Date Collected: 09/11/18 10:30
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 05:29	1
Toluene	ND		2.0		ug/L			09/24/18 05:29	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 05:29	1
Methyl tert-butyl ether	2.7		2.0		ug/L			09/24/18 05:29	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 05:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		80 - 126		09/24/18 05:29	1
4-Bromofluorobenzene (Surr)	100		80 - 125		09/24/18 05:29	1
Toluene-d8 (Surr)	104		80 - 122		09/24/18 05:29	1
Trifluorotoluene (Surr)	96		80 - 120		09/24/18 05:29	1
Dibromofluoromethane (Surr)	95		77 - 120		09/24/18 05:29	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/19/18 18:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150					09/19/18 18:13	1
Trifluorotoluene (Surr)	116		50 - 150					09/19/18 18:13	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 16:08	5
Iron	25		1.0		mg/L		09/20/18 08:55	09/20/18 16:08	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:50	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-7
Date Collected: 09/11/18 11:50
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 05:55	1
Toluene	ND		2.0		ug/L			09/24/18 05:55	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 05:55	1
Methyl tert-butyl ether	2.6		2.0		ug/L			09/24/18 05:55	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 05:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		80 - 126		09/24/18 05:55	1
4-Bromofluorobenzene (Surr)	100		80 - 125		09/24/18 05:55	1
Toluene-d8 (Surr)	103		80 - 122		09/24/18 05:55	1
Trifluorotoluene (Surr)	97		80 - 120		09/24/18 05:55	1
Dibromofluoromethane (Surr)	95		77 - 120		09/24/18 05:55	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/19/18 18:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150					09/19/18 18:44	1
Trifluorotoluene (Surr)	113		50 - 150					09/19/18 18:44	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 16:12	5
Iron	62		1.0		mg/L		09/20/18 08:55	09/20/18 16:12	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:54	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-8
Date Collected: 09/11/18 12:30
Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 06:21	1
Toluene	ND		2.0		ug/L			09/24/18 06:21	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 06:21	1
Methyl tert-butyl ether	6.3		2.0		ug/L			09/24/18 06:21	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 06:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		80 - 126		09/24/18 06:21	1
4-Bromofluorobenzene (Surr)	100		80 - 125		09/24/18 06:21	1
Toluene-d8 (Surr)	100		80 - 122		09/24/18 06:21	1
Trifluorotoluene (Surr)	97		80 - 120		09/24/18 06:21	1
Dibromofluoromethane (Surr)	94		77 - 120		09/24/18 06:21	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/19/18 19:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150					09/19/18 19:15	1
Trifluorotoluene (Surr)	111		50 - 150					09/19/18 19:15	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 11:42	09/21/18 02:36	5
Iron	51		1.0		mg/L		09/20/18 11:42	09/21/18 02:36	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 18:57	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: TB

Date Collected: 09/11/18 00:01

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/24/18 06:48	1
Toluene	ND		2.0		ug/L			09/24/18 06:48	1
Ethylbenzene	ND		3.0		ug/L			09/24/18 06:48	1
Xylenes, Total	ND		3.0		ug/L			09/24/18 06:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 122		09/24/18 06:48	1
Trifluorotoluene (Surr)	97		80 - 120		09/24/18 06:48	1
4-Bromofluorobenzene (Surr)	102		80 - 125		09/24/18 06:48	1
Dibromofluoromethane (Surr)	95		77 - 120		09/24/18 06:48	1
1,2-Dichloroethane-d4 (Surr)	92		80 - 126		09/24/18 06:48	1

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-284712/5

Matrix: Water

Analysis Batch: 284712

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			09/23/18 23:47	1
Toluene	ND		2.0		ug/L			09/23/18 23:47	1
Ethylbenzene	ND		3.0		ug/L			09/23/18 23:47	1
Methyl tert-butyl ether	ND		2.0		ug/L			09/23/18 23:47	1
Xylenes, Total	ND		3.0		ug/L			09/23/18 23:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 125		09/23/18 23:47	1
Toluene-d8 (Surr)	105		80 - 122		09/23/18 23:47	1
1,2-Dichloroethane-d4 (Surr)	105		80 - 126		09/23/18 23:47	1
Trifluorotoluene (Surr)	98		80 - 120		09/23/18 23:47	1
Dibromofluoromethane (Surr)	108		77 - 120		09/23/18 23:47	1

Lab Sample ID: LCS 580-284712/6

Matrix: Water

Analysis Batch: 284712

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.4		ug/L		104	75 - 128
Toluene	10.0	9.99		ug/L		100	75 - 120
Ethylbenzene	10.0	9.90		ug/L		99	75 - 120
m-Xylene & p-Xylene	10.0	9.65		ug/L		96	75 - 120
Methyl tert-butyl ether	10.0	9.89		ug/L		99	72 - 130
o-Xylene	10.0	10.1		ug/L		101	74 - 120
Xylenes, Total	20.0	19.8		ug/L		99	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 125
Toluene-d8 (Surr)	102		80 - 122
1,2-Dichloroethane-d4 (Surr)	102		80 - 126
Trifluorotoluene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Lab Sample ID: LCSD 580-284712/7

Matrix: Water

Analysis Batch: 284712

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	11.2		ug/L		112	75 - 128	7	14
Toluene	10.0	10.2		ug/L		102	75 - 120	2	13
Ethylbenzene	10.0	9.96		ug/L		100	75 - 120	1	14
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	75 - 120	4	14
Methyl tert-butyl ether	10.0	10.5		ug/L		105	72 - 130	6	18
o-Xylene	10.0	10.8		ug/L		108	74 - 120	7	16
Xylenes, Total	20.0	20.8		ug/L		104	74 - 120	5	15

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-284712/7

Matrix: Water

Analysis Batch: 284712

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 125
Toluene-d8 (Surr)	103		80 - 122
1,2-Dichloroethane-d4 (Surr)	104		80 - 126
Trifluorotoluene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	107		77 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-291693/5

Matrix: Water

Analysis Batch: 291693

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/19/18 12:32	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150					09/19/18 12:32	1
Trifluorotoluene (Surr)	126		50 - 150					09/19/18 12:32	1

Lab Sample ID: LCS 580-291693/6

Matrix: Water

Analysis Batch: 291693

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	944		ug/L		94	79 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	100		50 - 150				
Trifluorotoluene (Surr)	131		50 - 150				

Lab Sample ID: LCSD 580-291693/7

Matrix: Water

Analysis Batch: 291693

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	987		ug/L		99	79 - 120	4	10
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	101		50 - 150						
Trifluorotoluene (Surr)	131		50 - 150						

Lab Sample ID: MB 580-291699/6

Matrix: Water

Analysis Batch: 291699

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			09/23/18 12:07	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		09/23/18 12:07	1
Trifluorotoluene (Surr)	122		50 - 150		09/23/18 12:07	1

Lab Sample ID: LCS 580-291699/7
Matrix: Water
Analysis Batch: 291699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	866		ug/L		87	79 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	126		50 - 150

Lab Sample ID: LCSD 580-291699/8
Matrix: Water
Analysis Batch: 291699

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	874		ug/L		87	79 - 120	1	10

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150
Trifluorotoluene (Surr)	123		50 - 150

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: LCS 580-283966/23-A
Matrix: Water
Analysis Batch: 284430

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 283966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.984		mg/L		98	80 - 120

Lab Sample ID: LCSD 580-283966/24-A
Matrix: Water
Analysis Batch: 284430

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 283966

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1.00	1.02		mg/L		102	80 - 120	4	20

Lab Sample ID: MB 580-284434/22-A
Matrix: Water
Analysis Batch: 284542

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 284434

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 08:55	09/20/18 15:00	5
Iron	ND		1.0		mg/L		09/20/18 08:55	09/20/18 15:00	5

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-284434/23-A

Matrix: Water

Analysis Batch: 284542

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 284434

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	1.02		mg/L		102	80 - 120
Iron	22.0	21.8		mg/L		99	80 - 120

Lab Sample ID: LCSD 580-284434/24-A

Matrix: Water

Analysis Batch: 284542

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 284434

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1.00	0.991		mg/L		99	80 - 120	2	20
Iron	22.0	21.8		mg/L		99	80 - 120	0	20

Lab Sample ID: 580-80278-1 MS

Matrix: Water

Analysis Batch: 284542

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 284434

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	1.05		mg/L		105	80 - 120
Iron	4.6		22.0	28.7		mg/L		110	80 - 120

Lab Sample ID: 580-80278-1 MSD

Matrix: Water

Analysis Batch: 284542

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 284434

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1.00	1.05		mg/L		105	80 - 120	0	20
Iron	4.6		22.0	28.8		mg/L		110	80 - 120	0	20

Lab Sample ID: 580-80278-1 DU

Matrix: Water

Analysis Batch: 284542

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 284434

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/L		NC	20
Iron	4.6		4.52		mg/L		1	20

Lab Sample ID: MB 580-284448/22-A

Matrix: Water

Analysis Batch: 284542

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 284448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/20/18 11:42	09/21/18 00:41	5
Iron	ND		1.0		mg/L		09/20/18 11:42	09/21/18 00:41	5

Lab Sample ID: LCS 580-284448/23-A

Matrix: Water

Analysis Batch: 284542

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 284448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	1.05		mg/L		105	80 - 120

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 580-284448/23-A
Matrix: Water
Analysis Batch: 284542

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 284448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	22.0	21.1		mg/L		96	80 - 120

Lab Sample ID: LCSD 580-284448/24-A
Matrix: Water
Analysis Batch: 284542

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 284448

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	1.00		mg/L		100	80 - 120	5	20
Iron	22.0	20.4		mg/L		93	80 - 120	4	20

Lab Sample ID: MB 580-283866/18-B
Matrix: Water
Analysis Batch: 284430

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 283966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		09/14/18 08:31	09/19/18 17:53	5

Lab Sample ID: 580-80278-1 MS
Matrix: Water
Analysis Batch: 284430

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 283966

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	1.05		mg/L		105	80 - 120

Lab Sample ID: 580-80278-1 MSD
Matrix: Water
Analysis Batch: 284430

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 283966

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1.00	1.06		mg/L		106	80 - 120	2	20

Lab Sample ID: 580-80278-1 DU
Matrix: Water
Analysis Batch: 284430

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 283966

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-1

Date Collected: 09/11/18 09:10

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 03:17	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291699	09/23/18 14:11	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:04	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 15:13	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 09/11/18 09:50

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 03:43	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291699	09/23/18 14:42	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:36	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 15:51	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 09/11/18 13:10

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 04:10	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291699	09/23/18 15:13	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:40	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 15:55	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 09/11/18 11:10

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 04:36	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291699	09/23/18 15:43	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-4

Date Collected: 09/11/18 11:10

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:43	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 15:59	FCW	TAL SEA

Client Sample ID: MW-5

Date Collected: 09/11/18 08:40

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 05:02	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291693	09/19/18 17:11	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:47	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 16:04	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 09/11/18 10:30

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 05:29	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291693	09/19/18 18:13	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:50	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 16:08	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 09/11/18 11:50

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 05:55	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291693	09/19/18 18:44	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:54	FCW	TAL SEA
Total Recoverable	Prep	3005A			284434	09/20/18 08:55	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/20/18 16:12	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Client Sample ID: MW-8

Date Collected: 09/11/18 12:30

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 06:21	RSB	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	291693	09/19/18 19:15	JSM	TAL SEA
Dissolved	Filtration	FILTRATION			283866	09/13/18 08:36	JKM	TAL SEA
Dissolved	Prep	3005A			283966	09/14/18 08:31	JKM	TAL SEA
Dissolved	Analysis	6020A		5	284430	09/19/18 18:57	FCW	TAL SEA
Total Recoverable	Prep	3005A			284448	09/20/18 11:42	JKM	TAL SEA
Total Recoverable	Analysis	6020A		5	284542	09/21/18 02:36	FCW	TAL SEA

Client Sample ID: TB

Date Collected: 09/11/18 00:01

Date Received: 09/12/18 09:40

Lab Sample ID: 580-80278-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	284712	09/24/18 06:48	RSB	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Iron
6020A	3005A	Water	Lead
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Methyl tert-butyl ether
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Sample Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-80278-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-80278-1	MW-1	Water	09/11/18 09:10	09/12/18 09:40
580-80278-2	MW-2	Water	09/11/18 09:50	09/12/18 09:40
580-80278-3	MW-3	Water	09/11/18 13:10	09/12/18 09:40
580-80278-4	MW-4	Water	09/11/18 11:10	09/12/18 09:40
580-80278-5	MW-5	Water	09/11/18 08:40	09/12/18 09:40
580-80278-6	MW-6	Water	09/11/18 10:30	09/12/18 09:40
580-80278-7	MW-7	Water	09/11/18 11:50	09/12/18 09:40
580-80278-8	MW-8	Water	09/11/18 12:30	09/12/18 09:40
580-80278-9	TB	Water	09/11/18 00:01	09/12/18 09:40



Laboratory Management Program LaMP Chain of Custody Record

Page 1 of 1

BP/ARC Project Name: 5300 GWM
BP/ARC Facility No: 500

Req Due Date (mm/dd/yy): Standard
Lab Work Order Number: 80278
Rush TAT: Yes ☐ No ☒

Lab Name: TestAmerica - Tacoma	BP/ARC Facility Address: <u>710 15th Ave</u>	Consultant/Contractor: Antea Group
Lab Address: 5755 8th Street East, Tacoma, Washington	City, State, ZIP Code: <u>Longview WA</u>	Consultant/Contractor Project No: 05300SA181
Lab PM: Elaine Walker	Lead Regulatory Agency: WA Ecology	Address: 4008 148th ave NE, Redmond WA
Lab Phone: 253-248-4972	California Global ID No.: na	Consultant/Contractor PM: Megan Richard
Lab Shipping Acct: na	Enfos Proposal No: <u>009V - 0007 WR 321180</u>	Phone: (425) 498-7711
Lab Bottle Order No: na	Accounting Mode: Provision ☒ OOC-BU ☐ OOC-RM ☐	Email EDD To: <u>megan.richard@anteagroup.com</u>
Other Info: na	Stage: Activity:	Invoice To: BP/ARC ☒ Contractor ☐

BP/ARC EBM: Wade Melton				Matrix		No. Containers / Preservative										Requested Analyses										Report Type & QC Level	
EBM Phone: (360) 371-1437																										Standard ☒	
EBM Email: <u>wade.melton@bp.com</u>																										Full Data Package ☐	
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	NWTPH Gx	NWTPH Dx	EDB (8011)	BTEX	MTBE	Lead Total	Lead Dissolved	Iron Total	Comments						

	MW-1	9/11/18	0910	X			8	1		1	6		X			X	X	X	X	X	
	MW-2		0950	X			8	1		1	6		X			X	X	X	X	X	
	MW-3		1310	X			8	1		1	6		X			X	X	X	X	X	
	MW-4		1110	X			8	1		1	6		X			X	X	X	X	X	
	MW-5		0840	X			8	1		1	6		X			X	X	X	X	X	
	MW-6		1030	X			8	1		1	6		X			X	X	X	X	X	
	MW-7		1150	X			8	1		1	6		X			X	X	X	X	X	
	MW-8	9/11/18	1230	X			8	1		1	6		X			X	X	X	X	X	
	TB															X					



580-80278 Chain of Custody

Therm. ID: A2 Cor: 2.7 ° Unc: 2.6 °
Cooler Desc: Log Blue
Packing: Bubble FedEx: 9.0
Cust. Seal: Yes ☒ No ☐ UPS:
☒ Wet Packs/Dry Ice/None Other:

Sampler's Name: <u>Brad Jackson</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: Antea Group	<u>Brad Jackson / Antea</u>		<u>9/11/18</u>	<u>1500</u>	<u>B. Hall SEA TA</u>		<u>9.12.18</u>	<u>0940</u>
Shipment Method: <u>FedEx</u>	Ship Date: <u>9/11/18</u>							
Shipment Tracking No:								

Special Instructions: Contact Megan Richard w/ Questions.

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No	Temp Blank: Yes / No	Cooler Temp on Receipt: _____ °F/C	Trip Blank: Yes / No	MS/MSD Sample Submitted: Yes / No
--	----------------------	------------------------------------	----------------------	-----------------------------------

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-80278-1

Login Number: 80278

List Number: 1

Creator: Blankinship, Tom X

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	False	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-82197-1

Client Project/Site: BP - ARCO 5300
Revision: 1

For:

Antea USA, Inc.
4006 148th Ave NE
Redmond, Washington 98052

Attn: Megan Richard

M. Elaine Walker

Authorized for release by:
12/12/2018 2:35:03 PM

Elaine Walker, Project Manager II
(253)248-4972
elaine.walker@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1
2
3
4
5
6
7
8
9
10
11

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The signature on the cover page extends to the case narrative and all the data and forms in the package. The Chain of Custody is included and is an integral part of this report.



Elaine Walker
Project Manager II
12/12/2018 2:35:03 PM



Table of Contents

Cover Page	1
Table of Contents	3
Case Narrative	4
Definitions	5
Client Sample Results	6
QC Sample Results	15
Chronicle	20
Certification Summary	23
Sample Summary	24
Chain of Custody	25
Receipt Checklists	26

Case Narrative

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Job ID: 580-82197-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-82197-1

Revision 1: December 12, 2018

The report was revised to remove Naphthalene and EDC from the 8260C VOC analysis as these analytes were not requested.

Receipt

Nine samples were received on 11/29/2018 3:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

GC/MS VOA

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-4 (580-82197-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-1

Date Collected: 11/29/18 10:25

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/05/18 07:07	1
Toluene	ND		2.0		ug/L			12/05/18 07:07	1
Ethylbenzene	ND		3.0		ug/L			12/05/18 07:07	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/05/18 07:07	1
Xylenes, Total	ND		3.0		ug/L			12/05/18 07:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		80 - 126		12/05/18 07:07	1
4-Bromofluorobenzene (Surr)	112		80 - 125		12/05/18 07:07	1
Toluene-d8 (Surr)	110		80 - 122		12/05/18 07:07	1
Trifluorotoluene (Surr)	94		80 - 120		12/05/18 07:07	1
Dibromofluoromethane (Surr)	100		77 - 120		12/05/18 07:07	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		50 - 150					12/06/18 16:36	1
Trifluorotoluene (Surr)	114		50 - 150					12/06/18 16:36	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 09:46	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 17:15	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-2
Date Collected: 11/29/18 11:30
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/05/18 07:31	1
Toluene	ND		2.0		ug/L			12/05/18 07:31	1
Ethylbenzene	ND		3.0		ug/L			12/05/18 07:31	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/05/18 07:31	1
Xylenes, Total	ND		3.0		ug/L			12/05/18 07:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 126		12/05/18 07:31	1
4-Bromofluorobenzene (Surr)	115		80 - 125		12/05/18 07:31	1
Toluene-d8 (Surr)	111		80 - 122		12/05/18 07:31	1
Trifluorotoluene (Surr)	94		80 - 120		12/05/18 07:31	1
Dibromofluoromethane (Surr)	98		77 - 120		12/05/18 07:31	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		50 - 150		12/06/18 17:03	1
Trifluorotoluene (Surr)	117		50 - 150		12/06/18 17:03	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:25	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 17:47	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-3
Date Collected: 11/29/18 13:50
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 14:45	1
Toluene	ND		2.0		ug/L			12/06/18 14:45	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 14:45	1
Methyl tert-butyl ether	6.7		2.0		ug/L			12/06/18 14:45	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 14:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		80 - 126		12/06/18 14:45	1
4-Bromofluorobenzene (Surr)	112		80 - 125		12/06/18 14:45	1
Toluene-d8 (Surr)	113		80 - 122		12/06/18 14:45	1
Trifluorotoluene (Surr)	95		80 - 120		12/06/18 14:45	1
Dibromofluoromethane (Surr)	105		77 - 120		12/06/18 14:45	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 17:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		50 - 150					12/06/18 17:30	1
Trifluorotoluene (Surr)	119		50 - 150					12/06/18 17:30	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:30	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 17:51	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-4
Date Collected: 11/29/18 12:15
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 15:10	1
Toluene	ND		2.0		ug/L			12/06/18 15:10	1
Ethylbenzene	43		3.0		ug/L			12/06/18 15:10	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/06/18 15:10	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 15:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		80 - 126		12/06/18 15:10	1
4-Bromofluorobenzene (Surr)	114		80 - 125		12/06/18 15:10	1
Toluene-d8 (Surr)	109		80 - 122		12/06/18 15:10	1
Trifluorotoluene (Surr)	94		80 - 120		12/06/18 15:10	1
Dibromofluoromethane (Surr)	103		77 - 120		12/06/18 15:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2800		250		ug/L			12/06/18 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	180	X	50 - 150		12/06/18 17:57	1
Trifluorotoluene (Surr)	124		50 - 150		12/06/18 17:57	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.010		0.0040		mg/L		12/07/18 14:36	12/11/18 16:34	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.010		0.0040		mg/L		12/05/18 12:08	12/07/18 17:54	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-5
Date Collected: 11/29/18 11:00
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 15:35	1
Toluene	ND		2.0		ug/L			12/06/18 15:35	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 15:35	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/06/18 15:35	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 15:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		80 - 126		12/06/18 15:35	1
4-Bromofluorobenzene (Surr)	111		80 - 125		12/06/18 15:35	1
Toluene-d8 (Surr)	112		80 - 122		12/06/18 15:35	1
Trifluorotoluene (Surr)	94		80 - 120		12/06/18 15:35	1
Dibromofluoromethane (Surr)	100		77 - 120		12/06/18 15:35	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 18:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		50 - 150		12/06/18 18:25	1
Trifluorotoluene (Surr)	118		50 - 150		12/06/18 18:25	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:38	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 17:58	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-6
Date Collected: 11/29/18 11:50
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 16:00	1
Toluene	ND		2.0		ug/L			12/06/18 16:00	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 16:00	1
Methyl tert-butyl ether	3.1		2.0		ug/L			12/06/18 16:00	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 16:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 126		12/06/18 16:00	1
4-Bromofluorobenzene (Surr)	114		80 - 125		12/06/18 16:00	1
Toluene-d8 (Surr)	112		80 - 122		12/06/18 16:00	1
Trifluorotoluene (Surr)	96		80 - 120		12/06/18 16:00	1
Dibromofluoromethane (Surr)	98		77 - 120		12/06/18 16:00	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L	-		12/06/18 19:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		50 - 150					12/06/18 19:19	1
Trifluorotoluene (Surr)	115		50 - 150					12/06/18 19:19	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:43	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 18:01	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-7
Date Collected: 11/29/18 12:50
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 16:25	1
Toluene	ND		2.0		ug/L			12/06/18 16:25	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 16:25	1
Methyl tert-butyl ether	2.7		2.0		ug/L			12/06/18 16:25	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		80 - 126		12/06/18 16:25	1
4-Bromofluorobenzene (Surr)	114		80 - 125		12/06/18 16:25	1
Toluene-d8 (Surr)	112		80 - 122		12/06/18 16:25	1
Trifluorotoluene (Surr)	92		80 - 120		12/06/18 16:25	1
Dibromofluoromethane (Surr)	99		77 - 120		12/06/18 16:25	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 19:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		50 - 150					12/06/18 19:46	1
Trifluorotoluene (Surr)	114		50 - 150					12/06/18 19:46	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:47	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 18:05	5

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-8
Date Collected: 11/29/18 13:20
Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 16:51	1
Toluene	ND		2.0		ug/L			12/06/18 16:51	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 16:51	1
Methyl tert-butyl ether	9.9		2.0		ug/L			12/06/18 16:51	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		80 - 126		12/06/18 16:51	1
4-Bromofluorobenzene (Surr)	115		80 - 125		12/06/18 16:51	1
Toluene-d8 (Surr)	112		80 - 122		12/06/18 16:51	1
Trifluorotoluene (Surr)	97		80 - 120		12/06/18 16:51	1
Dibromofluoromethane (Surr)	102		77 - 120		12/06/18 16:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L	-		12/06/18 20:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		50 - 150					12/06/18 20:12	1
Trifluorotoluene (Surr)	115		50 - 150					12/06/18 20:12	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 16:51	5

Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 18:08	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: Trip Blank_1

Date Collected: 11/29/18 00:00

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-9

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 17:16	1
Toluene	ND		2.0		ug/L			12/06/18 17:16	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 17:16	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/06/18 17:16	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 17:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		80 - 126		12/06/18 17:16	1
4-Bromofluorobenzene (Surr)	113		80 - 125		12/06/18 17:16	1
Toluene-d8 (Surr)	114		80 - 122		12/06/18 17:16	1
Trifluorotoluene (Surr)	100		80 - 120		12/06/18 17:16	1
Dibromofluoromethane (Surr)	103		77 - 120		12/06/18 17:16	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		250		ug/L			12/06/18 14:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		50 - 150		12/06/18 14:40	1
Trifluorotoluene (Surr)	105		50 - 150		12/06/18 14:40	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-290286/5

Matrix: Water

Analysis Batch: 290286

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/04/18 22:32	1
Toluene	ND		2.0		ug/L			12/04/18 22:32	1
Ethylbenzene	ND		3.0		ug/L			12/04/18 22:32	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/04/18 22:32	1
Xylenes, Total	ND		3.0		ug/L			12/04/18 22:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		80 - 126		12/04/18 22:32	1
4-Bromofluorobenzene (Surr)	119		80 - 125		12/04/18 22:32	1
Toluene-d8 (Surr)	114		80 - 122		12/04/18 22:32	1
Trifluorotoluene (Surr)	93		80 - 120		12/04/18 22:32	1
Dibromofluoromethane (Surr)	103		77 - 120		12/04/18 22:32	1

Lab Sample ID: LCS 580-290286/6

Matrix: Water

Analysis Batch: 290286

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.00		ug/L		90	75 - 128
Toluene	10.0	10.3		ug/L		103	75 - 120
Ethylbenzene	10.0	10.9		ug/L		109	75 - 120
m-Xylene & p-Xylene	10.0	11.0		ug/L		110	75 - 120
o-Xylene	10.0	11.3		ug/L		113	74 - 120
Methyl tert-butyl ether	10.0	10.6		ug/L		106	72 - 130
Xylenes, Total	20.0	22.3		ug/L		112	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		80 - 126
4-Bromofluorobenzene (Surr)	111		80 - 125
Toluene-d8 (Surr)	106		80 - 122
Trifluorotoluene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	107		77 - 120

Lab Sample ID: LCSD 580-290286/7

Matrix: Water

Analysis Batch: 290286

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	8.75		ug/L		88	75 - 128	3	14
Toluene	10.0	10.3		ug/L		103	75 - 120	0	13
Ethylbenzene	10.0	10.6		ug/L		106	75 - 120	2	14
m-Xylene & p-Xylene	10.0	10.8		ug/L		108	75 - 120	2	14
o-Xylene	10.0	11.2		ug/L		112	74 - 120	0	16
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 130	5	18
Xylenes, Total	20.0	22.0		ug/L		110	74 - 120	1	15

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-290286/7

Matrix: Water

Analysis Batch: 290286

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		80 - 126
4-Bromofluorobenzene (Surr)	115		80 - 125
Toluene-d8 (Surr)	106		80 - 122
Trifluorotoluene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	101		77 - 120

Lab Sample ID: MB 580-290432/5

Matrix: Water

Analysis Batch: 290432

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0		ug/L			12/06/18 11:22	1
Toluene	ND		2.0		ug/L			12/06/18 11:22	1
Ethylbenzene	ND		3.0		ug/L			12/06/18 11:22	1
Methyl tert-butyl ether	ND		2.0		ug/L			12/06/18 11:22	1
Xylenes, Total	ND		3.0		ug/L			12/06/18 11:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		80 - 126		12/06/18 11:22	1
4-Bromofluorobenzene (Surr)	116		80 - 125		12/06/18 11:22	1
Toluene-d8 (Surr)	113		80 - 122		12/06/18 11:22	1
Trifluorotoluene (Surr)	94		80 - 120		12/06/18 11:22	1
Dibromofluoromethane (Surr)	101		77 - 120		12/06/18 11:22	1

Lab Sample ID: LCS 580-290432/6

Matrix: Water

Analysis Batch: 290432

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	8.60		ug/L		86	75 - 128
Toluene	10.0	9.97		ug/L		100	75 - 120
Ethylbenzene	10.0	10.6		ug/L		106	75 - 120
m-Xylene & p-Xylene	10.0	10.8		ug/L		108	75 - 120
o-Xylene	10.0	10.9		ug/L		109	74 - 120
Methyl tert-butyl ether	10.0	10.1		ug/L		101	72 - 130
Xylenes, Total	20.0	21.7		ug/L		109	74 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		80 - 126
4-Bromofluorobenzene (Surr)	114		80 - 125
Toluene-d8 (Surr)	106		80 - 122
Trifluorotoluene (Surr)	94		80 - 120
Dibromofluoromethane (Surr)	98		77 - 120

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-290432/7

Matrix: Water

Analysis Batch: 290432

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	8.65		ug/L		87	75 - 128	1	14
Toluene	10.0	9.70		ug/L		97	75 - 120	3	13
Ethylbenzene	10.0	10.2		ug/L		102	75 - 120	5	14
m-Xylene & p-Xylene	10.0	10.6		ug/L		106	75 - 120	2	14
o-Xylene	10.0	10.3		ug/L		103	74 - 120	5	16
Methyl tert-butyl ether	10.0	10.3		ug/L		103	72 - 130	2	18
Xylenes, Total	20.0	20.9		ug/L		105	74 - 120	4	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	113		80 - 126
4-Bromofluorobenzene (Surr)	111		80 - 125
Toluene-d8 (Surr)	106		80 - 122
Trifluorotoluene (Surr)	92		80 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-290471/6

Matrix: Water

Analysis Batch: 290471

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline	ND		250		ug/L			12/06/18 12:42	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	73		50 - 150					12/06/18 12:42	1
Trifluorotoluene (Surr)	110		50 - 150					12/06/18 12:42	1

Lab Sample ID: LCS 580-290471/7

Matrix: Water

Analysis Batch: 290471

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline			1000	932		ug/L	-	93	79 - 120		
Surrogate	LCS	LCS									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	80		50 - 150								
Trifluorotoluene (Surr)	116		50 - 150								

Lab Sample ID: LCSD 580-290471/8

Matrix: Water

Analysis Batch: 290471

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	925		ug/L		93	79 - 120	1	10

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-290471/8

Matrix: Water

Analysis Batch: 290471

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	75		50 - 150
Trifluorotoluene (Surr)	112		50 - 150

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-290557/22-A

Matrix: Water

Analysis Batch: 290796

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/07/18 14:36	12/11/18 09:34	5

Lab Sample ID: LCS 580-290557/23-A

Matrix: Water

Analysis Batch: 290796

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.929		mg/L		93	80 - 120

Lab Sample ID: LCSD 580-290557/24-A

Matrix: Water

Analysis Batch: 290796

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	0.985		mg/L		99	80 - 120	6	20

Lab Sample ID: 580-82197-1 MS

Matrix: Water

Analysis Batch: 290796

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.971		mg/L		97	80 - 120

Lab Sample ID: 580-82197-1 MSD

Matrix: Water

Analysis Batch: 290796

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1.00	0.967		mg/L		97	80 - 120	0	20

Lab Sample ID: 580-82197-1 DU

Matrix: Water

Analysis Batch: 290796

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 290557

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 580-290288/10-B

Matrix: Water

Analysis Batch: 290621

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 290342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0040		mg/L		12/05/18 12:08	12/07/18 17:04	5

Lab Sample ID: LCS 580-290288/11-B

Matrix: Water

Analysis Batch: 290621

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 290342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	1.01		mg/L		101	80 - 120

Lab Sample ID: LCSD 580-290288/12-B

Matrix: Water

Analysis Batch: 290621

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 290342

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1.00	0.987		mg/L		99	80 - 120	2	20

Lab Sample ID: 580-82197-1 MS

Matrix: Water

Analysis Batch: 290621

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 290342

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.998		mg/L		100	80 - 120

Lab Sample ID: 580-82197-1 MSD

Matrix: Water

Analysis Batch: 290621

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 290342

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1.00	1.02		mg/L		102	80 - 120	2	20

Lab Sample ID: 580-82197-1 DU

Matrix: Water

Analysis Batch: 290621

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 290342

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		mg/L		NC	20

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-1

Date Collected: 11/29/18 10:25

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290286	12/05/18 07:07	E1L	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 16:36	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 17:15	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290796	12/11/18 09:46	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 11/29/18 11:30

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290286	12/05/18 07:31	E1L	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 17:03	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 17:47	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:25	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 11/29/18 13:50

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 14:45	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 17:30	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 17:51	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:30	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 11/29/18 12:15

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 15:10	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 17:57	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-4

Date Collected: 11/29/18 12:15

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 17:54	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:34	FCW	TAL SEA

Client Sample ID: MW-5

Date Collected: 11/29/18 11:00

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 15:35	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 18:25	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 17:58	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:38	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 11/29/18 11:50

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 16:00	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 19:19	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 18:01	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:43	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 11/29/18 12:50

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 16:25	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 19:46	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 18:05	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:47	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Client Sample ID: MW-8

Date Collected: 11/29/18 13:20

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 16:51	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 20:12	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			290288	12/04/18 16:21	T1H	TAL SEA
Dissolved	Prep	3005A			290342	12/05/18 12:08	T1H	TAL SEA
Dissolved	Analysis	6020A		5	290621	12/07/18 18:08	FCW	TAL SEA
Total Recoverable	Prep	3005A			290557	12/07/18 14:36	T1H	TAL SEA
Total Recoverable	Analysis	6020A		5	290866	12/11/18 16:51	FCW	TAL SEA

Client Sample ID: Trip Blank_1

Date Collected: 11/29/18 00:00

Date Received: 11/29/18 15:45

Lab Sample ID: 580-82197-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	290432	12/06/18 17:16	W1T	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	290471	12/06/18 14:40	CJ	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C553	02-17-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020A	3005A	Water	Lead
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Methyl tert-butyl ether
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Sample Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 5300

TestAmerica Job ID: 580-82197-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82197-1	MW-1	Water	11/29/18 10:25	11/29/18 15:45
580-82197-2	MW-2	Water	11/29/18 11:30	11/29/18 15:45
580-82197-3	MW-3	Water	11/29/18 13:50	11/29/18 15:45
580-82197-4	MW-4	Water	11/29/18 12:15	11/29/18 15:45
580-82197-5	MW-5	Water	11/29/18 11:00	11/29/18 15:45
580-82197-6	MW-6	Water	11/29/18 11:50	11/29/18 15:45
580-82197-7	MW-7	Water	11/29/18 12:50	11/29/18 15:45
580-82197-8	MW-8	Water	11/29/18 13:20	11/29/18 15:45
580-82197-9	Trip Blank_1	Water	11/29/18 00:00	11/29/18 15:45

Laboratory Management Program LAMP Chain of Custody Record

BP/ARC Project Name: BP 5300 Req Due Date (mm/dd/yyyy): Standard Rush TAT: Yes ☐ No ☒ Page 1 of 1
BP/ARC Facility No.: BP Facility No. 5300 Lab Work Order Number:

Lab Name: Test America, Inc.
Lab Address: Tacoma, WA
Lab PM: Elaine Walker
Lab Phone: 253.248.4972
Lab Shipping Acct: NA
Lab Bottle Order No: NA
Other Info: elaine.walker@testamericainc.com

BP/ARC Facility Address: 710 15th Street
City, State, ZIP Code: Longview WA
Lead Regulatory Agency: Washington State Department of Ecology
California Global ID No.: NA
Enfco Proposal No: 009V4-0007 / WA 321180
Accounting Mode: Provision ☒ OOC-BU OOC-RM
Stage: 40 Activity: 80

Consultant/Contractor: Antea Group
Consultant/Contractor Project No: 05300SA181_20100_MR
Address: 4006 148th Ave NE, Redmond, WA 98052
Consultant/Contractor PM: Megan Richard
Phone: P: 425.498.7711 F: 425.869.1892
Email EDD To: Megan.Richard@anteagroup.com
Invoice To: BP/ARC ☒ Contractor

Lab No.	Sample Description	Date	Time	Matrix										Requested Analyses										Report Type & QC Level	
				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Na ₂ SO ₃	MeOH	BTEX by EPA Method 8260B	MTBE by EPA Method 8260B	NWTPH-GX	NWTPH-D w/ silica gel	Pb-T by EPA 6010B	EDB by EPA 8011	EDC by EPA 8260	Standard ☒ w/ Access		Full Data Package ☐		Comments
MW-1_		11/29/18	1025	X			8	1	1	6				X	X	X	X	X	X	X					
MW-2_		11/29/18	1130	X			1	1	1	1				X	X	X	X	X	X	X					
MW-3_		11/29/18	1350	X			1	1	1	1				X	X	X	X	X	X	X					
MW-4_		11/29/18	1215	X			1	1	1	1				X	X	X	X	X	X	X					
MW-5_		11/29/18	1100	X			1	1	1	1				X	X	X	X	X	X	X					
MW-6_		11/29/18	1150	X			1	1	1	1				X	X	X	X	X	X	X					
MW-7_		11/29/18	1250	X			1	1	1	1				X	X	X	X	X	X	X					
MW-8_		11/29/18	1320	X			1	1	1	1				X	X	X	X	X	X	X					
Trip Blank_1		11/29/18		X			6	1	1	1				X	X	X	X	X	X	X					



Sampler's Name: Nolan Green
Sampler's Company: Antea Group
Shipment Method:
Shipment Tracking No:
Special Instructions:

Relinquished By / Affiliation: Nolan Green Date: 11/29/18 Time: 1545
Accepted By / Affiliation: [Signature] Date: 11/29/18 Time: 1545

Temp Blank: Yes / No Cooler Temp on Receipt: 2.3 °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No

THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-82197-1

Login Number: 82197

List Number: 1

Creator: O'Connell, Jason I

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	