

SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Second Half of 2016

ARCO Facility No. 5300

710 15th Avenue, Longview, WA

Antea[®] Group Project No. 05300SA171

March 20, 2017

Prepared for:

Atlantic Richfield Company

4 Centerpointe Drive

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Prepared by:

Antea Group

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SEMI-ANNUAL GROUNDWATER MONITORING REPORT
Atlantic Richfield Company
Second Half of 2016
March 20, 2017

ARCO Facility No.: 5300

Address: 710 15th Avenue, Longview, WA

Atlantic Richfield Project Manager: Charles Carmel

Consulting Co./Contact Person: Antea Group / Megan Richard

Consultant Project Number: 05300SA171

Primary Agency/Regulatory FS ID No.: Washington State Department of Ecology / 41995646

WORK PERFORMED DURING SECOND HALF OF 2016:

- Antea®Group (Antea Group) conducted quarterly groundwater monitoring and sampling on September 20, and December 28, 2016.
- Antea Group prepared this Semi-Annual Groundwater Monitoring Report.

WORK SCHEDULED FOR FIRST HALF OF 2017:

- Antea Group will conduct quarterly groundwater monitoring and sampling.
- Antea Group will prepare a Semi-Annual Groundwater Monitoring Report.

Current Phase of Project:	Monitoring
Frequency of Groundwater Sampling and Monitoring:	Quarterly
Are LPH Present On-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:	Natural Attenuation
Approximate Depth to Groundwater:	11.80 to 12.73 ft. (9/20/2016); 10.11 to 11.24 ft. (12/28/2016)



Groundwater Gradient:	Southwest (9/20/2016)
	Southwest (12/28/2016)
	0.006 ft./linear ft. (9/20/2016)
	0.004 ft./linear ft. (12/28/2016)

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.

Sincerely,

A handwritten signature in blue ink, appearing to read "K-D", written over a horizontal line.

Kenneth Davis
Staff Professional

Date: March 20, 2017

Reviewed by:

A handwritten signature in blue ink, appearing to read "MR", written over a horizontal line.

Megan Richard
Project Manager

Date: March 20, 2017

cc: Mr. Aaren Fiedler, Washington Department of Ecology, Southwest Regional Office
Mr. Charles Carmel, Atlantic Richfield Company (Electronic Copy – Enfos Upload)
File, Antea Group

Enclosures

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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-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	--
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-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	--

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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	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-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-5	4/8/2016	--	11.13	NP	--	--	--
MW-5	9/20/2016	--	12.40	NP	--	--	--
MW-5	12/28/2016	--	11.24	NP	--	--	--
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	--

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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	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	--
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	--

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	--
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-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
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-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

Table 2
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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	--
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-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-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-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

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

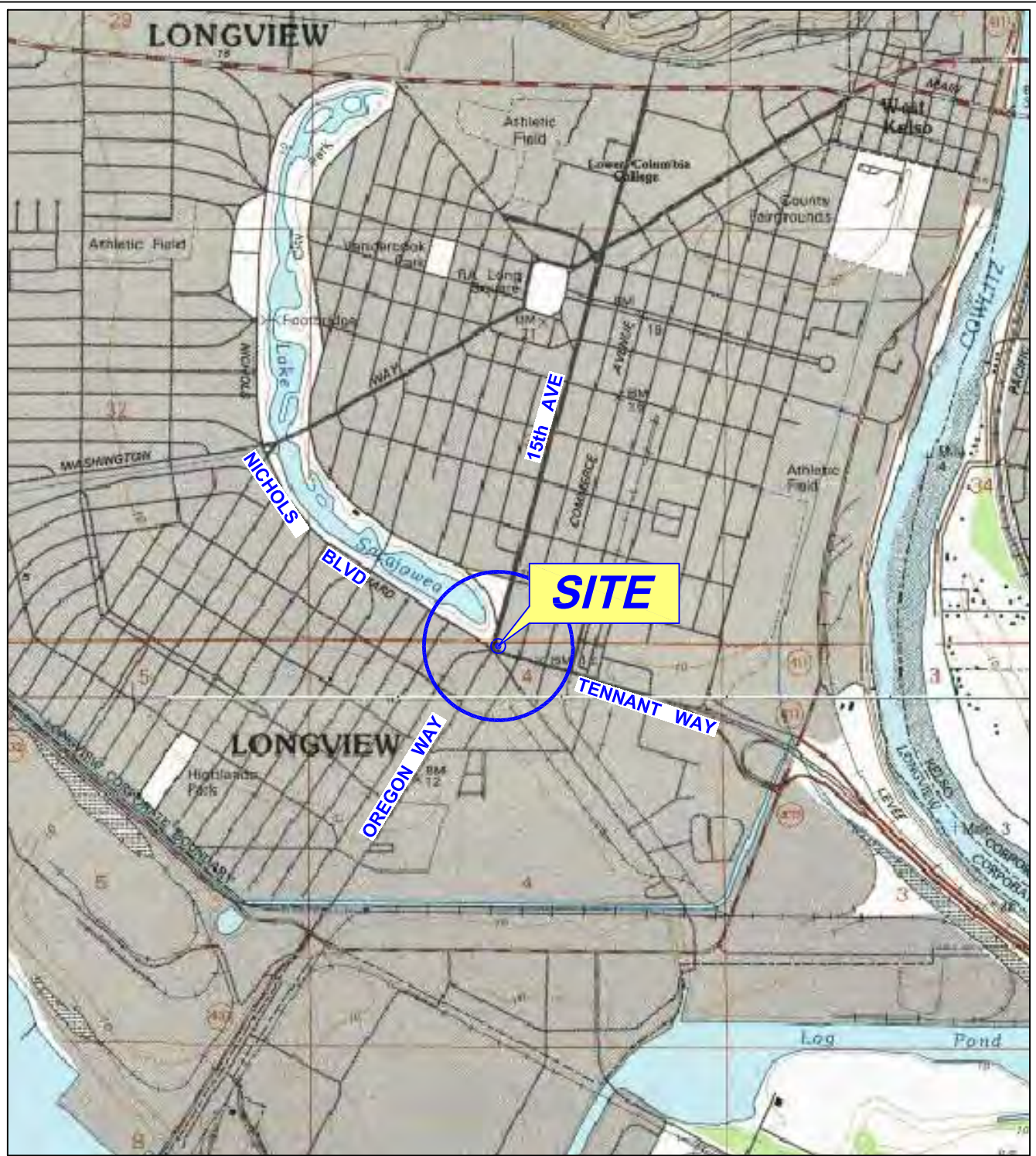
CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	1000/800 ¹	15	--
MW-7	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	2.0	< 0.0096	< 0.50	< 50	< 10	< 10
MW-7	11/13/2013	< 1.0	1.2	< 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
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

Notes:

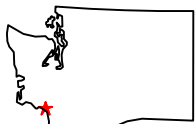
- B = Benzene
- T = Toluene
- E = Ethylbenzene
- X = Xylenes, Total
- MTBE = Methyl-tertiary-butyl ether
- EDB = 1,2-Dibromo-ethane
- EDC = 1,2-Dichloro-ethane
- TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx
- 1,000/800¹ ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L
- <1.0 = Concentrations were not detected above the laboratory method reporting limit.
- ug/L = Micrograms per liter
- = 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

Figures

- Figure 1 Site Location Map
- Figure 2 Site Aerial Map
- Figure 3 Groundwater Analytical and Elevation Contour Map – 9/20/2016
- Figure 4 Groundwater Analytical and Elevation Contour Map – 12/28/2016



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



QUADRANGLE LOCATION

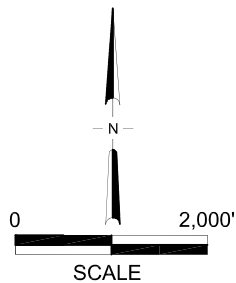


FIGURE 1
 SITE LOCATION MAP

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

PROJECT NO. 05300EA131	DRAWN BY K. MARTIN
FILE NO. 5300-SLM	PREPARED BY M. STOCK
DATE 04 JUN 13	REV. 0 REVIEWED BY



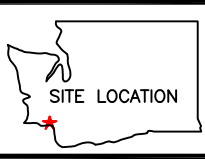
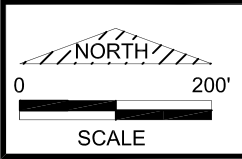


FIGURE 2
SITE AERIAL MAP
 ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WASHINGTON

PROJECT NO. 5300EA121	DRN KM
FILE NO. 5300G-Sam	PREPARED MS
DATE 04 JUN 13	REV. 0
	REVIEWED



LEGEND

- MW-1 GROUNDWATER MONITORING WELL LOCATION
- PIPING
- IW-1 INJECTION WELL LOCATION
- CATCH BASIN
- (88.02) GROUNDWATER ELEVATION IN FEET RELATIVE TO AN ARBITRARY SITE DATUM
- 88.00 — INFERRED WATER TABLE CONTOUR IN FEET RELATIVE TO AN ARBITRARY SITE DATUM (CONTOUR INTERVAL: 0.10 ft)
- INFERRED GROUNDWATER FLOW DIRECTION: W
GROUNDWATER GRADIENT: 0.006 ft/LINEAR ft
- NE NOT ESTABLISHED

GROUNDWATER DATA

MW-2	12/28/16	WELL ID/SAMPLE ID
B	<2.0	BENZENE IN µg/L
T	<2.0	TOLUENE IN µg/L
E	<3.0	ETHYLBENZENE IN µg/L
X	<3.0	TOTAL XYLENES IN µg/L
MTBE	<1.0	METHYL TERT-BUTYL ETHER IN µg/L
TPH-G	<50	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN µg/L
Pb-T	<2.0	TOTAL LEAD IN µg/L
Pb-D	<2.0	DISSOLVED LEAD IN µg/L

Notes:
 <1.0 = Concentrations were not detected above the laboratory method reporting limit.
 µg/L = Micrograms per liter
 Results in **bold** indicate concentrations in excess of Washington State Department of Ecology's Model Toxics Control Act (MTC) Method A Cleanup Levels

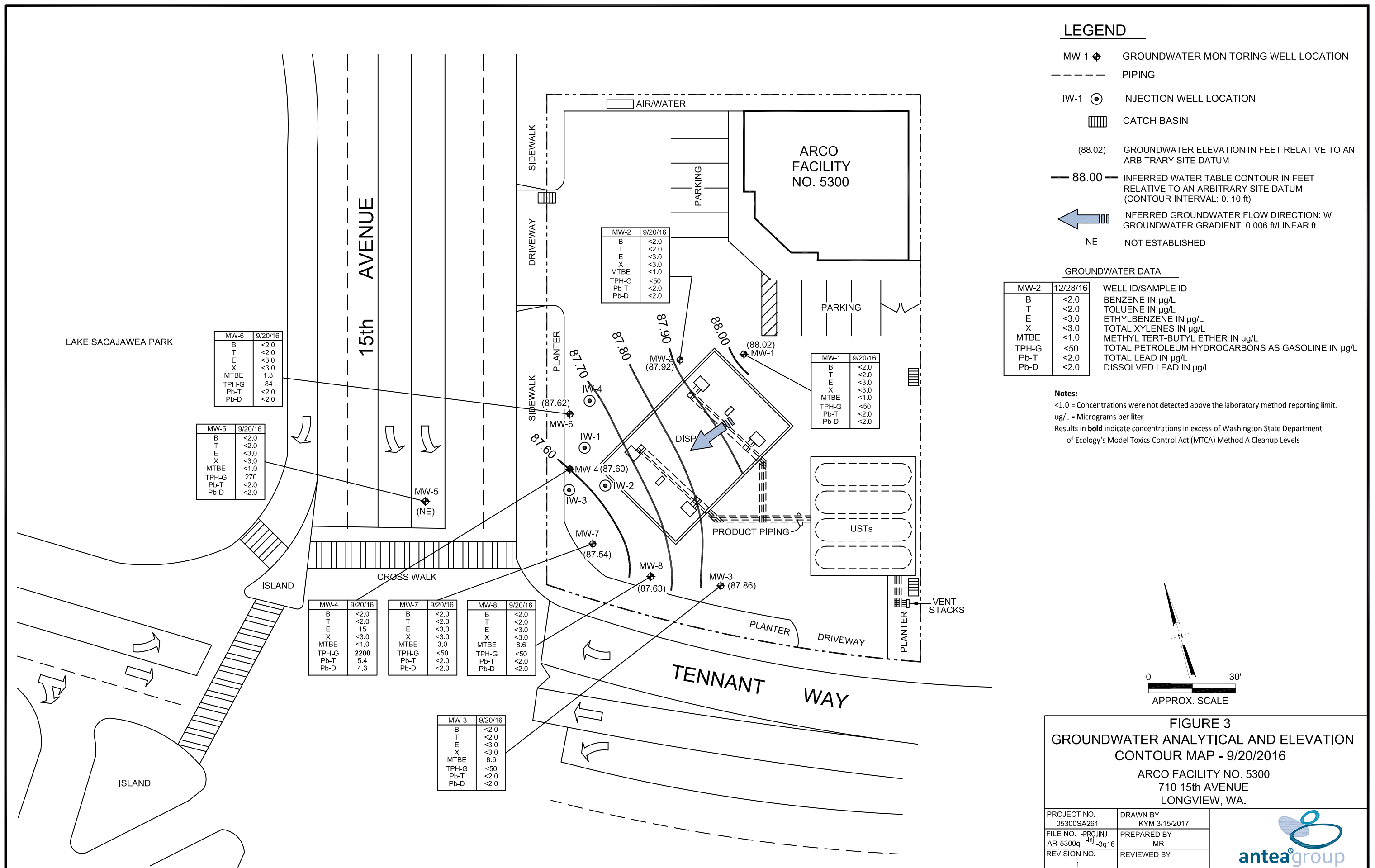


FIGURE 3
GROUNDWATER ANALYTICAL AND ELEVATION
CONTOUR MAP - 9/20/2016
 ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WA.

PROJECT NO. 05300SA261	DRAWN BY KYM 3/15/2017
FILE NO. -PR0JINJ AR-5300q -11 -3q16	PREPARED BY MR
REVISION NO. 1	REVIEWED BY



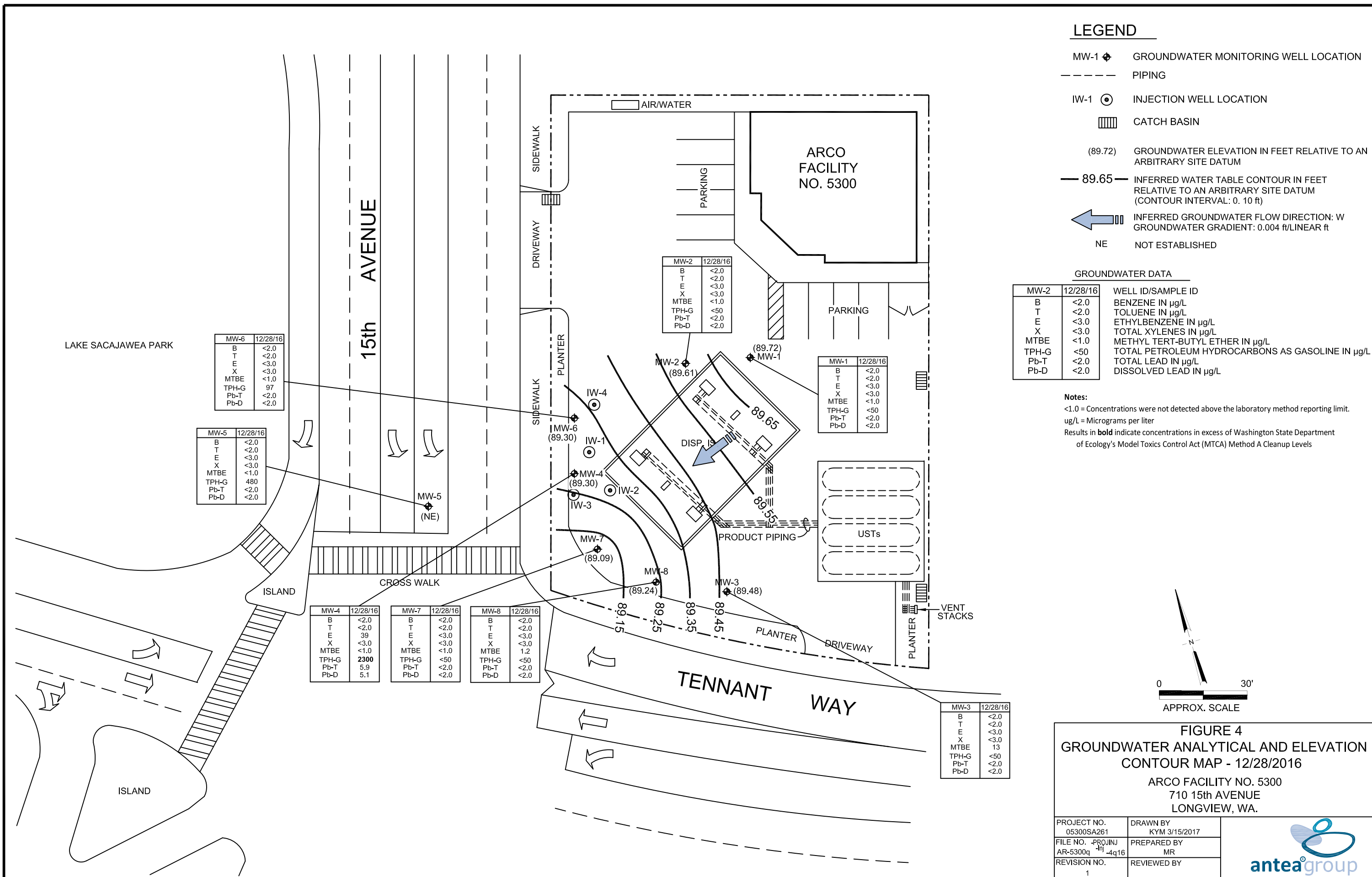
LEGEND

- MW-1 GROUNDWATER MONITORING WELL LOCATION
- PIPING
- IW-1 INJECTION WELL LOCATION
- CATCH BASIN
- (89.72) GROUNDWATER ELEVATION IN FEET RELATIVE TO AN ARBITRARY SITE DATUM
- 89.65 — INFERRED WATER TABLE CONTOUR IN FEET RELATIVE TO AN ARBITRARY SITE DATUM (CONTOUR INTERVAL: 0.10 ft)
- INFERRED GROUNDWATER FLOW DIRECTION: W
GROUNDWATER GRADIENT: 0.004 ft/LINEAR ft
- NE NOT ESTABLISHED

GROUNDWATER DATA

MW-2	12/28/16	WELL ID/SAMPLE ID
B	<2.0	BENZENE IN µg/L
T	<2.0	TOLUENE IN µg/L
E	<3.0	ETHYLBENZENE IN µg/L
X	<3.0	TOTAL XYLENES IN µg/L
MTBE	<1.0	METHYL TERT-BUTYL ETHER IN µg/L
TPH-G	<50	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN µg/L
Pb-T	<2.0	TOTAL LEAD IN µg/L
Pb-D	<2.0	DISSOLVED LEAD IN µg/L

Notes:
 <1.0 = Concentrations were not detected above the laboratory method reporting limit.
 ug/L = Micrograms per liter
 Results in **bold** indicate concentrations in excess of Washington State Department of Ecology's Model Toxics Control Act (MTCA) Method A Cleanup Levels



LAKE SACAJAWEA PARK

15th AVENUE

ARCO FACILITY NO. 5300

MW-2	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	<1.0
TPH-G	<50
Pb-T	<2.0
Pb-D	<2.0

MW-1	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	<1.0
TPH-G	<50
Pb-T	<2.0
Pb-D	<2.0

MW-6	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	<1.0
TPH-G	97
Pb-T	<2.0
Pb-D	<2.0

MW-5	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	<1.0
TPH-G	480
Pb-T	<2.0
Pb-D	<2.0

MW-4	12/28/16
B	<2.0
T	<2.0
E	39
X	<3.0
MTBE	<1.0
TPH-G	2300
Pb-T	5.9
Pb-D	5.1

MW-7	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	<1.0
TPH-G	<50
Pb-T	<2.0
Pb-D	<2.0

MW-8	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	1.2
TPH-G	<50
Pb-T	<2.0
Pb-D	<2.0

MW-3	12/28/16
B	<2.0
T	<2.0
E	<3.0
X	<3.0
MTBE	13
TPH-G	<50
Pb-T	<2.0
Pb-D	<2.0

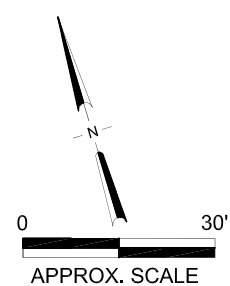



FIGURE 4
GROUNDWATER ANALYTICAL AND ELEVATION
CONTOUR MAP - 12/28/2016
 ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WA.

PROJECT NO. 05300SA261	DRAWN BY KYM 3/15/2017
FILE NO. -PROJINJ AR-5300q -inj -4q16	PREPARED BY MR
REVISION NO. 1	REVIEWED BY



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: 580-62677-1
Client Project/Site: Former ARCO 5300
Sampling Event: 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:
2/7/2017 1:44:52 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

- 1
- 2
- 3
- 4
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- 6
- 7
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- 9
- 10
- 11

The results listed in this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BP LaMP Technical Specification, applicable federal, state and local regulation and certification requirements as well as the methodologies as described in the laboratory SOPs reviewed by the BP LaMP. 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 intergral part of this report.



Elaine Walker
Project Manager II
2/7/2017 1:44:52 PM



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Sample Summary	22
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Case Narrative

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

TestAmerica Job ID: 580-62677-1

Job ID: 580-62677-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-62677-1

Revision 1: February 7, 2017

This revision was required to remove iron and manganese from the report as these elements were not requested for analysis..

GC/MS VOA

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-4 (580-62677-4). 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: Former ARCO 5300

TestAmerica Job ID: 580-62677-1

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.
▫	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: Former ARCO 5300

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-1
Date Collected: 09/20/16 10:20
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 16:28	1
Toluene	ND		2.0		ug/L			09/23/16 16:28	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 16:28	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/23/16 16:28	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 16:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		65 - 143		09/23/16 16:28	1
4-Bromofluorobenzene (Surr)	97		75 - 125		09/23/16 16:28	1
Toluene-d8 (Surr)	100		82 - 122		09/23/16 16:28	1
Trifluorotoluene (Surr)	103		80 - 141		09/23/16 16:28	1
Dibromofluoromethane (Surr)	91		77 - 118		09/23/16 16:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/22/16 21:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150		09/22/16 21:37	1
Trifluorotoluene (Surr)	106		50 - 150		09/22/16 21:37	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:31	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 14:35	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-2
Date Collected: 09/20/16 10:55
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 16:57	1
Toluene	ND		2.0		ug/L			09/23/16 16:57	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 16:57	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/23/16 16:57	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 16:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		65 - 143		09/23/16 16:57	1
4-Bromofluorobenzene (Surr)	95		75 - 125		09/23/16 16:57	1
Toluene-d8 (Surr)	99		82 - 122		09/23/16 16:57	1
Trifluorotoluene (Surr)	101		80 - 141		09/23/16 16:57	1
Dibromofluoromethane (Surr)	90		77 - 118		09/23/16 16:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/22/16 22:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		09/22/16 22:09	1
Trifluorotoluene (Surr)	104		50 - 150		09/22/16 22:09	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 12:55	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:18	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-3
Date Collected: 09/20/16 14:10
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 17:26	1
Toluene	ND		2.0		ug/L			09/23/16 17:26	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 17:26	1
Methyl tert-butyl ether	8.6		1.0		ug/L			09/23/16 17:26	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		65 - 143		09/23/16 17:26	1
4-Bromofluorobenzene (Surr)	97		75 - 125		09/23/16 17:26	1
Toluene-d8 (Surr)	100		82 - 122		09/23/16 17:26	1
Trifluorotoluene (Surr)	104		80 - 141		09/23/16 17:26	1
Dibromofluoromethane (Surr)	91		77 - 118		09/23/16 17:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/22/16 22:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		09/22/16 22:41	1
Trifluorotoluene (Surr)	102		50 - 150		09/22/16 22:41	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:36	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:22	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-4
Date Collected: 09/20/16 12:05
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 17:54	1
Toluene	ND		2.0		ug/L			09/23/16 17:54	1
Ethylbenzene	15		3.0		ug/L			09/23/16 17:54	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/23/16 17:54	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 17:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		65 - 143		09/23/16 17:54	1
4-Bromofluorobenzene (Surr)	97		75 - 125		09/23/16 17:54	1
Toluene-d8 (Surr)	100		82 - 122		09/23/16 17:54	1
Trifluorotoluene (Surr)	102		80 - 141		09/23/16 17:54	1
Dibromofluoromethane (Surr)	89		77 - 118		09/23/16 17:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2200		50		ug/L			09/22/16 23:14	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	206	X	50 - 150		09/22/16 23:14	1			
Trifluorotoluene (Surr)	106		50 - 150		09/22/16 23:14	1			

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.3		2.0		ug/L		09/28/16 15:36	09/29/16 13:40	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.4		2.0		ug/L		10/03/16 15:07	10/05/16 18:27	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-5
Date Collected: 09/20/16 12:50
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 18:23	1
Toluene	ND		2.0		ug/L			09/23/16 18:23	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 18:23	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/23/16 18:23	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		65 - 143		09/23/16 18:23	1
4-Bromofluorobenzene (Surr)	96		75 - 125		09/23/16 18:23	1
Toluene-d8 (Surr)	99		82 - 122		09/23/16 18:23	1
Trifluorotoluene (Surr)	102		80 - 141		09/23/16 18:23	1
Dibromofluoromethane (Surr)	93		77 - 118		09/23/16 18:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	270		50		ug/L			09/22/16 23:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		50 - 150		09/22/16 23:46	1
Trifluorotoluene (Surr)	105		50 - 150		09/22/16 23:46	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:45	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:31	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-6
Date Collected: 09/20/16 11:30
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 18:52	1
Toluene	ND		2.0		ug/L			09/23/16 18:52	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 18:52	1
Methyl tert-butyl ether	1.3		1.0		ug/L			09/23/16 18:52	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 18:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		65 - 143		09/23/16 18:52	1
4-Bromofluorobenzene (Surr)	96		75 - 125		09/23/16 18:52	1
Toluene-d8 (Surr)	99		82 - 122		09/23/16 18:52	1
Trifluorotoluene (Surr)	103		80 - 141		09/23/16 18:52	1
Dibromofluoromethane (Surr)	93		77 - 118		09/23/16 18:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	84		50		ug/L			09/23/16 00:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/23/16 00:19	1
Trifluorotoluene (Surr)	103		50 - 150		09/23/16 00:19	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:36	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-7
Date Collected: 09/20/16 12:25
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 19:20	1
Toluene	ND		2.0		ug/L			09/23/16 19:20	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 19:20	1
Methyl tert-butyl ether	3.0		1.0		ug/L			09/23/16 19:20	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 19:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		65 - 143		09/23/16 19:20	1
4-Bromofluorobenzene (Surr)	96		75 - 125		09/23/16 19:20	1
Toluene-d8 (Surr)	100		82 - 122		09/23/16 19:20	1
Trifluorotoluene (Surr)	101		80 - 141		09/23/16 19:20	1
Dibromofluoromethane (Surr)	92		77 - 118		09/23/16 19:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/23/16 00:51	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	94		50 - 150		09/23/16 00:51	1			
Trifluorotoluene (Surr)	103		50 - 150		09/23/16 00:51	1			

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:40	5

Client Sample Results

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-8
Date Collected: 09/20/16 13:30
Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 19:49	1
Toluene	ND		2.0		ug/L			09/23/16 19:49	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 19:49	1
Methyl tert-butyl ether	8.6		1.0		ug/L			09/23/16 19:49	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 19:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		65 - 143		09/23/16 19:49	1
4-Bromofluorobenzene (Surr)	96		75 - 125		09/23/16 19:49	1
Toluene-d8 (Surr)	99		82 - 122		09/23/16 19:49	1
Trifluorotoluene (Surr)	102		80 - 141		09/23/16 19:49	1
Dibromofluoromethane (Surr)	93		77 - 118		09/23/16 19:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/23/16 01:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		09/23/16 01:23	1
Trifluorotoluene (Surr)	101		50 - 150		09/23/16 01:23	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 13:58	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 18:45	5

QC Sample Results

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

TestAmerica Job ID: 580-62677-1

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

Lab Sample ID: MB 580-228195/4

Matrix: Water

Analysis Batch: 228195

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			09/23/16 14:34	1
Toluene	ND		2.0		ug/L			09/23/16 14:34	1
Ethylbenzene	ND		3.0		ug/L			09/23/16 14:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/23/16 14:34	1
Xylenes, Total	ND		3.0		ug/L			09/23/16 14:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		65 - 143		09/23/16 14:34	1
4-Bromofluorobenzene (Surr)	95		75 - 125		09/23/16 14:34	1
Toluene-d8 (Surr)	99		82 - 122		09/23/16 14:34	1
Trifluorotoluene (Surr)	102		80 - 141		09/23/16 14:34	1
Dibromofluoromethane (Surr)	90		77 - 118		09/23/16 14:34	1

Lab Sample ID: LCS 580-228195/5

Matrix: Water

Analysis Batch: 228195

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	10.9		ug/L		108	80 - 120
Toluene	10.0	10.2		ug/L		102	75 - 120
Ethylbenzene	10.0	10.5		ug/L		105	75 - 119
m-Xylene & p-Xylene	10.0	9.93		ug/L		99	75 - 119
o-Xylene	10.0	10.0		ug/L		100	74 - 120
Methyl tert-butyl ether	10.0	11.0		ug/L		110	65 - 125
Xylenes, Total	20.0	19.9		ug/L		99	75 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	91		65 - 143
4-Bromofluorobenzene (Surr)	97		75 - 125
Toluene-d8 (Surr)	101		82 - 122
Trifluorotoluene (Surr)	102		80 - 141
Dibromofluoromethane (Surr)	93		77 - 118

Lab Sample ID: LCSD 580-228195/6

Matrix: Water

Analysis Batch: 228195

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	11.1		ug/L		111	80 - 120	2	14
Toluene	10.0	10.2		ug/L		101	75 - 120	1	19
Ethylbenzene	10.0	10.6		ug/L		106	75 - 119	1	14
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	75 - 119	1	14
o-Xylene	10.0	10.1		ug/L		100	74 - 120	0	16
Methyl tert-butyl ether	10.0	10.8		ug/L		108	65 - 125	2	18
Xylenes, Total	20.0	20.1		ug/L		100	75 - 119	1	15

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-62677-1

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

Lab Sample ID: LCSD 580-228195/6
Matrix: Water
Analysis Batch: 228195

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	91		65 - 143
4-Bromofluorobenzene (Surr)	98		75 - 125
Toluene-d8 (Surr)	101		82 - 122
Trifluorotoluene (Surr)	100		80 - 141
Dibromofluoromethane (Surr)	95		77 - 118

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

Lab Sample ID: MB 580-228051/8
Matrix: Water
Analysis Batch: 228051

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			09/22/16 11:55	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	95		50 - 150		09/22/16 11:55	1
Trifluorotoluene (Surr)	106		50 - 150		09/22/16 11:55	1

Lab Sample ID: LCS 580-228051/9
Matrix: Water
Analysis Batch: 228051

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1160	1080		ug/L		93	79 - 110

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	102		50 - 150
Trifluorotoluene (Surr)	109		50 - 150

Lab Sample ID: LCSD 580-228051/10
Matrix: Water
Analysis Batch: 228051

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	1160	1090		ug/L		93	79 - 110	1	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	101		50 - 150
Trifluorotoluene (Surr)	110		50 - 150

QC Sample Results

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

TestAmerica Job ID: 580-62677-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 580-228905/22-A
Matrix: Water
Analysis Batch: 229166

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		10/03/16 15:07	10/05/16 14:16	5

Lab Sample ID: LCS 580-228905/23-A
Matrix: Water
Analysis Batch: 229166

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1000	957		ug/L		96	80 - 120

Lab Sample ID: LCSD 580-228905/24-A
Matrix: Water
Analysis Batch: 229166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	1000	958		ug/L		96	80 - 120	0	20

Lab Sample ID: 580-62677-1 MS
Matrix: Water
Analysis Batch: 229166

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1000	1070		ug/L		107	80 - 120

Lab Sample ID: 580-62677-1 MSD
Matrix: Water
Analysis Batch: 229166

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1000	1040		ug/L		104	80 - 120	2	20

Lab Sample ID: 580-62677-1 DU
Matrix: Water
Analysis Batch: 229166

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 228905

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		1000	ND		ug/L				NC	20

Method: 6020 - Dissolved Metals by ICP-MS

Lab Sample ID: LCS 580-228567/13-A
Matrix: Water
Analysis Batch: 228706

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 228567

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1000	940		ug/L		94	80 - 120

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-62677-1

Method: 6020 - Dissolved Metals by ICP-MS (Continued)

Lab Sample ID: LCSD 580-228567/14-A
Matrix: Water
Analysis Batch: 228706

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 228567

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1000	935		ug/L		93	80 - 120	1	20

Lab Sample ID: MB 580-228103/9-B
Matrix: Water
Analysis Batch: 228706

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 228567

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		09/28/16 15:36	09/29/16 12:37	5

Lab Sample ID: 580-62677-2 MS
Matrix: Water
Analysis Batch: 228706

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 228567

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1000	965		ug/L		97	80 - 120

Lab Sample ID: 580-62677-2 MSD
Matrix: Water
Analysis Batch: 228706

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 228567

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1000	987		ug/L		99	80 - 120	2	20

Lab Sample ID: 580-62677-2 DU
Matrix: Water
Analysis Batch: 228706

Client Sample ID: MW-2
Prep Type: Dissolved
Prep Batch: 228567

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

Lab Chronicle

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-1

Date Collected: 09/20/16 10:20

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 16:28	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/22/16 21:37	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:31	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 14:35	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 09/20/16 10:55

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 16:57	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/22/16 22:09	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 12:55	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:18	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 09/20/16 14:10

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 17:26	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/22/16 22:41	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:36	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:22	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 09/20/16 12:05

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 17:54	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/22/16 23:14	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-4

Date Collected: 09/20/16 12:05

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:40	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:27	FCW	TAL SEA

Client Sample ID: MW-5

Date Collected: 09/20/16 12:50

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 18:23	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/22/16 23:46	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:45	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:31	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 09/20/16 11:30

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 18:52	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/23/16 00:19	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:49	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:36	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 09/20/16 12:25

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 19:20	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/23/16 00:51	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:54	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:40	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-62677-1

Client Sample ID: MW-8

Date Collected: 09/20/16 13:30

Date Received: 09/22/16 09:35

Lab Sample ID: 580-62677-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	228195	09/23/16 19:49	TL1	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	228051	09/23/16 01:23	W1T	TAL SEA
Dissolved	Filtration	FILTRATION			228103	09/22/16 15:03	MKN	TAL SEA
Dissolved	Prep	3005A			228567	09/28/16 15:36	MKN	TAL SEA
Dissolved	Analysis	6020		5	228706	09/29/16 13:58	FCW	TAL SEA
Total Recoverable	Prep	3005A			228905	10/03/16 15:07	MKN	TAL SEA
Total Recoverable	Analysis	6020		5	229166	10/05/16 18:45	FCW	TAL SEA

Laboratory References:

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

Certification Summary

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

TestAmerica Job ID: 580-62677-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-17

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

Analysis Method	Prep Method	Matrix	Analyte
6020	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: Former ARCO 5300

TestAmerica Job ID: 580-62677-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-62677-1	MW-1	Water	09/20/16 10:20	09/22/16 09:35
580-62677-2	MW-2	Water	09/20/16 10:55	09/22/16 09:35
580-62677-3	MW-3	Water	09/20/16 14:10	09/22/16 09:35
580-62677-4	MW-4	Water	09/20/16 12:05	09/22/16 09:35
580-62677-5	MW-5	Water	09/20/16 12:50	09/22/16 09:35
580-62677-6	MW-6	Water	09/20/16 11:30	09/22/16 09:35
580-62677-7	MW-7	Water	09/20/16 12:25	09/22/16 09:35
580-62677-8	MW-8	Water	09/20/16 13:30	09/22/16 09:35

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BP/ARC Project Name: Former ARCO 5300 Reg Due Date (mm/dd/yy): Standard TAT Rush TAT: Yes No
 BP/ARC Facility No: Former ARCO Facility No. 5300 Lab Work Order Number: _____

Lab Name: Test America, Inc. 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: 05300EA161

Lab PM: Robert Greer Lead Regulatory Agency: Washington State Department of Ecology Address: 4006 148th Ave NE, Redmond, WA 98052

Lab Phone: 253-922-2310 California Global ID No.: NA Consultant/Contractor PM: Mackie Stock

Lab Shipping Acct: Entos Proposal No: 00855-0005/WR297058 Phone: 425-498-7740

Lab Bottle Order No: Accounting Mode: Provision OOC-BU OOC-RM Email EDD To: mackie.stock@anteagroup.com

Other Info: Stage: execute Activity: project spend Invoice To: BP/ARC X Contractor: _____

BP/ARC EBM: Chuck Carmel Matrix: _____ Requested Analyses: Pb-T by EPA 6010 Pb-D by EPA 6010 EDB by EPA 8011 EDC by EPA 8260B Report Type & QC Level: _____

EBM Phone: (657) 529-4503 Matrix: _____ Requested Analyses: Standard X w/ Access

EBM Email: charles.carmel@bp.com Matrix: _____ Requested Analyses: 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 S ₂ O ₃	BTEX	MTBE	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 6010	Pb-D by EPA 6010	EDB by EPA 8011	EDC by EPA 8260B	Comments	
MW-1		9/20/10	1620				8																
MW-2			1655				8																
MW-3			1410				8																
MW-4			1205				8																
MW-5			1250				8																
MW-6			1130				8																
MW-7			1225				8																
MW-8		9/20/10	1330				8																
							8																
Sampler's Name: <u>Missy Trooy / Brad Jackson</u>		Relinquished By / Affiliation		Date		Time		Accepted By / Affiliation		Date		Time											
Sampler's Company: <u>Antea Group</u>		<u>Missy Trooy / Antea</u>		<u>9/21/10 1100</u>		<u>B. Stule</u>		<u>SEA TA</u>		<u>9-22-10</u>		<u>0935</u>											
Shipment Method: <u>FedEx</u>		Ship Date: <u>9/21/10</u>																					
Shipment Tracking No:																							
Special Instructions: <u>Lead samples need to be lab filtered. Total lead is preserved; dissolved is unpreserved.</u> TBAT Cooler Cor 2.1 Unc 2.3 Cooler Discs Rins @ Lab W/Packs Packing Room Fed St. O.A. W/10																							
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																							



580-62677 Chain of Custody

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-62677-1

Login Number: 62677

List Source: TestAmerica Seattle

List Number: 1

Creator: Gall, Brandon A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	Not present
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 <math><6\text{mm}</math> (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: 580-65112-1
Client Project/Site: ARCO 5300

For:
Antea USA, Inc.
4640 SW Macadam Ave
Portland, Oregon 97239

Attn: Brad Jackson

M. Elaine Walker

Authorized for release by:
1/8/2017 5:42:56 PM

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

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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.

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Case Narrative

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

TestAmerica Job ID: 580-65112-1

Job ID: 580-65112-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-65112-1

Receipt

Nine samples were received on 12/29/2016 10:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° C.

GC/MS VOA

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

GC VOA

The 4-Bromofluorbenzene surrogate recovery for the following sample was outside control limits: MW-4 (580-65112-4). Evidence of matrix interference present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described 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: ARCO 5300

TestAmerica Job ID: 580-65112-1

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.
▫	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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: ARCO 5300

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-1
Date Collected: 12/28/16 10:30
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 18:21	1
Toluene	ND		2.0		ug/L			12/30/16 18:21	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 18:21	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 18:21	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 18:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		65 - 143		12/30/16 18:21	1
4-Bromofluorobenzene (Surr)	98		75 - 125		12/30/16 18:21	1
Toluene-d8 (Surr)	102		82 - 122		12/30/16 18:21	1
Trifluorotoluene (Surr)	97		80 - 141		12/30/16 18:21	1
Dibromofluoromethane (Surr)	101		77 - 118		12/30/16 18:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 15:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150		01/04/17 15:23	1
Trifluorotoluene (Surr)	100		50 - 150		01/04/17 15:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/30/16 23:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 19:05	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-2
Date Collected: 12/28/16 10:05
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 18:48	1
Toluene	ND		2.0		ug/L			12/30/16 18:48	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 18:48	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 18:48	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 18:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		65 - 143		12/30/16 18:48	1
4-Bromofluorobenzene (Surr)	98		75 - 125		12/30/16 18:48	1
Toluene-d8 (Surr)	102		82 - 122		12/30/16 18:48	1
Trifluorotoluene (Surr)	97		80 - 141		12/30/16 18:48	1
Dibromofluoromethane (Surr)	101		77 - 118		12/30/16 18:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		01/04/17 15:55	1
Trifluorotoluene (Surr)	99		50 - 150		01/04/17 15:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 19:46	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-3
Date Collected: 12/28/16 13:30
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 19:15	1
Toluene	ND		2.0		ug/L			12/30/16 19:15	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 19:15	1
Methyl tert-butyl ether	13		1.0		ug/L			12/30/16 19:15	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 19:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		65 - 143		12/30/16 19:15	1
4-Bromofluorobenzene (Surr)	97		75 - 125		12/30/16 19:15	1
Toluene-d8 (Surr)	104		82 - 122		12/30/16 19:15	1
Trifluorotoluene (Surr)	95		80 - 141		12/30/16 19:15	1
Dibromofluoromethane (Surr)	100		77 - 118		12/30/16 19:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 16:27	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	93		50 - 150		01/04/17 16:27	1			
Trifluorotoluene (Surr)	97		50 - 150		01/04/17 16:27	1			

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 19:50	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-4
Date Collected: 12/28/16 12:00
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 19:41	1
Toluene	ND		2.0		ug/L			12/30/16 19:41	1
Ethylbenzene	39		3.0		ug/L			12/30/16 19:41	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 19:41	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 19:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		65 - 143		12/30/16 19:41	1
4-Bromofluorobenzene (Surr)	98		75 - 125		12/30/16 19:41	1
Toluene-d8 (Surr)	105		82 - 122		12/30/16 19:41	1
Trifluorotoluene (Surr)	97		80 - 141		12/30/16 19:41	1
Dibromofluoromethane (Surr)	100		77 - 118		12/30/16 19:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	2.3		0.050		mg/L			01/04/17 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	234	X	50 - 150		01/04/17 17:00	1
Trifluorotoluene (Surr)	106		50 - 150		01/04/17 17:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0059		0.0020		mg/L		12/30/16 10:18	12/31/16 00:25	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0051		0.0020		mg/L		01/03/17 09:26	01/03/17 19:55	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-5
Date Collected: 12/28/16 10:55
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 20:08	1
Toluene	ND		2.0		ug/L			12/30/16 20:08	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 20:08	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 20:08	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		65 - 143		12/30/16 20:08	1
4-Bromofluorobenzene (Surr)	96		75 - 125		12/30/16 20:08	1
Toluene-d8 (Surr)	104		82 - 122		12/30/16 20:08	1
Trifluorotoluene (Surr)	96		80 - 141		12/30/16 20:08	1
Dibromofluoromethane (Surr)	99		77 - 118		12/30/16 20:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.48		0.050		mg/L			01/04/17 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		50 - 150		01/04/17 17:32	1
Trifluorotoluene (Surr)	98		50 - 150		01/04/17 17:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 19:59	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-6
Date Collected: 12/28/16 11:25
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 20:35	1
Toluene	ND		2.0		ug/L			12/30/16 20:35	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 20:35	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 20:35	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 20:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		65 - 143		12/30/16 20:35	1
4-Bromofluorobenzene (Surr)	97		75 - 125		12/30/16 20:35	1
Toluene-d8 (Surr)	104		82 - 122		12/30/16 20:35	1
Trifluorotoluene (Surr)	95		80 - 141		12/30/16 20:35	1
Dibromofluoromethane (Surr)	100		77 - 118		12/30/16 20:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.097		0.050		mg/L			01/04/17 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		50 - 150		01/04/17 18:04	1
Trifluorotoluene (Surr)	96		50 - 150		01/04/17 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 20:03	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-7
Date Collected: 12/28/16 12:35
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 21:01	1
Toluene	ND		2.0		ug/L			12/30/16 21:01	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 21:01	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 21:01	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 21:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		65 - 143		12/30/16 21:01	1
4-Bromofluorobenzene (Surr)	99		75 - 125		12/30/16 21:01	1
Toluene-d8 (Surr)	103		82 - 122		12/30/16 21:01	1
Trifluorotoluene (Surr)	97		80 - 141		12/30/16 21:01	1
Dibromofluoromethane (Surr)	101		77 - 118		12/30/16 21:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 19:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		01/04/17 19:41	1
Trifluorotoluene (Surr)	96		50 - 150		01/04/17 19:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:39	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 20:08	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-8
Date Collected: 12/28/16 13:00
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 21:27	1
Toluene	ND		2.0		ug/L			12/30/16 21:27	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 21:27	1
Methyl tert-butyl ether	1.2		1.0		ug/L			12/30/16 21:27	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 21:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		65 - 143		12/30/16 21:27	1
4-Bromofluorobenzene (Surr)	96		75 - 125		12/30/16 21:27	1
Toluene-d8 (Surr)	104		82 - 122		12/30/16 21:27	1
Trifluorotoluene (Surr)	96		80 - 141		12/30/16 21:27	1
Dibromofluoromethane (Surr)	99		77 - 118		12/30/16 21:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 20:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		01/04/17 20:13	1
Trifluorotoluene (Surr)	96		50 - 150		01/04/17 20:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		12/30/16 10:18	12/31/16 00:30	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 20:12	5

Client Sample Results

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: TB
Date Collected: 12/28/16 00:01
Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 16:10	1
Toluene	ND		2.0		ug/L			12/30/16 16:10	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 16:10	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 16:10	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 16:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		65 - 143		12/30/16 16:10	1
4-Bromofluorobenzene (Surr)	92		75 - 125		12/30/16 16:10	1
Toluene-d8 (Surr)	106		82 - 122		12/30/16 16:10	1
Trifluorotoluene (Surr)	93		80 - 141		12/30/16 16:10	1
Dibromofluoromethane (Surr)	99		77 - 118		12/30/16 16:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 19:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		01/04/17 19:09	1
Trifluorotoluene (Surr)	97		50 - 150		01/04/17 19:09	1

QC Sample Results

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

TestAmerica Job ID: 580-65112-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-235636/5

Matrix: Water

Analysis Batch: 235636

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			12/30/16 13:12	1
Toluene	ND		2.0		ug/L			12/30/16 13:12	1
Ethylbenzene	ND		3.0		ug/L			12/30/16 13:12	1
Methyl tert-butyl ether	ND		1.0		ug/L			12/30/16 13:12	1
Xylenes, Total	ND		3.0		ug/L			12/30/16 13:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		65 - 143		12/30/16 13:12	1
4-Bromofluorobenzene (Surr)	95		75 - 125		12/30/16 13:12	1
Toluene-d8 (Surr)	105		82 - 122		12/30/16 13:12	1
Trifluorotoluene (Surr)	94		80 - 141		12/30/16 13:12	1
Dibromofluoromethane (Surr)	99		77 - 118		12/30/16 13:12	1

Lab Sample ID: LCS 580-235636/6

Matrix: Water

Analysis Batch: 235636

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	10.6		ug/L		106	80 - 120
Toluene	10.0	10.8		ug/L		107	75 - 120
Ethylbenzene	10.0	10.1		ug/L		101	75 - 119
Methyl tert-butyl ether	10.0	10.4		ug/L		104	65 - 125
Xylenes, Total	20.0	20.2		ug/L		101	75 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		65 - 143
4-Bromofluorobenzene (Surr)	94		75 - 125
Toluene-d8 (Surr)	106		82 - 122
Trifluorotoluene (Surr)	93		80 - 141
Dibromofluoromethane (Surr)	100		77 - 118

Lab Sample ID: LCSD 580-235636/7

Matrix: Water

Analysis Batch: 235636

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	10.3		ug/L		102	80 - 120	4	14
Toluene	10.0	10.3		ug/L		103	75 - 120	4	19
Ethylbenzene	10.0	9.57		ug/L		95	75 - 119	6	14
Methyl tert-butyl ether	10.0	10.5		ug/L		105	65 - 125	1	18
Xylenes, Total	20.0	19.7		ug/L		98	75 - 119	3	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		65 - 143
4-Bromofluorobenzene (Surr)	94		75 - 125
Toluene-d8 (Surr)	105		82 - 122
Trifluorotoluene (Surr)	93		80 - 141

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-65112-1

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

Lab Sample ID: LCSD 580-235636/7
Matrix: Water
Analysis Batch: 235636

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	102		77 - 118

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

Lab Sample ID: MB 580-235818/6
Matrix: Water
Analysis Batch: 235818

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			01/04/17 11:44	1
Surrogate	MB MB		Limits			Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier	Unit		D					
4-Bromofluorobenzene (Surr)	95		50 - 150				01/04/17 11:44	1	
Trifluorotoluene (Surr)	98		50 - 150				01/04/17 11:44	1	

Lab Sample ID: LCS 580-235818/7
Matrix: Water
Analysis Batch: 235818

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Gasoline	1.16	1.07		mg/L		92	79 - 110	
Surrogate	LCS LCS		Limits			Prepared	Analyzed	Dil Fac
%Recovery	Qualifier	Unit		D				
4-Bromofluorobenzene (Surr)	100		50 - 150					
Trifluorotoluene (Surr)	100		50 - 150					

Lab Sample ID: LCSD 580-235818/8
Matrix: Water
Analysis Batch: 235818

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	1.16	1.11		mg/L		95	79 - 110	3	20
Surrogate	LCSD LCSD		Limits			Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier	Unit		D					
4-Bromofluorobenzene (Surr)	100		50 - 150						
Trifluorotoluene (Surr)	102		50 - 150						

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 580-235609/17-A
Matrix: Water
Analysis Batch: 235674

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 235609

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00040		mg/L		12/30/16 10:18	12/30/16 23:22	1

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-65112-1

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

Lab Sample ID: LCS 580-235609/18-A
Matrix: Water
Analysis Batch: 235674

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 235609

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	0.986		mg/L		99	80 - 120

Lab Sample ID: LCSD 580-235609/19-A
Matrix: Water
Analysis Batch: 235674

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 235609

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.979		mg/L		98	80 - 120	1	20

Lab Sample ID: 580-65112-1 MS
Matrix: Water
Analysis Batch: 235674

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 235609

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	ND		1.00	1.08		mg/L		108	80 - 120

Lab Sample ID: 580-65112-1 MSD
Matrix: Water
Analysis Batch: 235674

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 235609

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	ND		1.00	1.07		mg/L		107	80 - 120	1	20

Lab Sample ID: 580-65112-1 DU
Matrix: Water
Analysis Batch: 235674

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 235609

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

Lab Sample ID: LCS 580-235678/13-A
Matrix: Water
Analysis Batch: 235761

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 235678

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lead	1.00	0.926		mg/L		93	80 - 120

Lab Sample ID: LCSD 580-235678/14-A
Matrix: Water
Analysis Batch: 235761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 235678

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	1.00	0.932		mg/L		93	80 - 120	1	20

Lab Sample ID: MB 580-235553/9-B
Matrix: Water
Analysis Batch: 235761

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 235678

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0020		mg/L		01/03/17 09:26	01/03/17 18:52	5

TestAmerica Seattle

QC Sample Results

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

TestAmerica Job ID: 580-65112-1

Lab Sample ID: 580-65112-1 MS
Matrix: Water
Analysis Batch: 235761

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 235678
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	ND		1.00	1.03		mg/L		103	80 - 120

Lab Sample ID: 580-65112-1 MSD
Matrix: Water
Analysis Batch: 235761

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 235678
%Rec.

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

Lab Sample ID: 580-65112-1 DU
Matrix: Water
Analysis Batch: 235761

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 235678
%Rec.

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

- 1
- 2
- 3
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- 10
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Lab Chronicle

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-1

Date Collected: 12/28/16 10:30

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 18:21	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 15:23	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 19:05	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/30/16 23:35	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 12/28/16 10:05

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 18:48	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 15:55	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 19:46	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:16	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 12/28/16 13:30

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 19:15	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 16:27	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 19:50	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:21	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 12/28/16 12:00

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 19:41	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 17:00	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-4

Date Collected: 12/28/16 12:00

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 19:55	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:25	FCW	TAL SEA

Client Sample ID: MW-5

Date Collected: 12/28/16 10:55

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 20:08	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 17:32	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 19:59	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:43	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 12/28/16 11:25

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 20:35	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 18:04	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 20:03	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:34	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 12/28/16 12:35

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 21:01	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 19:41	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 20:08	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:39	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

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

TestAmerica Job ID: 580-65112-1

Client Sample ID: MW-8

Date Collected: 12/28/16 13:00

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 21:27	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 20:13	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			235553	12/29/16 13:30	ADB	TAL SEA
Dissolved	Prep	3005A			235678	01/03/17 09:26	MKN	TAL SEA
Dissolved	Analysis	6020A		5	235761	01/03/17 20:12	FCW	TAL SEA
Total Recoverable	Prep	3005A			235609	12/30/16 10:18	MKN	TAL SEA
Total Recoverable	Analysis	6020A		5	235674	12/31/16 00:30	FCW	TAL SEA

Client Sample ID: TB

Date Collected: 12/28/16 00:01

Date Received: 12/29/16 10:10

Lab Sample ID: 580-65112-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	235636	12/30/16 16:10	J1J	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	235818	01/04/17 19:09	D1R	TAL SEA

Laboratory References:

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

Certification Summary

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

TestAmerica Job ID: 580-65112-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	WA100007	11-05-17

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	Xylenes, Total

- 1
- 2
- 3
- 4
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- 10
- 11

Sample Summary

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

TestAmerica Job ID: 580-65112-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-65112-1	MW-1	Water	12/28/16 10:30	12/29/16 10:10
580-65112-2	MW-2	Water	12/28/16 10:05	12/29/16 10:10
580-65112-3	MW-3	Water	12/28/16 13:30	12/29/16 10:10
580-65112-4	MW-4	Water	12/28/16 12:00	12/29/16 10:10
580-65112-5	MW-5	Water	12/28/16 10:55	12/29/16 10:10
580-65112-6	MW-6	Water	12/28/16 11:25	12/29/16 10:10
580-65112-7	MW-7	Water	12/28/16 12:35	12/29/16 10:10
580-65112-8	MW-8	Water	12/28/16 13:00	12/29/16 10:10
580-65112-9	TB	Water	12/28/16 00:01	12/29/16 10:10

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Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: Former ARCO 5300

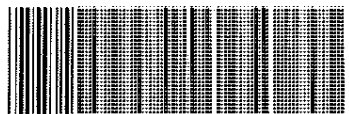
Req Due Date (mm/dd/yy): Standart TAT Rush TAT: Yes No

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

Lab Work Order Number: 65112

Lab Name: Test America, Inc.	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: 05300EA161
Lab PM: Robert Greer	Lead Regulatory Agency: Washington State Department of Ecology	Address: 4006 148th Ave NE, Redmond, WA 98052
Lab Phone: 253-922-2310	California Global ID No.: NA	Consultant/Contractor PM: Mackie Stock
Lab Shipping Acct:	Enfos Proposal No: <u>00944 - 0001 / WR 309951</u>	Phone: 425-498-7740
Lab Bottle Order No:	Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: <u>mackie.stock@anteagroup.com</u>
Other Info:	Stage: <u>20</u> Activity: <u>100</u>	Invoice To: BP/ARC <input checked="" type="checkbox"/> Contractor <input type="checkbox"/>

BP/ARC EBM: Chuck Carmel	Matrix	No. Containers / Preservative	Requested Analyses	Report Type & QC Level
EBM Phone: (657) 529-4503				Standard <input checked="" type="checkbox"/> w/ Access
EBM Email: <u>charles.carmel@bp.com</u>				Full Data Package <input type="checkbox"/>

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 S ₂ O ₃	BTEX	MTBE	NWTPH-GX	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 6010	Pb-D by EPA 6010	EDB by EPA 8011	EDC by EPA 8260B	Comments
MW-1		12/28/16	1030		x		8						x	x	x			x	x			
MW-2			1005		x		8						x	x	x			x	x			 580-65112 Chain of Custody
MW-3			1330		x		8						x	x	x			x	x			
MW-4			1200		x		8						x	x	x			x	x			
MW-5			1055		x		8						x	x	x			x	x			
MW-6			1125		x		8						x	x	x			x	x			TB A2 Cooler Cor 0.2 wks Cooler Dsc Lg Blue @Lab Wet Packs Packing bub FedSO
MW-7			1235		x		8						x	x	x			x	x			
MW-8		12/28/16	1300		x		8						x	x	x			x	x			
TB					x		6						x		x							

Sampler's Name: <u>Brad Jackson</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: Antea Group	<u>Antea Group</u>		<u>12/28/16</u>	<u>1500</u>	<u>Tom Blum / TA-Sea</u>		<u>12/29/16</u>	<u>1010</u>
Shipment Method: <u>FedEx</u>	Ship Date: <u>12/28/16</u>							
Shipment Tracking No:								

Special Instructions:

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: 580-65112-1

Login Number: 65112

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

