# Remediation Management Services Company

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

January 30, 2019

Washington Department of Ecology
Northwest Regional Office
Attn: VCP Coordinator
3190 160th Avenue SE
Bellevue, WA 98008-5452

Dear VCP Coordinator:

Please find the enclosed Semi-Annual Groundwater Monitoring Report - Second Half of 2018, that documents the results at ARCO Facility No. 818 located at 3201 20th Avenue W, Seattle, Washington.

Sincerely yours,

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

cc: File, Antea Group

# Semi-Annual Groundwater Monitoring Report

Second Half of 2018
ARCO Facility No. 818
3201 20th Avenue W, Seattle, Washington

Antea®Group

Understanding today.
Improving tomorrow.

**PREPARED FOR**
Remediation Management Services Company
An affiliate of Atlantic Richfield Company
4 Centerpointe Drive, Suite 200
Room LPR-4-222
La Palma, CA 90623

January 30, 2019
Antea Group Project No. 00818AA181

us.anteagroup.com

The logo and ANTEA are registration trademarks of Antea USA, Inc.

| | |
|---|---|
| **ARCO Facility No.:** | 818 |
| **Address:** | 3201 20th Avenue W, Seattle, Washington |
| **Atlantic Richfield Project Manager:** | Wade Melton, (360) 594-7978 |
| **Consulting Co. /Contact Person:** | Antea Group / Taylor Roberts, (425) 498-7712 |
| **Consultant Project Number:** | 00818AA181 |
| **Primary Agency/Regulatory FS ID No.:** | Washington State Department of Ecology / 4394612 |

**WORK PERFORMED DURING SECOND HALF OF 2018:**

- Antea Group conducted semi-annual groundwater monitoring and sampling on September 13, 2018.
- Antea Group prepared this semi-annual groundwater monitoring report.

**WORK SCHEDULED FOR FIRST HALF OF 2019:**

- Antea Group will conduct semi-annual groundwater monitoring and sampling.
- Antea Group will prepare a semi-annual groundwater monitoring report.
- Antea Group will complete a Subsurface Investigation at the site.

| | |
|---|---|
| Current Phase of Project: | **Monitoring** |
| Frequency of Groundwater Sampling and Monitoring: | **Semi-annually** |
| Are LPH Present On-Site/Off-Site: | **No** |
| LPH Recovered this Reporting Period: | **None** |
| Cumulative LPH Recovered to Date: | **None** |
| Amount of Soil Removed to Date: | **2.19 tons (Subsurface Investigation 2003)** |
| Current Remediation Techniques: | **Natural Attenuation** |
| Approximate Depth to Groundwater: | **9/13/2018: 12.35 to 23.24 ft.** |
| Groundwater Gradient: | **9/13/2018: Northeast** |
| | **9/13/2018: 0.07 ft./linear ft.** |

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

Prepared by

Marissa Bernard

Date: January 30, 2019

Marissa Bernard
Staff Professional

Reviewed by:

Date: January 30, 2019

Taylor Roberts
Project Manager

State of Washington
3157
Licensed Geologist
MEGAN RICHARD

Date: January 30, 2019

Megan Richard, LG
Project Manager

cc: VCP Coordinator, Department of Ecology, Northwest Regional Office (Hardcopy, Electronic Copy)
Mr. Wade Melton, Remediation Management Services Company (Electronic Copy - RMO Upload)
File, Antea Group

# Contact Information

4006 148th Avenue NE
Redmond, WA 98052 USA

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

# Enclosures

### *Tables*

Table 1 Groundwater Gauging Data
Table 2 Groundwater Analytical Data

### *Figures*

Figure 1 Site Location Map
Figure 2 Site Aerial Map
Figure 3 Groundwater Analytical and Elevation Contour Map - 9/13/2018

### *Appendix*

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

# Tables

Table 1 Groundwater Gauging Data

Table 2 Groundwater Analytical Data

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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 | 5/1/2003 | 101.85 | 14.15 | NP | -- | 87.70 | -- |
| MW-1 | 7/31/2003 | 101.85 | 14.70 | NP | -- | 87.15 | -- |
| MW-1 | 10/2/2003 | 101.85 | 15.05 | NP | -- | 86.80 | -- |
| MW-1 | 2/18/2004 | 101.85 | 13.71 | NP | -- | 88.14 | -- |
| MW-1 | 7/29/2004 | 101.85 | 14.02 | NP | -- | 87.83 | -- |
| MW-1 | 1/28/2005 | 101.85 | 15.56 | NP | -- | 86.29 | -- |
| MW-1 | 6/17/2005 | 101.85 | 14.24 | NP | -- | 87.61 | -- |
| MW-1 | 8/22/2005 | 101.85 | 14.62 | NP | -- | 87.23 | -- |
| MW-1 | 11/9/2005 | 101.85 | 15.13 | NP | -- | 86.72 | -- |
| MW-1 | 1/19/2006 | 101.85 | 14.31 | NP | -- | 87.54 | -- |
| MW-1 | 4/12/2006 | 101.85 | 14.33 | NP | -- | 87.52 | -- |
| MW-1 | 7/12/2006 | 101.85 | 15.27 | NP | -- | 86.58 | -- |
| MW-1 | 3/9/2007 | 101.85 | 13.52 | NP | -- | 88.33 | -- |
| MW-1 | 7/3/2007 | 101.85 | 14.39 | NP | -- | 87.46 | -- |
| MW-1 | 2/6/2008 | 101.85 | 14.19 | NP | -- | 87.66 | -- |
| MW-1 | 9/3/2008 | 101.85 | 14.64 | NP | -- | 87.21 | -- |
| MW-1 | 3/12/2009 | 101.85 | 14.43 | NP | -- | 87.42 | -- |
| MW-1 | 8/10/2009 | 101.85 | 14.57 | NP | -- | 87.28 | -- |
| MW-1 | 1/12/2010 | 101.85 | 13.98 | NP | -- | 87.87 | -- |
| MW-1 | 8/27/2010 | 101.85 | 14.26 | NP | -- | 87.59 | -- |
| MW-1 | 11/30/2010 | 101.85 | 14.02 | NP | -- | 87.83 | -- |
| MW-1 | 2/22/2011 | 101.85 | 12.48 | NP | -- | 89.37 | -- |
| MW-1 | 4/26/2011 | 101.85 | 12.54 | NP | -- | 89.31 | -- |
| MW-1 | 7/26/2011 | 101.85 | 13.98 | NP | -- | 87.87 | -- |
| MW-1 | 2/29/2012 | 101.85 | 14.12 | NP | -- | 87.73 | -- |
| MW-1 | 5/9/2012 | 101.85 | 13.74 | NP | -- | 88.11 | -- |
| MW-1 | 8/7/2012 | 101.85 | 14.31 | NP | -- | 87.54 | -- |
| MW-1 | 11/14/2012 | 101.85 | 14.70 | NP | -- | 87.15 | -- |
| MW-1 | 3/11/2013 | 101.85 | 13.18 | NP | -- | 88.67 | -- |
| MW-1 | 9/5/2013 | 101.85 | 14.58 | NP | -- | 87.27 | -- |
| MW-1 | 11/8/2013 | 101.85 | 14.86 | NP | -- | 86.99 | -- |
| MW-1 | 3/3/2014 | 101.85 | 14.38 | NP | -- | 87.47 | -- |
| MW-1 | 7/2/2014 | 57.48 | 13.73 | NP | -- | 43.75 | -- |
| MW-1 | 10/6/2014 | 57.48 | 14.68 | NP | -- | 42.80 | -- |
| MW-1 | 1/7/2015 | 57.48 | 13.95 | NP | -- | 43.53 | -- |
| MW-1 | 8/27/2015 | 57.48 | 14.74 | NP | -- | 42.74 | -- |
| MW-1 | 2/17/2016 | 57.48 | 11.64 | NP | -- | 45.84 | -- |
| MW-1 | 8/25/2016 | 57.48 | 14.54 | NP | -- | 42.94 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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 | 11/1/2016 | 57.48 | 14.49 | NP | -- | 42.99 | -- |
| MW-1 | 2/9/2017 | 57.48 | 12.90 | NP | -- | 44.58 | -- |
| MW-1 | 8/10/2017 | 57.48 | 13.95 | NP | -- | 43.53 | -- |
| MW-1 | 2/15/2018 | 57.48 | 13.00 | NP | -- | 44.48 | -- |
| MW-1 | 9/13/2018 | 57.48 | 14.69 | NP | -- | 42.79 | -- |
| | | | | | | | |
| MW-2 | 5/1/2003 | 97.41 | 11.57 | NP | -- | 85.84 | -- |
| MW-2 | 7/31/2003 | 97.41 | 12.20 | NP | -- | 85.21 | -- |
| MW-2 | 10/2/2003 | 97.41 | 12.72 | NP | -- | 84.69 | -- |
| MW-2 | 2/18/2004 | 97.41 | 11.17 | NP | -- | 86.24 | -- |
| MW-2 | 7/29/2004 | 97.41 | 13.67 | NP | -- | 83.74 | -- |
| MW-2 | 1/28/2005 | 97.41 | 14.98 | NP | -- | 82.43 | -- |
| MW-2 | 6/17/2005 | 97.41 | 16.87 | NP | -- | 80.54 | -- |
| MW-2 | 8/22/2005 | 97.41 | 17.91 | NP | -- | 79.50 | -- |
| MW-2 | 11/9/2005 | 97.41 | 12.79 | NP | -- | 84.62 | -- |
| MW-2 | 1/19/2006 | 97.41 | 11.81 | NP | -- | 85.60 | -- |
| MW-2 | 4/12/2006 | 97.41 | 12.27 | NP | -- | 85.14 | -- |
| MW-2 | 7/12/2006 | 97.41 | 13.62 | NP | -- | 83.79 | -- |
| MW-2 | 3/9/2007 | 97.41 | 11.34 | NP | -- | 86.07 | -- |
| MW-2 | 7/3/2007 | 97.41 | 11.92 | NP | -- | 85.49 | -- |
| MW-2 | 2/6/2008 | 97.41 | 11.63 | NP | -- | 85.78 | -- |
| MW-2 | 9/3/2008 | 97.41 | 12.11 | NP | -- | 85.30 | -- |
| MW-2 | 3/12/2009 | 97.41 | 11.92 | NP | -- | 85.49 | -- |
| MW-2 | 8/10/2009 | 97.41 | 12.10 | NP | -- | 85.31 | -- |
| MW-2 | 1/12/2010 | 97.41 | 12.56 | NP | -- | 84.85 | -- |
| MW-2 | 6/22/2010 | 97.41 | 11.17 | NP | -- | 86.24 | -- |
| MW-2 | 8/27/2010 | 97.41 | 11.80 | NP | -- | 85.61 | -- |
| MW-2 | 11/30/2010 | 97.41 | 11.61 | NP | -- | 85.80 | -- |
| MW-2 | 2/22/2011 | 97.41 | 10.79 | NP | -- | 86.62 | -- |
| MW-2 | 4/26/2011 | 97.41 | 10.72 | NP | -- | 86.69 | -- |
| MW-2 | 7/26/2011 | 97.41 | 11.61 | NP | -- | 85.80 | -- |
| MW-2 | 2/29/2012 | 97.41 | 11.75 | NP | -- | 85.66 | -- |
| MW-2 | 5/9/2012 | 97.41 | 11.27 | NP | -- | 86.14 | -- |
| MW-2 | 8/7/2012 | 97.41 | 11.71 | NP | -- | 85.70 | -- |
| MW-2 | 11/14/2012 | 97.41 | -- | -- | -- | 85.06 | -- |
| MW-2 | 3/11/2013 | 97.41 | 11.15 | NP | -- | 86.26 | -- |
| MW-2 | 9/3/2013 | 97.41 | 12.21 | NP | -- | 85.20 | -- |
| MW-2 | 11/7/2013 | 97.41 | 12.53 | NP | -- | 84.88 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| Well I.D. | Date | GROUNDWATER ELEVATION DATA | | | | | |
|---|---|---|---|---|---|---|---|
| | | TOC Elevation (ft) | Water Level Depth (ft) | LNAPL Depth (ft) | LNAPL Thickness (ft) | Water Level Elevation* (ft) | Qualifiers |
| MW-2 | 3/3/2014 | 97.41 | -- | -- | -- | 85.50 | -- |
| MW-2 | 7/1/2014 | 53.03 | 11.48 | NP | -- | 41.55 | -- |
| MW-2 | 10/6/2014 | 53.03 | 12.34 | NP | -- | 40.69 | -- |
| MW-2 | 1/7/2015 | 53.03 | 11.43 | NP | -- | 41.60 | -- |
| MW-2 | 4/17/2015 | 53.03 | 11.39 | NP | -- | 41.64 | -- |
| MW-2 | 8/27/2015 | 53.03 | 12.35 | NP | -- | 40.68 | -- |
| MW-2 | 2/17/2016 | 53.03 | 10.15 | NP | -- | 42.88 | -- |
| MW-2 | 8/25/2016 | 53.03 | 12.09 | NP | -- | 40.94 | -- |
| MW-2 | 11/1/2016 | 53.03 | 11.91 | NP | -- | 41.12 | -- |
| MW-2 | 2/9/2017 | 53.03 | 10.74 | NP | -- | 42.29 | -- |
| MW-2 | 8/10/2017 | 53.03 | 11.65 | NP | -- | 41.38 | -- |
| MW-2 | 2/15/2018 | 53.03 | 10.62 | NP | -- | 42.41 | -- |
| MW-2 | 9/13/2018 | 53.03 | 12.35 | NP | -- | 40.68 | -- |
| | | | | | | | |
| MW-3 | 5/1/2003 | 94.70 | 14.75 | NP | -- | 79.95 | -- |
| MW-3 | 7/31/2003 | 94.70 | 15.24 | NP | -- | 79.46 | -- |
| MW-3 | 10/2/2003 | 94.70 | -- | -- | -- | 79.00 | -- |
| MW-3 | 2/18/2004 | 94.70 | 14.49 | NP | -- | 80.21 | -- |
| MW-3 | 7/29/2004 | 94.70 | 16.57 | NP | -- | 78.13 | -- |
| MW-3 | 1/28/2005 | 94.70 | 15.41 | NP | -- | 79.29 | -- |
| MW-3 | 6/17/2005 | 94.70 | 15.03 | NP | -- | 79.67 | -- |
| MW-3 | 8/22/2005 | 94.70 | 15.35 | NP | -- | 79.35 | -- |
| MW-3 | 1/19/2006 | 94.70 | 15.27 | NP | -- | 79.43 | -- |
| MW-3 | 7/12/2006 | 94.70 | 15.30 | NP | -- | 79.40 | -- |
| MW-3 | 3/9/2007 | 94.70 | 14.51 | NP | -- | 80.19 | -- |
| MW-3 | 7/3/2007 | 94.70 | 15.07 | NP | -- | 79.63 | -- |
| MW-3 | 2/6/2008 | 94.70 | 15.88 | NP | -- | 78.82 | -- |
| MW-3 | 9/3/2008 | 94.70 | 15.27 | NP | -- | 79.43 | -- |
| MW-3 | 3/12/2009 | 94.70 | 15.28 | NP | -- | 79.42 | -- |
| MW-3 | 8/10/2009 | 94.70 | 15.22 | NP | -- | 79.48 | -- |
| MW-3 | 1/12/2010 | 94.70 | 14.84 | NP | -- | 79.86 | -- |
| MW-3 | 6/22/2010 | 94.70 | 14.32 | NP | -- | 80.38 | -- |
| MW-3 | 8/27/2010 | 94.70 | 15.04 | NP | -- | 79.66 | -- |
| MW-3 | 11/30/2010 | 94.70 | 15.00 | NP | -- | 79.70 | -- |
| MW-3 | 2/22/2011 | 94.70 | -- | -- | -- | 80.62 | -- |
| MW-3 | 4/26/2011 | 94.70 | 13.88 | NP | -- | 80.82 | -- |
| MW-3 | 7/26/2011 | 94.70 | 14.80 | NP | -- | 79.90 | -- |
| MW-3 | 2/29/2012 | 94.70 | 15.19 | NP | -- | 79.51 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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 | 5/9/2012 | 94.70 | 14.59 | NP | -- | 80.11 | -- |
| MW-3 | 8/7/2012 | 94.70 | 14.89 | NP | -- | 79.81 | -- |
| MW-3 | 11/14/2012 | 94.70 | 15.49 | NP | -- | 79.21 | -- |
| MW-3 | 3/11/2013 | 94.70 | 14.28 | NP | -- | 80.42 | -- |
| MW-3 | 9/4/2013 | 94.70 | 15.26 | NP | -- | 79.44 | -- |
| MW-3 | 11/8/2013 | 94.70 | 15.49 | NP | -- | 79.21 | -- |
| MW-3 | 3/4/2014 | 94.70 | 15.39 | NP | -- | 79.31 | -- |
| MW-3 | 7/3/2014 | 50.33 | 14.53 | NP | -- | 35.80 | -- |
| MW-3 | 10/8/2014 | 50.33 | 15.33 | NP | -- | 35.00 | -- |
| MW-3 | 1/7/2015 | 50.33 | 14.92 | NP | -- | 35.41 | -- |
| MW-3 | 4/17/2015 | 50.33 | 14.49 | NP | -- | 35.84 | -- |
| MW-3 | 8/27/2015 | 50.33 | 15.43 | NP | -- | 34.90 | -- |
| MW-3 | 2/18/2016 | 50.33 | 13.57 | NP | -- | 36.76 | -- |
| MW-3 | 8/25/2016 | 50.33 | 15.15 | NP | -- | 35.18 | -- |
| MW-3 | 11/1/2016 | 50.33 | 15.04 | NP | -- | 35.29 | -- |
| MW-3 | 2/9/2017 | 50.33 | 14.10 | NP | -- | 36.23 | -- |
| MW-3 | 8/10/2017 | 50.33 | -- | -- | -- | -- | WI |
| MW-3 | 2/15/2018 | 50.33 | 14.09 | NP | -- | 36.24 | -- |
| MW-3 | 9/13/2018 | 50.33 | 15.36 | NP | -- | 34.97 | -- |
| | | | | | | | |
| MW-4 | 5/1/2003 | 99.15 | 15.95 | NP | -- | 83.20 | -- |
| MW-4 | 7/31/2003 | 99.15 | 16.57 | NP | -- | 82.58 | -- |
| MW-4 | 10/2/2003 | 99.15 | 17.04 | NP | -- | 82.11 | -- |
| MW-4 | 2/18/2004 | 99.15 | 15.27 | NP | -- | 83.88 | -- |
| MW-4 | 1/28/2005 | 99.15 | 16.55 | NP | -- | 82.60 | -- |
| MW-4 | 6/17/2005 | 99.15 | 16.33 | NP | -- | 82.82 | -- |
| MW-4 | 8/22/2005 | 99.15 | 16.77 | NP | -- | 82.38 | -- |
| MW-4 | 11/9/2005 | 99.15 | 17.30 | NP | -- | 81.85 | -- |
| MW-4 | 1/19/2006 | 99.15 | 16.41 | NP | -- | 82.74 | -- |
| MW-4 | 4/12/2006 | 99.15 | 15.52 | NP | -- | 83.63 | -- |
| MW-4 | 7/12/2006 | 99.15 | 16.98 | NP | -- | 82.17 | -- |
| MW-4 | 3/9/2007 | 99.15 | 15.55 | NP | -- | 83.60 | -- |
| MW-4 | 7/3/2007 | 99.15 | 16.40 | NP | -- | 82.75 | -- |
| MW-4 | 2/6/2008 | 99.15 | 16.02 | NP | -- | 83.13 | -- |
| MW-4 | 9/3/2008 | 99.15 | -- | -- | -- | -- | WI |
| MW-4 | 3/12/2009 | 99.15 | 16.53 | NP | -- | 82.62 | -- |
| MW-4 | 8/10/2009 | 99.15 | -- | -- | -- | 82.55 | -- |
| MW-4 | 1/12/2010 | 99.15 | 15.98 | NP | -- | 83.17 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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-4 | 6/22/2010 | 99.15 | 15.55 | NP | -- | 83.60 | -- |
| MW-4 | 8/27/2010 | 99.15 | 16.39 | NP | -- | 82.76 | -- |
| MW-4 | 11/30/2010 | 99.15 | 16.28 | NP | -- | 82.87 | -- |
| MW-4 | 2/22/2011 | 99.15 | 14.61 | NP | -- | 84.54 | -- |
| MW-4 | 4/26/2011 | 99.15 | 14.30 | NP | -- | 84.85 | -- |
| MW-4 | 7/26/2011 | 99.15 | 16.08 | NP | -- | 83.07 | -- |
| MW-4 | 2/29/2012 | 99.15 | 16.44 | NP | -- | 82.71 | -- |
| MW-4 | 5/9/2012 | 99.15 | 14.75 | NP | -- | 84.40 | -- |
| MW-4 | 8/7/2012 | 99.15 | 16.30 | NP | -- | 82.85 | -- |
| MW-4 | 11/14/2012 | 99.15 | 16.92 | NP | -- | 82.23 | -- |
| MW-4 | 3/11/2013 | 99.15 | 15.12 | NP | -- | 84.03 | -- |
| MW-4 | 9/3/2013 | 99.15 | 16.58 | NP | -- | 82.57 | -- |
| MW-4 | 11/7/2013 | 99.15 | -- | -- | -- | 82.26 | -- |
| MW-4 | 3/4/2014 | 99.15 | 16.59 | NP | -- | 82.56 | -- |
| MW-4 | 7/2/2014 | 54.77 | 15.61 | NP | -- | 39.16 | -- |
| MW-4 | 10/8/2014 | 54.77 | 16.67 | NP | -- | 38.10 | -- |
| MW-4 | 1/7/2015 | 54.77 | 16.09 | NP | -- | 38.68 | -- |
| MW-4 | 8/27/2015 | 54.77 | 16.81 | NP | -- | 37.96 | -- |
| MW-4 | 2/18/2016 | 54.77 | 13.91 | NP | -- | 40.86 | -- |
| MW-4 | 8/25/2016 | 54.77 | 16.35 | NP | -- | 38.42 | -- |
| MW-4 | 11/1/2016 | 54.77 | 16.57 | NP | -- | 38.20 | -- |
| MW-4 | 2/9/2017 | 54.77 | 14.82 | NP | -- | 39.95 | -- |
| MW-4 | 8/10/2017 | 54.77 | 16.10 | NP | -- | 38.67 | -- |
| MW-4 | 2/15/2018 | 54.77 | 14.72 | NP | -- | 40.05 | -- |
| MW-4 | 9/13/2018 | 54.77 | 16.74 | NP | -- | 38.03 | -- |
| | | | | | | | |
| MW-5 | 6/17/2005 | 92.61 | 19.67 | NP | -- | 72.94 | -- |
| MW-5 | 8/22/2005 | 92.61 | 19.97 | NP | -- | 72.64 | -- |
| MW-5 | 11/9/2005 | 92.61 | 20.01 | NP | -- | 72.60 | -- |
| MW-5 | 1/19/2006 | 92.61 | 19.45 | NP | -- | 73.16 | -- |
| MW-5 | 4/12/2006 | 92.61 | 20.22 | NP | -- | 72.39 | -- |
| MW-5 | 7/12/2006 | 92.61 | 19.70 | NP | -- | 72.91 | -- |
| MW-5 | 3/9/2007 | 92.61 | 19.21 | NP | -- | 73.40 | -- |
| MW-5 | 7/3/2007 | 92.61 | 19.63 | NP | -- | 72.98 | -- |
| MW-5 | 2/6/2008 | 92.61 | 19.46 | NP | -- | 73.15 | -- |
| MW-5 | 9/3/2008 | 92.61 | 19.77 | NP | -- | 72.84 | -- |
| MW-5 | 3/12/2009 | 92.61 | 19.75 | NP | -- | 72.86 | -- |
| MW-5 | 8/10/2009 | 92.61 | 19.90 | NP | -- | 72.71 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| Well I.D. | Date | GROUNDWATER ELEVATION DATA | | | | | |
|---|---|---|---|---|---|---|---|
| | | TOC Elevation (ft) | Water Level Depth (ft) | LNAPL Depth (ft) | LNAPL Thickness (ft) | Water Level Elevation* (ft) | Qualifiers |
| MW-5 | 1/12/2010 | 92.61 | 19.43 | NP | -- | 73.18 | -- |
| MW-5 | 8/27/2010 | 92.61 | 19.66 | NP | -- | 72.95 | -- |
| MW-5 | 11/30/2010 | 92.61 | 19.58 | NP | -- | 73.03 | -- |
| MW-5 | 2/22/2011 | 92.61 | 19.02 | NP | -- | 73.59 | -- |
| MW-5 | 4/26/2011 | 92.61 | 18.90 | NP | -- | 73.71 | -- |
| MW-5 | 7/26/2011 | 92.61 | 19.45 | NP | -- | 73.16 | -- |
| MW-5 | 2/29/2012 | 92.61 | 19.63 | NP | -- | 72.98 | -- |
| MW-5 | 5/9/2012 | 92.61 | 19.33 | NP | -- | 73.28 | -- |
| MW-5 | 8/7/2012 | 92.61 | 19.61 | NP | -- | 73.00 | -- |
| MW-5 | 11/14/2012 | 92.61 | 19.70 | NP | -- | 72.91 | -- |
| MW-5 | 3/11/2013 | 92.61 | 19.90 | NP | -- | 72.71 | -- |
| MW-5 | 9/3/2013 | 92.61 | 19.74 | NP | -- | 72.87 | -- |
| MW-5 | 11/7/2013 | 92.61 | 19.91 | NP | -- | 72.70 | -- |
| MW-5 | 3/4/2014 | 92.61 | 19.57 | NP | -- | 73.04 | -- |
| MW-5 | 7/2/2014 | 48.26 | 19.36 | NP | -- | 28.90 | -- |
| MW-5 | 10/7/2014 | 48.26 | 19.79 | NP | -- | 28.47 | -- |
| MW-5 | 1/7/2015 | 48.26 | 19.35 | NP | -- | 28.91 | -- |
| MW-5 | 8/27/2015 | 48.26 | 19.93 | NP | -- | 28.33 | -- |
| MW-5 | 2/17/2016 | 48.26 | 18.75 | NP | -- | 29.51 | -- |
| MW-5 | 8/25/2016 | 48.26 | 19.75 | NP | -- | 28.51 | -- |
| MW-5 | 11/1/2016 | 48.26 | 19.62 | NP | -- | 28.64 | -- |
| MW-5 | 2/9/2017 | 48.26 | 19.02 | NP | -- | 29.24 | -- |
| MW-5 | 8/10/2017 | 48.26 | 19.52 | NP | -- | 28.74 | -- |
| MW-5 | 2/15/2018 | 48.26 | 18.97 | NP | -- | 29.29 | -- |
| MW-5 | 9/13/2018 | 48.26 | 19.90 | NP | -- | 28.36 | -- |
| | | | | | | | |
| MW-6 | 6/17/2005 | 93.65 | 17.04 | NP | -- | 76.61 | -- |
| MW-6 | 8/22/2005 | 93.65 | 17.30 | NP | -- | 76.35 | -- |
| MW-6 | 11/9/2005 | 93.65 | 17.67 | NP | -- | 75.98 | -- |
| MW-6 | 1/19/2006 | 93.65 | 17.15 | NP | -- | 76.50 | -- |
| MW-6 | 4/12/2006 | 93.65 | 16.21 | NP | -- | 77.44 | -- |
| MW-6 | 7/12/2006 | 93.65 | 16.75 | NP | -- | 76.90 | -- |
| MW-6 | 3/9/2007 | 93.65 | 16.36 | NP | -- | 77.29 | -- |
| MW-6 | 7/3/2007 | 93.65 | 16.78 | NP | -- | 76.87 | -- |
| MW-6 | 2/6/2008 | 93.65 | 16.91 | NP | -- | 76.74 | -- |
| MW-6 | 9/3/2008 | 93.65 | 17.06 | NP | -- | 76.59 | -- |
| MW-6 | 3/12/2009 | 93.65 | 17.10 | NP | -- | 76.55 | -- |
| MW-6 | 8/10/2009 | 93.65 | 17.04 | NP | -- | 76.61 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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-6 | 1/12/2010 | 93.65 | 16.77 | NP | -- | 76.88 | -- |
| MW-6 | 6/22/2010 | 93.65 | 15.90 | NP | -- | 77.75 | -- |
| MW-6 | 8/27/2010 | 93.65 | 16.68 | NP | -- | 76.97 | -- |
| MW-6 | 11/30/2010 | 93.65 | 16.73 | NP | -- | 76.92 | -- |
| MW-6 | 2/22/2011 | 93.65 | 15.93 | NP | -- | 77.72 | -- |
| MW-6 | 4/26/2011 | 93.65 | 15.74 | NP | -- | 77.91 | -- |
| MW-6 | 7/26/2011 | 93.65 | 16.46 | NP | -- | 77.19 | -- |
| MW-6 | 2/29/2012 | 93.65 | 17.01 | NP | -- | 76.64 | -- |
| MW-6 | 5/9/2012 | 93.65 | 16.48 | NP | -- | 77.17 | -- |
| MW-6 | 8/7/2012 | 93.65 | 16.68 | NP | -- | 76.97 | -- |
| MW-6 | 11/14/2012 | 93.65 | 17.18 | NP | -- | 76.47 | -- |
| MW-6 | 3/11/2013 | 93.65 | 16.15 | NP | -- | 77.50 | -- |
| MW-6 | 9/3/2013 | 93.65 | 16.85 | NP | -- | 76.80 | -- |
| MW-6 | 11/7/2013 | 93.65 | 17.18 | NP | -- | 76.47 | -- |
| MW-6 | 3/4/2014 | 93.65 | 17.25 | NP | -- | 76.40 | -- |
| MW-6 | 7/3/2014 | 49.28 | 16.30 | NP | -- | 32.98 | -- |
| MW-6 | 10/8/2014 | 49.28 | 17.04 | NP | -- | 32.24 | -- |
| MW-6 | 1/7/2015 | 49.28 | 16.71 | NP | -- | 32.57 | -- |
| MW-6 | 4/17/2015 | 49.28 | 16.34 | NP | -- | 32.94 | -- |
| MW-6 | 8/27/2015 | 49.28 | 17.14 | NP | -- | 32.14 | -- |
| MW-6 | 2/18/2016 | 49.28 | 15.62 | NP | -- | 33.66 | -- |
| MW-6 | 8/25/2016 | 49.28 | 16.82 | NP | -- | 32.46 | -- |
| MW-6 | 11/1/2016 | 49.28 | 16.96 | NP | -- | 32.32 | -- |
| MW-6 | 2/9/2017 | 49.28 | 16.00 | NP | -- | 33.28 | -- |
| MW-6 | 8/10/2017 | 49.28 | 16.49 | NP | -- | 32.79 | -- |
| MW-6 | 2/15/2018 | 49.28 | 16.00 | NP | -- | 33.28 | -- |
| MW-6 | 9/13/2018 | 49.28 | 17.09 | NP | -- | 32.19 | -- |
| | | | | | | | |
| MW-7 | 8/27/2010 | 93.31 | 23.02 | NP | -- | 70.29 | -- |
| MW-7 | 11/30/2010 | 93.31 | 22.89 | NP | -- | 70.42 | -- |
| MW-7 | 2/22/2011 | 93.31 | 22.80 | NP | -- | 70.51 | -- |
| MW-7 | 4/26/2011 | 93.31 | 22.68 | NP | -- | 70.63 | -- |
| MW-7 | 7/26/2011 | 93.31 | 22.95 | NP | -- | 70.36 | -- |
| MW-7 | 2/29/2012 | 93.31 | 22.95 | NP | -- | 70.36 | -- |
| MW-7 | 5/9/2012 | 93.31 | 22.80 | NP | -- | 70.51 | -- |
| MW-7 | 8/7/2012 | 93.31 | 23.00 | NP | -- | 70.31 | -- |
| MW-7 | 11/14/2012 | 93.31 | 22.81 | NP | -- | 70.50 | -- |
| MW-7 | 3/11/2013 | 93.31 | 22.71 | NP | -- | 70.60 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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 | 9/4/2013 | 93.31 | 23.03 | NP | -- | 70.28 | -- |
| MW-7 | 11/7/2013 | 93.31 | 23.04 | NP | -- | 70.27 | -- |
| MW-7 | 7/2/2014 | 48.93 | 22.91 | NP | -- | 26.02 | -- |
| MW-7 | 10/7/2014 | 48.93 | 22.95 | NP | -- | 25.98 | -- |
| MW-7 | 1/7/2015 | 48.93 | 22.81 | NP | -- | 26.12 | -- |
| MW-7 | 8/27/2015 | 48.93 | 23.11 | NP | -- | 25.82 | -- |
| MW-7 | 2/18/2016 | 48.93 | 22.37 | NP | -- | 26.56 | -- |
| MW-7 | 8/25/2016 | 48.93 | 23.01 | NP | -- | 25.92 | -- |
| MW-7 | 11/1/2016 | 48.93 | 22.68 | NP | -- | 26.25 | -- |
| MW-7 | 2/9/2017 | 48.93 | 22.43 | NP | -- | 26.50 | -- |
| MW-7 | 8/10/2017 | 48.93 | 22.83 | NP | -- | 26.10 | -- |
| MW-7 | 2/15/2018 | 48.93 | 22.62 | NP | -- | 26.31 | -- |
| MW-7 | 9/13/2018 | 48.93 | 23.11 | NP | -- | 25.82 | -- |
| | | | | | | | |
| MW-8 | 8/27/2010 | 91.25 | 23.05 | NP | -- | 68.20 | -- |
| MW-8 | 12/2/2010 | 91.25 | 22.14 | NP | -- | 69.11 | -- |
| MW-8 | 2/22/2011 | 91.25 | 22.00 | NP | -- | 69.25 | -- |
| MW-8 | 4/26/2011 | 91.25 | 22.18 | NP | -- | 69.07 | -- |
| MW-8 | 7/26/2011 | 91.25 | 22.89 | NP | -- | 68.36 | -- |
| MW-8 | 2/29/2012 | 91.25 | 22.45 | NP | -- | 68.80 | -- |
| MW-8 | 5/9/2012 | 91.25 | 22.32 | NP | -- | 68.93 | -- |
| MW-8 | 8/7/2012 | 91.25 | -- | -- | -- | -- | WI |
| MW-8 | 11/14/2012 | 91.25 | 22.28 | NP | -- | 68.97 | -- |
| MW-8 | 3/11/2013 | 91.25 | 22.30 | NP | -- | 68.95 | -- |
| MW-8 | 9/4/2013 | 91.25 | 23.15 | NP | -- | 68.10 | -- |
| MW-8 | 11/7/2013 | 91.25 | 22.91 | NP | -- | 68.34 | -- |
| MW-8 | 3/4/2014 | 91.25 | 21.97 | NP | -- | 69.28 | -- |
| MW-8 | 7/2/2014 | 46.87 | 22.83 | NP | -- | 24.04 | -- |
| MW-8 | 10/7/2014 | 46.87 | 22.84 | NP | -- | 24.03 | -- |
| MW-8 | 1/7/2015 | 46.87 | 22.20 | NP | -- | 24.67 | -- |
| MW-8 | 4/17/2015 | 46.87 | 22.52 | NP | -- | 24.35 | -- |
| MW-8 | 8/27/2015 | 46.87 | 23.28 | NP | -- | 23.59 | -- |
| MW-8 | 2/17/2016 | 46.87 | 21.65 | NP | -- | 25.22 | -- |
| MW-8 | 8/25/2016 | 46.87 | 23.18 | NP | -- | 23.69 | -- |
| MW-8 | 11/1/2016 | 46.87 | 21.77 | NP | -- | 25.10 | -- |
| MW-8 | 2/9/2017 | 46.87 | 21.68 | NP | -- | 25.19 | -- |
| MW-8 | 8/10/2017 | 46.87 | 22.87 | NP | -- | 24.00 | -- |
| MW-8 | 2/15/2018 | 46.87 | 22.00 | NP | -- | 24.87 | -- |

Table 1
Groundwater Gauging Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| 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-8 | 9/13/2018 | 46.87 | 23.24 | NP | -- | 23.63 | -- |
| | | | | | | | |
| MW-9 | 3/4/2014 | -- | 16.85 | NP | -- | -- | -- |
| MW-9 | 7/1/2014 | 52.93 | 16.09 | NP | -- | 36.84 | -- |
| MW-9 | 10/7/2014 | 52.93 | 16.99 | NP | -- | 35.94 | -- |
| MW-9 | 1/7/2015 | 52.93 | 16.32 | NP | -- | 36.61 | -- |
| MW-9 | 8/27/2015 | 52.93 | 17.05 | NP | -- | 35.88 | -- |
| MW-9 | 2/17/2016 | 52.93 | 14.66 | NP | -- | 38.27 | -- |
| MW-9 | 8/25/2016 | 52.93 | 16.75 | NP | -- | 36.18 | -- |
| MW-9 | 11/1/2016 | 52.93 | 16.35 | NP | -- | 36.58 | -- |
| MW-9 | 2/9/2017 | 52.93 | 15.25 | NP | -- | 37.68 | -- |
| MW-9 | 8/10/2017 | 52.93 | 16.38 | NP | -- | 36.55 | -- |
| MW-9 | 2/15/2018 | 52.93 | 15.20 | NP | -- | 37.73 | -- |
| MW-9 | 9/13/2018 | 52.93 | 17.01 | NP | -- | 35.92 | -- |

**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
Well casing elevation was resurveyed on 4/29/14 by Saez Consulting Engineers using the offsite vertical datum from WSDOT BM 21 COMM and BM 23 COMM, NAVD 88 el: 31.437 (ft) and 33.894 (ft) located on 21st Ave W and Commerce Way

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| Well ID | Date | | | | | | | | | | |
| MW-1 | 5/1/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | **34.1** | -- |
| MW-1 | 7/31/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 5.00 | < 0.010 | < 0.200 | < 50.0 | 1.40 | < 1.00 |
| MW-1 | 10/2/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | < 0.010 | < 0.200 | < 50.0 | 1.76 | < 1.00 |
| MW-1 | 2/18/2004 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | 1.38 | < 1.00 |
| MW-1 | 7/29/2004 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 1/28/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 6/17/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 8/22/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 11/9/2005 | < 0.300 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | < 1.00 | < 1.00 |
| MW-1 | 1/19/2006 | < 1.00 | < 1.00 | < 1.00 | < 3.00 | < 2.00 | < 0.010 | < 1.00 | < 50.0 | 1.68 | -- |
| MW-1 | 4/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 7/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 7/3/2007 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 2/6/2008 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 9/3/2008 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-1 | 11/30/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-1 | 2/22/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-1 | 11/14/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 100 | < 3.0 | < 3.0 |
| MW-1 | 3/11/2013 | < 0.500 | < 0.500 | < 0.500 | < 1.000 | < 0.500 | -- | -- | < 50.0 | < 10.0 | -- |
| MW-1 | 9/5/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-1 | 11/8/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-1 | 3/3/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | 0.17 J B | < 2.0 |
| MW-1 | 7/2/2014 | 0.15 JB | < 0.16 | 0.17 JB | < 0.12 | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-1 | 10/6/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | < 2.0 | 0.48 JB |
| MW-1 | 1/7/2015 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | 22 JB | < 0.17 | < 0.17 |
| MW-1 | 8/27/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | < 170 |
| MW-1 | 2/17/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | -- |
| MW-1 | 8/25/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | 0.34 J | 0.32 J |
| MW-1 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-1 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-1 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-1 | 2/15/2018 | < 2.0* | < 2.0* | < 3.0* | < 3.0* | < 2.0* | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-1 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-2 | 5/1/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | 2.46 | -- |
| MW-2 | 7/31/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 5.00 | < 0.010 | < 0.200 | < 50.0 | 2.58 | < 1.00 |
| MW-2 | 10/2/2003 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | < 0.010 | < 0.200 | < 50.0 | 3.73 | < 1.00 |
| MW-2 | 2/18/2004 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | 7.81 | < 1.00 |
| MW-2 | 7/29/2004 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 1/28/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 6/17/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 8/22/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 11/9/2005 | < 0.300 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | < 1.00 | < 1.00 |
| MW-2 | 1/19/2006 | < 1.00 | < 1.00 | < 1.00 | < 3.00 | < 2.00 | < 0.010 | < 1.00 | < 50.0 | < 1.00 | -- |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-2 | 4/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 7/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 7/3/2007 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 2/6/2008 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 9/3/2008 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-2 | 11/30/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | -- | -- | 70 | < 2.0 | 5.8 |
| MW-2 | 2/22/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-2 | 11/14/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 100 | < 3.0 | < 3.0 |
| MW-2 | 3/11/2013 | < 0.500 | < 0.500 | < 0.500 | < 1.000 | < 0.500 | -- | -- | < 50.0 | < 10.0 | -- |
| MW-2 | 9/3/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-2 | 11/7/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-2 | 3/3/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-2 | 7/1/2014 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-2 | 10/6/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-2 | 1/6/2015 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | 22 JB | < 0.17 | < 0.17 |
| MW-2 | 4/17/2015 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | -- | -- | -- | < 50 | -- | -- |
| MW-2 | 8/27/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | < 170 |
| MW-2 | 2/17/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | -- |
| MW-2 | 8/25/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | 0.34 J | 0.23 J |
| MW-2 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-2 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-2 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-2 | 2/15/2018 | < 2.0 | < 2.0* | < 3.0* | < 3.0* | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-2 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-3 | 5/1/2003 | **1830** | **8210** | **1410** | **6830** | < 500 | -- | -- | **43700** | 3.48 | -- |
| MW-3 | 7/31/2003 | **1440** | **6100** | **1180** | **5570** | < 5.00 | < 0.010 | < 50.0 | **27100** | 1.43 | < 1.00 |
| MW-3 | 10/2/2003 | **1770** | **7850** | **1530** | **6730** | < 25.0 | **0.164** | < 100 | **41200** | 1.85 | < 1.00 |
| MW-3 | 2/18/2004 | **1160** | **5140** | **1000** | **4290** | < 100 | **0.162** | < 50.0 | **31000** | 1.02 | < 1.00 |
| MW-3 | 7/29/2004 | **14.8** | 1.03 | 56.4 | 42.1 | < 2.00 | -- | < 1.00 | **1010** | < 1.00 | -- |
| MW-3 | 1/28/2005 | **1350** | **5350** | **1300** | **5520** | < 100 | **0.057** | < 25.0 | **26800** | 2.84 | < 1.00 |
| MW-3 | 6/17/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-3 | 8/22/2005 | **950** | **4180** | **1130** | **4680** | < 1.00 | **0.113** | < 0.200 | **34700** | 3.36 | < 1.00 |
| MW-3 | 1/19/2006 | **1710** | **8910** | **1540** | **7080** | < 2.00 | **0.043** | < 1.00 | **50700** | 5.5 | -- |
| MW-3 | 4/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-3 | 7/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-3 | 3/9/2007 | **1190** | **8090** | **1510** | **7170** | -- | -- | -- | **49300** | -- | -- |
| MW-3 | 7/3/2007 | **1040** | **5790** | **1690** | **7570** | -- | -- | -- | **51800** | -- | -- |
| MW-3 | 2/6/2008 | **1680** | **11200** | **1960** | **9490** | -- | -- | -- | **66600** | -- | -- |
| MW-3 | 9/3/2008 | **1530** | **11600** | **2340** | **10100** | -- | -- | -- | **73800** | -- | -- |
| MW-3 | 3/12/2009 | **1820** | **14000** | **2660** | **12500** | -- | -- | -- | **72900** | -- | -- |
| MW-3 | 8/10/2009 | **1900** | **13000** | **3100** | **15000** | -- | -- | -- | **93000** | < 2.00 | < 2.00 |
| MW-3 | 1/12/2010 | **1200** | **13000** | **2300** | **12000** | -- | -- | -- | **71000** | 7.4 | < 2.00 |
| MW-3 | 8/27/2010 | **1200** | **6900** | **1700** | **8900** | < 1.0 | -- | -- | **72000** | < 2.0 | < 2.0 |
| MW-3 | 11/30/2010 | **1600** | **13000** | **2800** | **14000** | < 1.0 | -- | -- | **94000** | < 2.0 | < 2.0 |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-3 | 2/22/2011 | **1200** | **7400** | **2200** | **11000** | < 1.0 | -- | -- | **65000** | < 2.0 | < 2.0 |
| MW-3 | 4/26/2011 | **720** | **3000** | **1300** | **6700** | < 50 | -- | -- | **36000** | 2.5 | < 2.0 |
| MW-3 | 7/26/2011 | **890** | **5000** | **1900** | **8600** | < 50 | -- | -- | **53000** | 8.2 | < 2.0 |
| MW-3 | 2/29/2012 | **976** | **8590** | **2150** | **9760** | < 1.0 | -- | -- | **67000** | < 10.0 | < 10.0 |
| MW-3 | 5/9/2012 | **941** | **7390** | **1910** | **8120** | < 10.0 | -- | -- | **57900** | < 10.0 | < 10.0 |
| MW-3 | 8/7/2012 | **630** | **5350** | **1820** | **8780** | < 10.0 | -- | -- | **57500** | < 10.0 | < 10.0 |
| MW-3 | 11/14/2012 | **714** | **7870** | **1670** | **7920** | < 50.0 | -- | -- | **39000** | 3.3 | < 3.0 |
| MW-3 | 3/11/2013 | **362** | **4850** | **1300** | **5830** | < 10.0 | -- | -- | **34000** | < 10.0 | -- |
| MW-3 | 9/4/2013 | **510 D** | **3800 D** | **1500 D** | **6700 D** | < 5.0 | **0.011 P** | -- | **42000** | < 10 | < 10 |
| MW-3 | 11/8/2013 | **640 D** | **6000 D** | **1500 D** | **7100 D** | < 10 | **0.011** | -- | **37000 DY** | < 10 | < 10 |
| MW-3 | 3/4/2014 | **500** | **6900** | **1500** | **7200** | -- | **0.012** | -- | **50000** | < 2.0 | < 2.0 |
| MW-3 | 7/3/2014 | **300 H** | **3300 H** | **1000 H** | **3600 H** | -- | 0.0023 J | -- | **2600 JB** | 0.29 J | 0.17 JB |
| MW-3 | 10/8/2014 | **440** | **3300** | **1300** | **7300** | -- | 0.0058 J | -- | **41000** | < 2.0 | 0.26 JB |
| MW-3 | 1/7/2015 | **610** | **6400** | **1700** | **8300** | -- | 0.0041 J^ | -- | **43000 B** | 0.20 J | < 0.17 |
| MW-3 | 4/17/2015 | **390** | **5800** | **1400** | **8000** | -- | < 0.010 | -- | **46000** | -- | -- |
| MW-3 | 8/28/2015 | **450** | **4100 E** | **1600** | **7000** | -- | -- | -- | **35000** | **200 J** | 280 J |
| MW-3 | 2/18/2016 | **440** | **4500** | **2100** | **9100** | -- | **0.036** | -- | **42000** | **240 J** | -- |
| MW-3 | 8/25/2016 | **350** | 860 | **1100** | **3400** | < 1.0 | -- | -- | **21000** | 0.81 J | 0.32 J |
| MW-3 | 11/1/2016 | **590** | **6300** | **2200** | **8500** | < 1.0 | -- | -- | **50000** | < 2.0 | < 2.0 |
| MW-3 | 2/9/2017 | **440** | **4000** | **1900** | **6100** | < 1.0* | -- | -- | **12000** | < 2.0 | < 2.0 |
| MW-3 | 2/15/2018 | **350 *** | **6100** | **2300** | **7300 *** | < 2.0 | -- | -- | < 25000 | < 4.0 | < 4.0 |
| MW-3 | 9/13/2018 | < 1500 | **4000** | **2000 H** | **7500 H** | < 2.0 | -- | -- | **37000** | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-4 | 5/1/2003 | 1.46 | 1.87 | 4.07 | 39.9 | < 5.00 | -- | -- | 366 | **66.3** | -- |
| MW-4 | 7/31/2003 | **5.66** | < 0.500 | 5.93 | 13.1 | < 5.00 | < 0.010 | < 0.200 | 213 | 5.80 | < 1.00 |
| MW-4 | 10/2/2003 | **8.97** | 0.591 | 8.62 | 21.5 | < 1.00 | < 0.010 | < 0.200 | 319 | 1.50 | < 1.00 |
| MW-4 | 2/18/2004 | 0.876 | 2.08 | 4.11 | 59.7 | < 1.00 | -- | -- | 673 | 8.53 | 2.12 |
| MW-4 | 1/28/2005 | **5.57** | 0.500 | 12.0 | 4.23 | < 2.00 | < 0.010 | < 0.500 | 416 | 3.05 | < 1.00 |
| MW-4 | 6/17/2005 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | 8/22/2005 | 1.91 | < 0.500 | 5.54 | < 1.00 | < 1.00 | < 0.010 | < 0.200 | 76.3 | < 1.00 | < 1.00 |
| MW-4 | 11/9/2005 | 0.37 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | < 1.00 | < 1.00 |
| MW-4 | 1/19/2006 | 2.38 | < 1.00 | 2.45 | < 3.00 | < 2.00 | < 0.010 | < 1.00 | 68.8 | < 1.00 | -- |
| MW-4 | 4/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | 7/12/2006 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-4 | 3/9/2007 | < 0.500 | < 0.500 | < 0.500 | < 3.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-4 | 7/3/2007 | 3.39 | 1.37 | 9.99 | 11.9 | -- | -- | -- | 306 | -- | -- |
| MW-4 | 2/6/2008 | < 0.500 | < 0.500 | < 0.500 | < 3.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-4 | 3/12/2009 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-4 | 8/10/2009 | < 1.00 | < 1.00 | 1.3 | 5.6 | -- | -- | -- | 130 | < 2.00 | < 2.00 |
| MW-4 | 1/12/2010 | < 1.00 | < 1.00 | < 1.00 | < 2.00 | -- | -- | -- | < 50.0 | < 2.00 | < 2.00 |
| MW-4 | 8/27/2010 | < 1.0 | < 1.0 | < 1.0 | 30 | < 1.0 | -- | -- | 54 | < 2.0 | < 2.0 |
| MW-4 | 11/30/2010 | < 1.0 | 1.2 | 3.8 | 5.7 | < 1.0 | -- | -- | 94 | < 2.0 | < 2.0 |
| MW-4 | 2/22/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-4 | 4/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-4 | 7/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-4 | 2/29/2012 | < 1.0 | 1.3 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-4 | 5/9/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-4 | 8/7/2012 | < 1.0 | < 1.0 | 1.2 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-4 | 11/14/2012 | < 1.0 | < 1.0 | 4.3 | 4.2 | < 1.0 | -- | -- | < 100 | < 3.0 | < 3.0 |
| MW-4 | 3/11/2013 | < 0.500 | < 0.500 | < 0.520 | 2.43 | < 0.500 | -- | -- | < 50.0 | < 10.0 | -- |
| MW-4 | 9/3/2013 | < 0.50 | < 0.50 | 2.5 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-4 | 11/7/2013 | 0.6 | < 0.50 | 5.4 | 1.9 | < 0.50 | -- | -- | 79 Y | < 10 | < 10 |
| MW-4 | 3/4/2014 | 0.85 J | 1.6 | 16 B | 24 | -- | -- | -- | 420 | < 2.0 | < 2.0 |
| MW-4 | 7/2/2014 | 1.2 B | 13 | 4.1 B | 16 B | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-4 | 10/8/2014 | 0.77 J | 1.4 | 4.7 | 5.9 | -- | -- | -- | 76 | < 2.0 | < 2.0 |
| MW-4 | 1/7/2015 | 0.30 J | 0.30 J | 3.9 | 2.5 J | -- | -- | -- | 93 B | < 0.17 | < 0.17 |
| MW-4 | 8/27/2015 | < 0.42 | 0.56 J | 0.81 J | 1.4 J | -- | -- | -- | 52 | < 170 | < 170 |
| MW-4 | 2/18/2016 | < 0.42 | 0.49 J | < 0.51 | 1.3 J | -- | -- | -- | < 27 | **1700 J** | -- |
| MW-4 | 8/25/2016 | < 2.0 | 0.39 J | < 3.0 | 0.66 J | < 1.0 | -- | -- | < 50 | 0.17 J | 0.50 J |
| MW-4 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-4 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | 3.3 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-4 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-4 | 2/15/2018 | < 2.0* | < 2.0* | < 3.0* | < 3.0* | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-4 | 9/13/2018 | < 3.0 | 3.9 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-5 | 6/17/2005 | < 0.200 | < 0.500 | < 0.500 | < 1.00 | < 2.00 | < 0.010 | < 0.500 | < 80.0 | **47.7** | < 1.00 |
| MW-5 | 8/22/2005 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | < 0.010 | < 0.200 | < 50.0 | 6.92 | < 1.00 |
| MW-5 | 11/9/2005 | < 0.300 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | -- | -- | < 50.0 | < 1.00 | < 1.00 |
| MW-5 | 1/19/2006 | < 1.00 | < 1.00 | < 1.00 | < 3.00 | < 2.00 | < 0.010 | < 1.00 | < 50.0 | 10.7 | -- |
| MW-5 | 4/12/2006 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | < 1.00 | < 0.010 | < 1.00 | < 50.0 | 8.56 | -- |
| MW-5 | 7/12/2006 | < 0.500 | < 0.500 | < 0.500 | 1.46 | < 1.00 | < 0.010 | < 1.00 | < 80.0 | 3.62 | < 1.00 |
| MW-5 | 7/3/2007 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-5 | 2/6/2008 | < 0.500 | 2.01 | 0.6 | < 3.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-5 | 9/3/2008 | < 0.500 | < 0.500 | < 0.500 | < 3.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-5 | 3/12/2009 | < 0.500 | < 0.500 | < 0.500 | < 1.00 | -- | -- | -- | < 50.0 | -- | -- |
| MW-5 | 8/10/2009 | < 1.00 | 1.1 | < 1.00 | 2.1 | -- | -- | -- | < 50.0 | < 2.00 | < 2.00 |
| MW-5 | 1/12/2010 | < 1.00 | < 1.00 | < 1.00 | < 2.00 | -- | -- | -- | < 50.0 | < 2.00 | < 2.00 |
| MW-5 | 8/27/2010 | < 1.0 | < 1.0 | < 1.0 | 6.2 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 11/30/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 2/22/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 4/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 7/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 2/29/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-5 | 5/9/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-5 | 8/7/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-5 | 11/14/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 100 | < 3.0 | < 3.0 |
| MW-5 | 3/11/2013 | < 0.500 | < 0.500 | < 0.500 | < 1.000 | < 0.500 | -- | -- | < 50.0 | < 10.0 | -- |
| MW-5 | 9/3/2013 | < 0.50 | 1.2 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-5 | 11/7/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-5 | 3/4/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | < 2.0 | < 2.0 |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-5 | 7/2/2014 | 0.43 JB | 4.6 | 1.4 B | 5.7 B | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-5 | 10/7/2014 | < 1.0 | 0.20 J | 0.13 J | 0.50 J | -- | -- | -- | 12 J | < 2.0 | < 2.0 |
| MW-5 | 1/7/2015 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | 38 JB | < 0.17 | < 0.17 |
| MW-5 | 8/27/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | < 170 |
| MW-5 | 2/17/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | -- |
| MW-5 | 8/25/2016 | < 2.0 | 0.62 J | 0.50 J | 1.2 J | < 1.0 | -- | -- | < 50 | 0.60 J | < 2.0 |
| MW-5 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-5 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-5 | 2/15/2018 | < 2.0 | < 2.0 | < 3.0 | < 3.0* | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-5 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-6 | 6/17/2005 | **97.2** | 240 | **1390** | **5940** | < 40.0 | < 0.010 | < 10.0 | **27400** | **20.6** | < 1.00 |
| MW-6 | 8/22/2005 | **74.4** | 244 | **1430** | **6860** | < 1.00 | < 0.010 | < 0.200 | **43100** | 4.05 | < 1.00 |
| MW-6 | 11/9/2005 | **64.1** | 128 | **1490** | **6720** | < 1.00 | -- | -- | **38700** | 1.73 | < 1.00 |
| MW-6 | 1/19/2006 | **115** | 374 | **1420** | **6540** | < 2.00 | < 0.010 | < 1.00 | **38900** | 4.33 | -- |
| MW-6 | 4/12/2006 | **52.4** | 235 | 65.6 | 289 | < 1.00 | < 0.010 | < 1.00 | **1500** | 1.34 | -- |
| MW-6 | 7/12/2006 | 2.9 | 0.91 | 12.2 | 6.91 | < 1.00 | < 0.010 | < 1.00 | 405 | 1.22 | < 1.00 |
| MW-6 | 3/9/2007 | 2.29 | 2.99 | 76.8 | 84.4 | -- | -- | -- | **1500** | -- | -- |
| MW-6 | 7/3/2007 | **285** | 936 | **829** | **3440** | -- | -- | -- | **21400** | -- | -- |
| MW-6 | 2/6/2008 | **26.9** | 15.9 | 132 | 479 | -- | -- | -- | **5860** | -- | -- |
| MW-6 | 9/3/2008 | < 0.500 | < 0.500 | 4.96 | 13.9 | -- | -- | -- | 328 | -- | -- |
| MW-6 | 3/12/2009 | **28.4** | 4.03 | 62.7 | 131 | -- | -- | -- | **2250** | -- | -- |
| MW-6 | 8/10/2009 | < 1.00 | < 1.00 | < 1.00 | 5.0 | -- | -- | -- | 270 | < 2.00 | < 2.00 |
| MW-6 | 1/12/2010 | 1.2 | < 1.00 | < 1.00 | < 2.00 | -- | -- | -- | 320 | < 2.00 | < 2.00 |
| MW-6 | 6/22/2010 | **6.9** | < 0.500 | 78 | 140 | -- | -- | -- | **5000** | < 2.00 | < 2.00 |
| MW-6 | 8/27/2010 | < 1.0 | < 1.0 | < 1.0 | 2.4 | < 1.0 | -- | -- | 410 | < 2.0 | < 2.0 |
| MW-6 | 11/30/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | -- | -- | 120 | < 2.0 | < 2.0 |
| MW-6 | 2/22/2011 | **43** | 220 | 68 | 330 | < 1.0 | -- | -- | **1900** | < 2.0 | < 2.0 |
| MW-6 | 4/26/2011 | 1.4 | < 0.50 | 1.2 | 1.4 | < 1.0 | -- | -- | 140 | < 2.0 | < 2.0 |
| MW-6 | 7/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-6 | 2/29/2012 | **7.5** | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | 61.2 | < 10.0 | < 10.0 |
| MW-6 | 5/9/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-6 | 8/7/2012 | < 1.0 | < 1.0 | 8.4 | 5.4 | < 1.0 | -- | -- | **1070** | < 10.0 | < 10.0 |
| MW-6 | 11/14/2012 | **17.7** | 2.3 | 115 | 257 | < 1.0 | -- | -- | **1760** | < 3.0 | < 3.0 |
| MW-6 | 3/11/2013 | 0.5 | < 0.500 | < 0.500 | < 1.000 | < 0.500 | -- | -- | 75.9 | < 10.0 | -- |
| MW-6 | 9/3/2013 | 1 | < 0.50 | 0.93 | < 1.0 | < 0.50 | -- | -- | 260 | < 10 | < 10 |
| MW-6 | 11/7/2013 | < 0.50 | < 0.50 | 4.3 | 2.1 | < 0.50 | -- | -- | 220 Y | < 10 | < 10 |
| MW-6 | 3/4/2014 | **32** | 89 | 410 B | **1100** | -- | -- | -- | **19000** | 0.22 JB | < 2.0 |
| MW-6 | 7/3/2014 | 0.46 JB | 3.3 | 29 B | 30 B | -- | -- | -- | **1800 B** | < 0.17 | 0.80 JB |
| MW-6 | 10/8/2014 | **9** | 2.9 | 83 | 150 | -- | < 0.010 | -- | **5000** | < 2.0 | < 2.0 |
| MW-6 | 1/7/2015 | 0.78 J | 1.1 | 36 | 62 | -- | -- | -- | **4000 B** | < 0.17 | < 0.17 |
| MW-6 | 4/17/2015 | 2.7 | 0.93 | 39 | 59 | -- | -- | -- | **3300** | -- | -- |
| MW-6 | 8/28/2015 | 0.71 J | 0.85 J | 44 | 110 | -- | -- | -- | **5900** | < 170 | < 170 |
| MW-6 | 2/18/2016 | < 0.42 | < 0.44 | 2.0 J | 0.79 J | -- | -- | -- | 430 | < 170 | -- |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-6 | 8/25/2016 | 2.1 | 0.24 J | 1.2 J | 0.89 J | < 1.0 | -- | -- | 250 | 0.17 J | < 2.0 |
| MW-6 | 11/1/2016 | 2.4 | < 2.0 | 6.8 | 3.8 | < 1.0 | -- | -- | 550 | < 2.0 | < 2.0 |
| MW-6 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-6 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-6 | 2/15/2018 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-6 | 9/13/2018 | < 3.0 | < 2.0 | 13 H | 3.4 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-7 | 8/27/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | < 50 | < 2.0 | < 2.0 |
| MW-7 | 11/30/2010 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | < 50 | < 2.0 | < 2.0 |
| MW-7 | 2/22/2011 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | < 50 | < 2.0 | < 2.0 |
| MW-7 | 4/26/2011 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | < 0.010 | < 1.0 | < 50 | < 2.0 | < 2.0 |
| MW-7 | 7/26/2011 | < 1.0 | < 1.0 | < 1.0 | < 2.0 | 1.0 | < 0.010 | < 1.0 | < 50 | < 2.0 | < 2.0 |
| MW-7 | 2/29/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-7 | 5/9/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-7 | 8/7/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 50.0 | < 10.0 | < 10.0 |
| MW-7 | 11/14/2012 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | < 100 | < 3.0 | < 3.0 |
| MW-7 | 3/11/2013 | < 0.500 | < 0.500 | < 0.500 | < 1.000 | < 0.500 | -- | -- | < 50.0 | < 10.0 | -- |
| MW-7 | 9/4/2013 | < 0.50 | 3 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-7 | 11/7/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-7 | 7/2/2014 | 0.17 JB | 1.8 | 0.66 JB | 2.5 JB | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-7 | 10/7/2014 | < 1.0 | 0.21 J | 0.19 J | 0.57 J | -- | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-7 | 1/6/2015 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | 37 JB | < 0.17 | 0.24 J |
| MW-7 | 8/28/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | 180 J |
| MW-7 | 2/18/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | -- |
| MW-7 | 8/25/2016 | < 2.0 | 0.19 J | < 3.0 | < 3.0 | 0.11 J | -- | -- | < 50 | 0.25 J | < 2.0 |
| MW-7 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-7 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-7 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-7 | 2/15/2018 | < 2.0* | < 2.0* | < 3.0* | < 3.0* | < 2.0* | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-7 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-8 | 8/27/2010 | 2.1 | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | 130 | < 2.0 | < 2.0 |
| MW-8 | 12/2/2010 | **59** | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | **1400** | < 2.0 | < 2.0 |
| MW-8 | 2/22/2011 | **53** | < 1.0 | < 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | 350 | 3.8 | 2.2 |
| MW-8 | 4/26/2011 | 4.4 | < 0.50 | < 0.50 | < 1.0 | < 1.0 | < 0.010 | < 1.0 | 90 | < 2.0 | < 2.0 |
| MW-8 | 7/26/2011 | 3.1 | < 1.0 | 1.0 | < 2.0 | < 1.0 | < 0.010 | < 1.0 | 58 | < 2.0 | < 2.0 |
| MW-8 | 2/29/2012 | **185** | 1.5 | 1.6 | < 3.0 | < 1.0 | -- | -- | **2750** | **143** | < 10.0 |
| MW-8 | 5/9/2012 | **80.9** | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | 651 | < 10.0 | < 10.0 |
| MW-8 | 11/14/2012 | **36.9** | < 1.0 | < 1.0 | < 3.0 | < 1.0 | -- | -- | 600 | < 3.0 | < 3.0 |
| MW-8 | 3/11/2013 | **5.51** | < 1.0 | < 1.0 | < 1.000 | < 0.500 | -- | -- | 119 | < 10.0 | -- |
| MW-8 | 9/4/2013 | < 0.50 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | < 50 | < 10 | < 10 |
| MW-8 | 11/7/2013 | 4.6 | < 0.50 | < 0.50 | < 1.0 | < 0.50 | -- | -- | 91 Y | < 10 | < 10 |
| MW-8 | 3/4/2014 | **22** | < 1.0 | 0.15 JB | < 3.0 | -- | -- | -- | 400 | 0.23 JB | < 2.0 |
| MW-8 | 7/2/2014 | 0.76 JB | 1.5 | 0.65 JB | 2.2 JB | -- | -- | -- | < 10 | < 0.17 | < 0.17 |
| MW-8 | 10/7/2014 | 3 | 0.18 J | < 1.0 | < 3.0 | -- | -- | -- | 110 | < 2.0 | < 2.0 |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| | CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |
| MW-8 | 1/6/2015 | **8.3** | 0.17 J | < 0.13 | < 0.12 | -- | -- | -- | 470 B | 0.32 J | 0.30 J |
| MW-8 | 4/17/2015 | 3.1 | < 2.0 | < 3.0 | < 3.0 | -- | -- | -- | 220 | -- | -- |
| MW-8 | 8/28/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | < 170 |
| MW-8 | 2/17/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | **290 J** | -- |
| MW-8 | 8/25/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-8 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-8 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-8 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-8 | 2/15/2018 | **7.5 *** | < 2.0* | < 3.0* | < 3.0* | < 2.0* | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-8 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| | | | | | | | | | | | |
| MW-9 | 3/4/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | < 0.010 | -- | < 50 | < 2.0 | < 2.0 |
| MW-9 | 7/1/2014 | < 0.14 | 0.81 J | 0.35 JB | 1.2 JB | -- | < 0.0020 | -- | < 10 | < 0.17 | < 0.17 |
| MW-9 | 10/7/2014 | < 1.0 | < 1.0 | < 1.0 | < 3.0 | -- | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-9 | 1/7/2015 | < 0.14 | < 0.16 | < 0.13 | < 0.12 | -- | -- | -- | 33 JB | < 0.17 | < 0.17 |
| MW-9 | 8/27/2015 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | < 170 | < 170 |
| MW-9 | 2/17/2016 | < 0.42 | < 0.44 | < 0.51 | < 0.50 | -- | -- | -- | < 27 | **260 J** | -- |
| MW-9 | 8/25/2016 | < 2.0 | 0.29 J | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-9 | 11/1/2016 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 1.0 | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-9 | 2/9/2017 | < 2.0* | < 2.0 | < 3.0 | < 3.0 | < 1.0* | -- | -- | < 50 | < 2.0 | < 2.0 |
| MW-9 | 8/10/2017 | < 2.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-9 | 2/15/2018 | < 2.0* | < 2.0* | < 3.0* | < 3.0* | < 2.0* | -- | -- | < 250 | < 4.0 | < 4.0 |
| MW-9 | 9/13/2018 | < 3.0 | < 2.0 | < 3.0 | < 3.0 | < 2.0 | -- | -- | < 250 | < 4.0 | < 4.0 |

Table 2
Groundwater Analytical Data
ARCO Facility 818
3201 20th Avenue West
Seattle, WA 98199

| CONSTITUENT | B | T | E | X | MTBE | EDB | EDC | TPH-G | Total Lead | Dissolved Lead |
|---|---|---|---|---|---|---|---|---|---|---|
| UNIT | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| **MTCA METHOD A CLEANUP LEVELS** | **5** | **1000** | **700** | **1000** | **20** | **0.01** | **5** | **1000/800[1]** | **15** | **NE** |

**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
1,000/800[1] ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L
NE = Not evaluated
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
ug/L = Micrograms per liter (ppb)
-- = 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
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
e = Result exceeded calibration range.
* = RPD of the LCS and LCSD exceeds the control limits
* = LCS or LCSD is outside acceptance limits.
^ = Instrument related QC exceeds the control limits.
b = Compound was found in the blank and sample.
P = The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
D = The reported result is from a dilution.
H = Sample was prepped or analyzed beyond the specified holding time.

# Figures

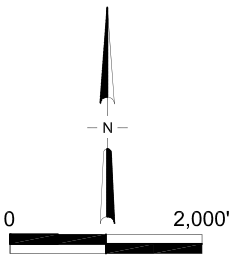
Figure 1 Site Location Map

Figure 2 Site Aerial Map

Figure 3 Groundwater Analytical and Elevation Contour Map - 9/13/2018

GENERAL NOTES:
BASE MAP FROM USGS TOPO AND HISTORICAL TOPOGRAPHIC MAP COLLECTION
SHILSHOLE BAY, WA. AND SEATTLE NORTH QUADRANGLES
7.5 MINUTE TOPOGRAPHIC MAPS

QUADRANGLE LOCATION



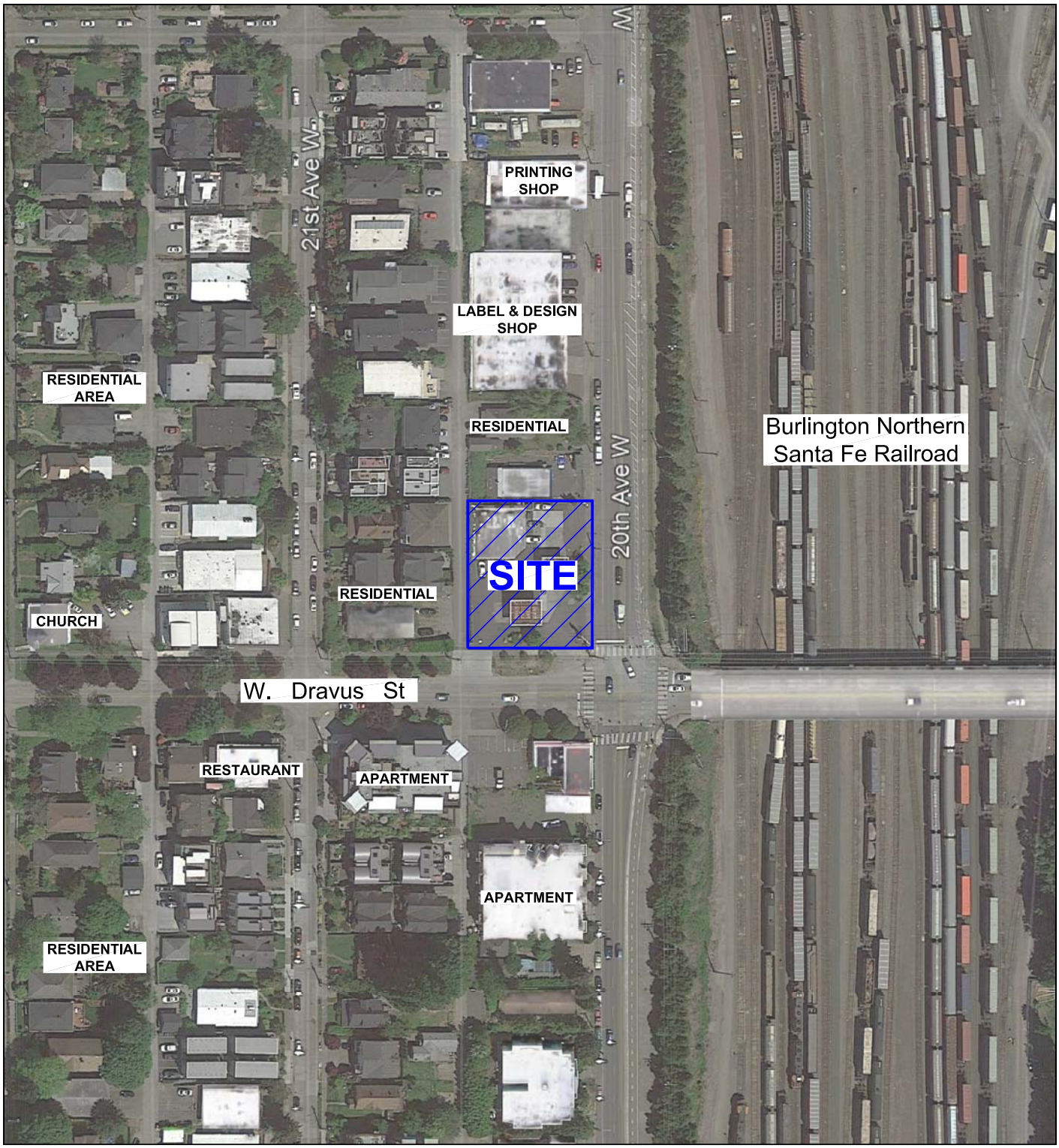

SCALE

# FIGURE 1
## SITE LOCATION MAP

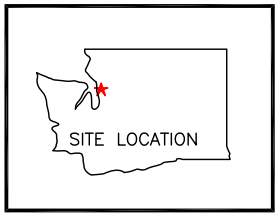
ARCO FACILITY NO. 0818
3201 20th AVENUE WEST
SEATTLE, WASHINGTON

| | | |
|---|---|---|
| PROJECT NO. 00818AA181 | DRAWN BY DR | |
| FILE NO. 818–slm2 | PREPARED BY MB | |
| DATE 31 Oct 18 / REV. 0 | REVIEWED BY TR | |

antea group




GENERAL NOTES:
BASE MAP FROM GOOGLE EARTH 2018



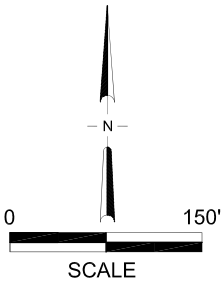
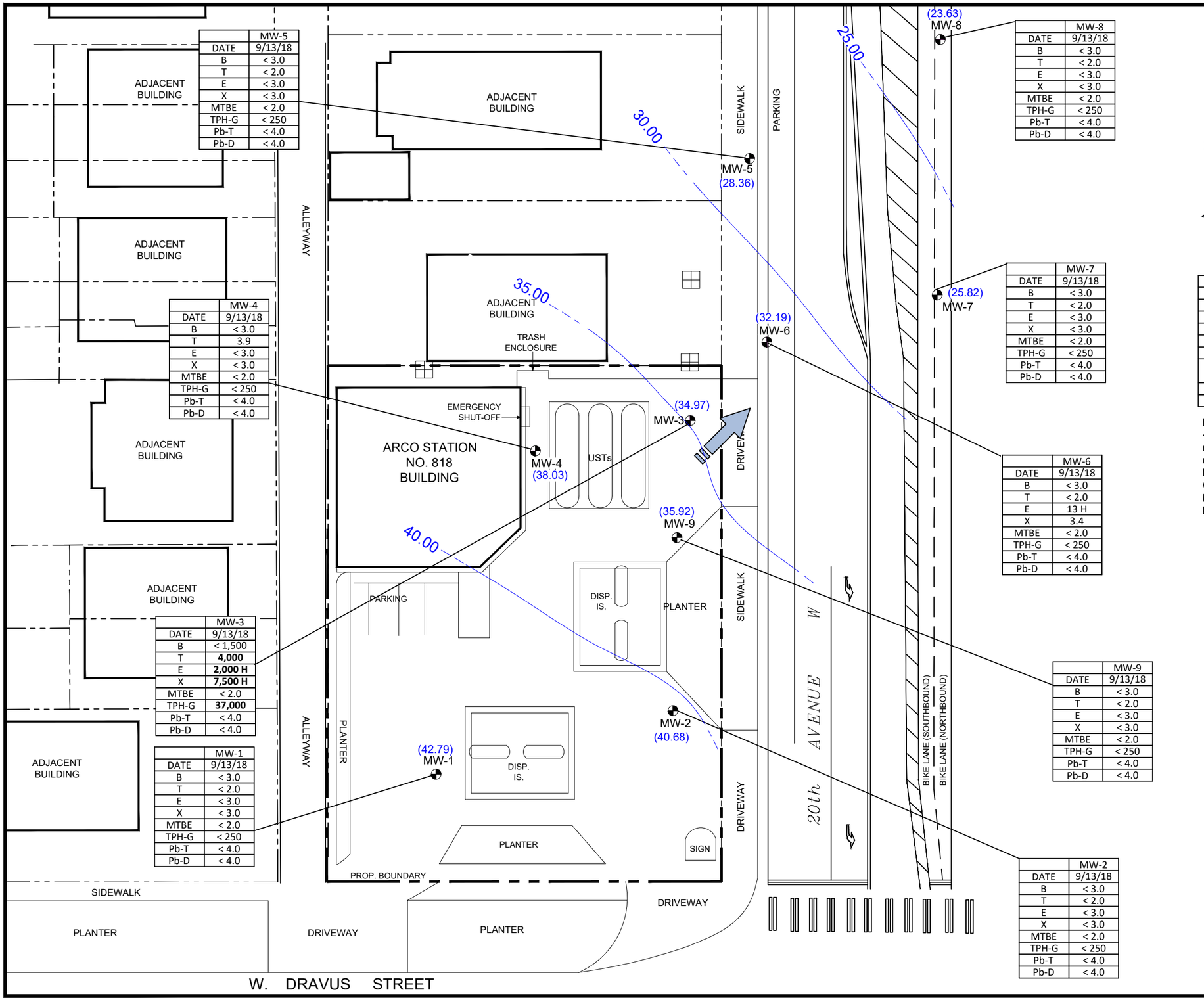




FIGURE 2
SITE AERIAL MAP

ARCO FACILITY NO. 818
3201 20th AVENUE WEST
SEATTLE, WASHINGTON

| | | |
|---|---|---|
| PROJECT NO. 00818AA181 | | DRAWN BY DR |
| FILE NO. 818–SAM2 | | PREPARED BY MB |
| DATE 28 Jan 19 | REV. 0 | REVIEWED BY TR |

antea group




| | MW-5 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-4 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | 3.9 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-3 |
|---|---|
| DATE | 9/13/18 |
| B | < 1,500 |
| T | **4,000** |
| E | **2,000 H** |
| X | **7,500 H** |
| MTBE | < 2.0 |
| TPH-G | **37,000** |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-1 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-8 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-7 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-6 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | 13 H |
| X | 3.4 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-9 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

| | MW-2 |
|---|---|
| DATE | 9/13/18 |
| B | < 3.0 |
| T | < 2.0 |
| E | < 3.0 |
| X | < 3.0 |
| MTBE | < 2.0 |
| TPH-G | < 250 |
| Pb-T | < 4.0 |
| Pb-D | < 4.0 |

## LEGEND:

MW-3 — MONITORING WELL LOCATION

DI2-4.0 — SOIL SAMPLE LOCATION

CATCH BASIN

(23.63) — GROUNDWATER ELEVATION IN FEET REFERENCED TO A SITE SPECIFIC BENCHMARK

25.00 — WATER TABLE CONTOUR IN FEET REFERENCED TO A SITE-SPECIFIC BENCHMARK - DASHED WHERE INFERRED (CONTOUR INTERVAL: 5.00 FT)

INFERRED DIRECTION OF GROUNDWATER FLOW: NE (GROUNDWATER GRADIENT: 0.07 FT/LINEAR FT)

GROUNDWATER DATA

| | MW-1 | |
|---|---|---|
| DATE | 9/13/18 | WELL ID<br>SAMPLE DATE |
| B | < 3.0 | BENZENE IN µg/L |
| T | < 2.0 | TOLUENE IN µg/L |
| E | < 3.0 | ETHYLBENZENE IN µg/L |
| X | < 3.0 | XYLENES IN µg/L |
| MTBE | < 2.0 | METHYL TERTIARY BUTYL ETHER IN µg/L |
| TPH-G | < 250 | TOTAL PETROLEUM HYDROCARBONS AS GASOLINE IN µg/L |
| Pb-T | < 4.0 | TOTAL LEAD IN µg/L |
| Pb-D | < 4.0 | DISSOLVED LEAD IN µg/L |

Notes:
<1.0 = Concentrations were not detected above the laboratory method reporting limit.
ug/L = Micrograms per liter (ppb)
Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels
MTCA = Model Toxics Control Act
H = Sample was prepped or analyzed beyond the specified holding time

N

0 30'

APPROX. SCALE

**FIGURE 3**
**GROUNDWATER ANALYTICAL AND ELEVATION CONTOUR MAP - 9/13/2018**

ARCO FACILITY NO. 0818
3201 20th AVENUE WEST
SEATTLE, WA.

| | |
|---|---|
| PROJECT NO. 00818AA181 | DRAWN BY DR/LKO |
| FILE NO. AR-0818_2018-2 | PREPARED BY M. BERNARD |
| DATE 1/15/19 | LAYER GSlayer |

antea group

# 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: 580-80367-1
Client Project/Site: BP - ARCO 818
Sampling Event: ARCO 00818
Revision: 1

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

Attn: Megan Richard

M. Elaine Walker

*Authorized for release by:*
*1/31/2019 4:36:52 PM*

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

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*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.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Case Narrative . . . . . 3
Definitions . . . . . 5
Client Sample Results . . . . . 6
QC Sample Results . . . . . 16
Chronicle . . . . . 22
Certification Summary . . . . . 25
Sample Summary . . . . . 26
Chain of Custody . . . . . 27
Receipt Checklists . . . . . 28
Correspondence . . . . . 29

## Job ID: 580-80367-1

### Laboratory: TestAmerica Seattle

**Narrative**

**Job Narrative**
**580-80367-1**

**Revision 1: January 31, 2019**
During a recent internal data review, TestAmerica Seattle discovered that a dual detector instrument configured with a Photoionization Detector (PID) and a Flame Ionization Detector (FID) was using the incorrect detector for quantitation of TPH by Method NWTPH-Gx. The data for sample MW-3_15.36 (580-80367-3) has changed. Results for the remaining samples stayed the same. Surrogate recoveries are slightly different for all samples, but still within control limits. The PID is typically used for analysis of aromatic compounds, such as BTEX, while the FID is a non-selective detector used for analysis of gasoline range petroleum hydrocarbon compounds. The PID detects many of the components of gasoline, but is more selective. The instrument was collecting data from both detectors, but due to a software configuration issue, the data from the PID detector was being displayed as the primary detector, and it was not clearly indicated on the reported data which detector was being used for quantitation. All QC passed on the PID, however reevaluation of the data on the FID indicated a potential low bias based on low percent difference (%D) of the initial calibration verification (ICV). Please see attached letter which contains details. Please also note the change in **BOLD** type below..

**Receipt**
The samples were received on 9/14/2018 11:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9º C.

**GC/MS VOA**
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 580-285037 recovered outside acceptance criteria, low biased, for Methyl tert-butyl ether. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported.

Method(s) 8260C: Surrogate recovery for the following samples were outside the upper control limit: MW-1_14.69 (580-80367-1), MW-2_12.35 (580-80367-2), MW-3_15.36 (580-80367-3), MW-4_16.74 (580-80367-4), MW-5_19.90 (580-80367-5), MW-6_17.09 (580-80367-6), MW-7_23.11 (580-80367-7), MW-8_23.24 (580-80367-8), MW-9_17.01 (580-80367-9), Tripblank-1 (580-80367-10), (LCS 580-285037/6), (LCSD 580-285037/7), and (MB 580-285037/5). Target analytes that are chemically associated with the failing surrogates are reported if the result is ND. If there was a detection for analytes associated with this surrogate, the sample was re-analyzed outside of holding time and both sets of data are reported.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3_15.36 (580-80367-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following sample was re-analyzed due to carry-over: MW-4_16.74 (580-80367-4).

**Method(s) NWTPH-Gx: The %D of the analyte Gasoline for ICV associated with batch 580-291670 was outside the lower control limits at -22.7%, limit 20%.The %D of surrogate 4-Bromofluorobenzene (Surr) for ICV associated with batch 580-291670 was outside the upper control limits at 33.7%, limit 20%. MW-1_14.69 (580-80367-1), MW-2_12.35 (580-80367-2), MW-3_15.36 (580-80367-3), MW-4_16.74 (580-80367-4), MW-5_19.90 (580-80367-5), MW-6_17.09 (580-80367-6), MW-7_23.11 (580-80367-7), MW-8_23.24 (580-80367-8), MW-9_17.01 (580-80367-9), Tripblank-1 (580-80367-10), (LCS 580-291699/7), (LCSD 580-291699/8), (MB 580-291699/6), (LCS 580-291702/7), (LCSD 580-291702/8) and (MB 580-291702/6).**

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

Method(s) NWTPH-Gx: The %D of surrogate in CCV associated with batch 580-291702 were outside the upper control limits. All associated sample surrogate fell within acceptance criteria; therefore, the data have been reported. (CCVRT 580-291702/5)

Method(s) NWTPH-Gx: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3_15.36 (580-80367-3). Elevated reporting limits (RLs) are provided.

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

## Job ID: 580-80367-1 (Continued)

### Laboratory: TestAmerica Seattle (Continued)

**Metals**

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

# Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| X | Surrogate is outside control limits |
| H | Sample was prepped or analyzed beyond the specified holding time |

## 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 | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-1_14.69

**Lab Sample ID: 580-80367-1**

**Date Collected: 09/13/18 11:30**

**Matrix: Water**

**Date Received: 09/14/18 11:15**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 14:54 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 14:54 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 14:54 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 14:54 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 14:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *80 - 126* | | *09/27/18 14:54* | *1* |
| *4-Bromofluorobenzene (Surr)* | *56* | *X* | *80 - 125* | | *09/27/18 14:54* | *1* |
| *Toluene-d8 (Surr)* | *125* | *X* | *80 - 122* | | *09/27/18 14:54* | *1* |
| *Trifluorotoluene (Surr)* | *109* | | *80 - 120* | | *09/27/18 14:54* | *1* |
| *Dibromofluoromethane (Surr)* | *110* | | *77 - 120* | | *09/27/18 14:54* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/23/18 23:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *50 - 150* | | *09/23/18 23:26* | *1* |
| *Trifluorotoluene (Surr)* | *117* | | *50 - 150* | | *09/23/18 23:26* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/20/18 11:42 | 09/21/18 02:45 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 17:54 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-2_12.35

**Date Collected: 09/13/18 11:00**
**Date Received: 09/14/18 11:15**

## Lab Sample ID: 580-80367-2

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 15:18 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 15:18 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 15:18 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 15:18 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 15:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *80 - 126* | | *09/27/18 15:18* | *1* |
| *4-Bromofluorobenzene (Surr)* | *64* | *X* | *80 - 125* | | *09/27/18 15:18* | *1* |
| *Toluene-d8 (Surr)* | *119* | | *80 - 122* | | *09/27/18 15:18* | *1* |
| *Trifluorotoluene (Surr)* | *106* | | *80 - 120* | | *09/27/18 15:18* | *1* |
| *Dibromofluoromethane (Surr)* | *107* | | *77 - 120* | | *09/27/18 15:18* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/23/18 23:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *88* | | *50 - 150* | | *09/23/18 23:57* | *1* |
| *Trifluorotoluene (Surr)* | *116* | | *50 - 150* | | *09/23/18 23:57* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/20/18 11:42 | 09/21/18 02:49 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:32 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-3_15.36

**Date Collected: 09/13/18 12:30**
**Date Received: 09/14/18 11:15**

## Lab Sample ID: 580-80367-3

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 15:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *80 - 126* | | *09/27/18 15:42* | *1* |
| *4-Bromofluorobenzene (Surr)* | *38* | *X* | *80 - 125* | | *09/27/18 15:42* | *1* |
| *Toluene-d8 (Surr)* | *124* | *X* | *80 - 122* | | *09/27/18 15:42* | *1* |
| *Trifluorotoluene (Surr)* | *106* | | *80 - 120* | | *09/27/18 15:42* | *1* |
| *Dibromofluoromethane (Surr)* | *111* | | *77 - 120* | | *09/27/18 15:42* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 1500 | | ug/L | | | 09/27/18 22:38 | 500 |
| **Toluene** | **4000** | | 1000 | | ug/L | | | 09/27/18 22:38 | 500 |
| **Ethylbenzene** | **2200** | | 1500 | | ug/L | | | 09/27/18 22:38 | 500 |
| **Xylenes, Total** | **7300** | | 1500 | | ug/L | | | 09/27/18 22:38 | 500 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *80 - 126* | | *09/27/18 22:38* | *500* |
| *4-Bromofluorobenzene (Surr)* | *57* | *X* | *80 - 125* | | *09/27/18 22:38* | *500* |
| *Toluene-d8 (Surr)* | *129* | *X* | *80 - 122* | | *09/27/18 22:38* | *500* |
| *Trifluorotoluene (Surr)* | *107* | | *80 - 120* | | *09/27/18 22:38* | *500* |
| *Dibromofluoromethane (Surr)* | *111* | | *77 - 120* | | *09/27/18 22:38* | *500* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ethylbenzene** | **2000** | **H** | 300 | | ug/L | | | 09/28/18 22:12 | 100 |
| **Xylenes, Total** | **7500** | **H** | 300 | | ug/L | | | 09/28/18 22:12 | 100 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *113* | | *80 - 126* | | *09/28/18 22:12* | *100* |
| *4-Bromofluorobenzene (Surr)* | *115* | | *80 - 125* | | *09/28/18 22:12* | *100* |
| *Toluene-d8 (Surr)* | *106* | | *80 - 122* | | *09/28/18 22:12* | *100* |
| *Trifluorotoluene (Surr)* | *120* | | *80 - 120* | | *09/28/18 22:12* | *100* |
| *Dibromofluoromethane (Surr)* | *106* | | *77 - 120* | | *09/28/18 22:12* | *100* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline** | **37000** | | 25000 | | ug/L | | | 09/24/18 21:28 | 100 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *94* | | *50 - 150* | | *09/24/18 21:28* | *100* |
| *Trifluorotoluene (Surr)* | *116* | | *50 - 150* | | *09/24/18 21:28* | *100* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/20/18 11:42 | 09/21/18 02:53 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:37 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-4_16.74

**Date Collected: 09/13/18 12:00**
**Date Received: 09/14/18 11:15**

## Lab Sample ID: 580-80367-4

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 16:07 | 1 |
| **Toluene** | **3.9** | | 2.0 | | ug/L | | | 09/27/18 16:07 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 16:07 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 16:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *80 - 126* | | *09/27/18 16:07* | *1* |
| *4-Bromofluorobenzene (Surr)* | *66* | *X* | *80 - 125* | | *09/27/18 16:07* | *1* |
| *Toluene-d8 (Surr)* | *123* | *X* | *80 - 122* | | *09/27/18 16:07* | *1* |
| *Trifluorotoluene (Surr)* | *113* | | *80 - 120* | | *09/27/18 16:07* | *1* |
| *Dibromofluoromethane (Surr)* | *115* | | *77 - 120* | | *09/27/18 16:07* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 21:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *80 - 126* | | *09/27/18 21:48* | *1* |
| *4-Bromofluorobenzene (Surr)* | *60* | *X* | *80 - 125* | | *09/27/18 21:48* | *1* |
| *Toluene-d8 (Surr)* | *129* | *X* | *80 - 122* | | *09/27/18 21:48* | *1* |
| *Trifluorotoluene (Surr)* | *109* | | *80 - 120* | | *09/27/18 21:48* | *1* |
| *Dibromofluoromethane (Surr)* | *113* | | *77 - 120* | | *09/27/18 21:48* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/24/18 23:01 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *50 - 150* | | *09/24/18 23:01* | *1* |
| *Trifluorotoluene (Surr)* | *108* | | *50 - 150* | | *09/24/18 23:01* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/20/18 11:42 | 09/21/18 02:57 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:41 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-5_19.90

**Lab Sample ID: 580-80367-5**

**Date Collected: 09/13/18 09:45**
**Matrix: Water**
**Date Received: 09/14/18 11:15**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 16:32 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 16:32 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 16:32 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 16:32 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 16:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *95* | | *80 - 126* | | *09/27/18 16:32* | *1* |
| *4-Bromofluorobenzene (Surr)* | *60* | *X* | *80 - 125* | | *09/27/18 16:32* | *1* |
| *Toluene-d8 (Surr)* | *125* | *X* | *80 - 122* | | *09/27/18 16:32* | *1* |
| *Trifluorotoluene (Surr)* | *105* | | *80 - 120* | | *09/27/18 16:32* | *1* |
| *Dibromofluoromethane (Surr)* | *107* | | *77 - 120* | | *09/27/18 16:32* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/24/18 23:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *87* | | *50 - 150* | | *09/24/18 23:32* | *1* |
| *Trifluorotoluene (Surr)* | *108* | | *50 - 150* | | *09/24/18 23:32* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 12:48 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:45 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-6_17.09

**Date Collected: 09/13/18 10:05**
**Date Received: 09/14/18 11:15**

## Lab Sample ID: 580-80367-6

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 16:56 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 16:56 | 1 |
| **Ethylbenzene** | **12** | | 3.0 | | ug/L | | | 09/27/18 16:56 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 16:56 | 1 |
| **Xylenes, Total** | **3.4** | | 3.0 | | ug/L | | | 09/27/18 16:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *96* | | *80 - 126* | | *09/27/18 16:56* | *1* |
| *4-Bromofluorobenzene (Surr)* | *66* | *X* | *80 - 125* | | *09/27/18 16:56* | *1* |
| *Toluene-d8 (Surr)* | *125* | *X* | *80 - 122* | | *09/27/18 16:56* | *1* |
| *Trifluorotoluene (Surr)* | *103* | | *80 - 120* | | *09/27/18 16:56* | *1* |
| *Dibromofluoromethane (Surr)* | *106* | | *77 - 120* | | *09/27/18 16:56* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ethylbenzene** | **13** | **H** | 3.0 | | ug/L | | | 09/28/18 23:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *115* | | *80 - 126* | | *09/28/18 23:26* | *1* |
| *4-Bromofluorobenzene (Surr)* | *117* | | *80 - 125* | | *09/28/18 23:26* | *1* |
| *Toluene-d8 (Surr)* | *111* | | *80 - 122* | | *09/28/18 23:26* | *1* |
| *Trifluorotoluene (Surr)* | *119* | | *80 - 120* | | *09/28/18 23:26* | *1* |
| *Dibromofluoromethane (Surr)* | *110* | | *77 - 120* | | *09/28/18 23:26* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/25/18 00:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *50 - 150* | | *09/25/18 00:03* | *1* |
| *Trifluorotoluene (Surr)* | *104* | | *50 - 150* | | *09/25/18 00:03* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 12:52 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:49 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-7_23.11

**Lab Sample ID: 580-80367-7**

**Date Collected: 09/13/18 09:10**
**Date Received: 09/14/18 11:15**

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 17:21 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 17:21 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 17:21 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 17:21 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 17:21 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *97* | | *80 - 126* | | *09/27/18 17:21* | *1* |
| *4-Bromofluorobenzene (Surr)* | *62* | *X* | *80 - 125* | | *09/27/18 17:21* | *1* |
| *Toluene-d8 (Surr)* | *127* | *X* | *80 - 122* | | *09/27/18 17:21* | *1* |
| *Trifluorotoluene (Surr)* | *108* | | *80 - 120* | | *09/27/18 17:21* | *1* |
| *Dibromofluoromethane (Surr)* | *106* | | *77 - 120* | | *09/27/18 17:21* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/25/18 00:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *91* | | *50 - 150* | | *09/25/18 00:34* | *1* |
| *Trifluorotoluene (Surr)* | *119* | | *50 - 150* | | *09/25/18 00:34* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 12:57 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:54 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-8_23.24

**Date Collected: 09/13/18 09:25**
**Date Received: 09/14/18 11:15**

## Lab Sample ID: 580-80367-8

**Matrix: Water**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 17:45 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 17:45 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 17:45 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 17:45 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 17:45 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *100* | | *80 - 126* | | *09/27/18 17:45* | *1* |
| *4-Bromofluorobenzene (Surr)* | *69* | *X* | *80 - 125* | | *09/27/18 17:45* | *1* |
| *Toluene-d8 (Surr)* | *126* | *X* | *80 - 122* | | *09/27/18 17:45* | *1* |
| *Trifluorotoluene (Surr)* | *107* | | *80 - 120* | | *09/27/18 17:45* | *1* |
| *Dibromofluoromethane (Surr)* | *104* | | *77 - 120* | | *09/27/18 17:45* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/25/18 01:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *50 - 150* | | *09/25/18 01:04* | *1* |
| *Trifluorotoluene (Surr)* | *112* | | *50 - 150* | | *09/25/18 01:04* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 13:01 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 18:58 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-9_17.01

**Lab Sample ID: 580-80367-9**

**Date Collected: 09/13/18 10:25**

**Matrix: Water**

**Date Received: 09/14/18 11:15**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 18:09 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 18:09 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 18:09 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 18:09 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 18:09 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *102* | | *80 - 126* | | *09/27/18 18:09* | *1* |
| *4-Bromofluorobenzene (Surr)* | *63* | *X* | *80 - 125* | | *09/27/18 18:09* | *1* |
| *Toluene-d8 (Surr)* | *127* | *X* | *80 - 122* | | *09/27/18 18:09* | *1* |
| *Trifluorotoluene (Surr)* | *110* | | *80 - 120* | | *09/27/18 18:09* | *1* |
| *Dibromofluoromethane (Surr)* | *110* | | *77 - 120* | | *09/27/18 18:09* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/25/18 01:35 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *50 - 150* | | *09/25/18 01:35* | *1* |
| *Trifluorotoluene (Surr)* | *103* | | *50 - 150* | | *09/25/18 01:35* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 13:05 | 5 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 19:02 | 5 |

# Client Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: Tripblank-1

**Lab Sample ID: 580-80367-10**

**Date Collected: 09/13/18 00:00**
**Matrix: Water**
**Date Received: 09/14/18 11:15**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 18:34 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 18:34 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 18:34 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 18:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *Trifluorotoluene (Surr)* | *104* | | *80 - 120* | | *09/27/18 18:34* | *1* |
| *Toluene-d8 (Surr)* | *123* | *X* | *80 - 122* | | *09/27/18 18:34* | *1* |
| *1,2-Dichloroethane-d4 (Surr)* | *99* | | *80 - 126* | | *09/27/18 18:34* | *1* |
| *4-Bromofluorobenzene (Surr)* | *49* | *X* | *80 - 125* | | *09/27/18 18:34* | *1* |
| *Dibromofluoromethane (Surr)* | *102* | | *77 - 120* | | *09/27/18 18:34* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/24/18 18:53 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *50 - 150* | | *09/24/18 18:53* | *1* |
| *Trifluorotoluene (Surr)* | *118* | | *50 - 150* | | *09/24/18 18:53* | *1* |

# QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

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

**Lab Sample ID: MB 580-285037/5**
**Matrix: Water**
**Analysis Batch: 285037**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/27/18 13:41 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/27/18 13:41 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/27/18 13:41 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/27/18 13:41 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/27/18 13:41 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *80 - 126* | | *09/27/18 13:41* | *1* |
| *4-Bromofluorobenzene (Surr)* | *58* | *X* | *80 - 125* | | *09/27/18 13:41* | *1* |
| *Toluene-d8 (Surr)* | *128* | *X* | *80 - 122* | | *09/27/18 13:41* | *1* |
| *Trifluorotoluene (Surr)* | *109* | | *80 - 120* | | *09/27/18 13:41* | *1* |
| *Dibromofluoromethane (Surr)* | *107* | | *77 - 120* | | *09/27/18 13:41* | *1* |

**Lab Sample ID: LCS 580-285037/6**
**Matrix: Water**
**Analysis Batch: 285037**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 10.0 | 9.78 | | ug/L | | 98 | 75 - 128 |
| Methyl tert-butyl ether | 10.0 | 8.58 | | ug/L | | 86 | 72 - 130 |
| Toluene | 10.0 | 10.8 | | ug/L | | 108 | 75 - 120 |
| Ethylbenzene | 10.0 | 9.86 | | ug/L | | 99 | 75 - 120 |
| m-Xylene & p-Xylene | 10.0 | 9.96 | | ug/L | | 100 | 75 - 120 |
| o-Xylene | 10.0 | 8.61 | | ug/L | | 86 | 74 - 120 |
| Xylenes, Total | 20.0 | 18.6 | | ug/L | | 93 | 74 - 120 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *104* | | *80 - 126* |
| *4-Bromofluorobenzene (Surr)* | *59* | *X* | *80 - 125* |
| *Toluene-d8 (Surr)* | *109* | | *80 - 122* |
| *Trifluorotoluene (Surr)* | *110* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *107* | | *77 - 120* |

**Lab Sample ID: LCSD 580-285037/7**
**Matrix: Water**
**Analysis Batch: 285037**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 10.0 | 9.13 | | ug/L | | 91 | 75 - 128 | 7 | 14 |
| Methyl tert-butyl ether | 10.0 | 8.37 | | ug/L | | 84 | 72 - 130 | 3 | 18 |
| Toluene | 10.0 | 10.8 | | ug/L | | 108 | 75 - 120 | 0 | 13 |
| Ethylbenzene | 10.0 | 9.44 | | ug/L | | 94 | 75 - 120 | 4 | 14 |
| m-Xylene & p-Xylene | 10.0 | 9.71 | | ug/L | | 97 | 75 - 120 | 3 | 14 |
| o-Xylene | 10.0 | 8.10 | | ug/L | | 81 | 74 - 120 | 6 | 16 |
| Xylenes, Total | 20.0 | 17.8 | | ug/L | | 89 | 74 - 120 | 4 | 15 |

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

**Lab Sample ID: LCSD 580-285037/7**
**Matrix: Water**
**Analysis Batch: 285037**

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

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *103* | | *80 - 126* |
| *4-Bromofluorobenzene (Surr)* | *51* | *X* | *80 - 125* |
| *Toluene-d8 (Surr)* | *114* | | *80 - 122* |
| *Trifluorotoluene (Surr)* | *107* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *108* | | *77 - 120* |

**Lab Sample ID: MB 580-285214/5**
**Matrix: Water**
**Analysis Batch: 285214**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | | 3.0 | | ug/L | | | 09/28/18 17:33 | 1 |
| Methyl tert-butyl ether | ND | | 2.0 | | ug/L | | | 09/28/18 17:33 | 1 |
| Toluene | ND | | 2.0 | | ug/L | | | 09/28/18 17:33 | 1 |
| Ethylbenzene | ND | | 3.0 | | ug/L | | | 09/28/18 17:33 | 1 |
| Xylenes, Total | ND | | 3.0 | | ug/L | | | 09/28/18 17:33 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *108* | | *80 - 126* | | *09/28/18 17:33* | *1* |
| *4-Bromofluorobenzene (Surr)* | *110* | | *80 - 125* | | *09/28/18 17:33* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *80 - 122* | | *09/28/18 17:33* | *1* |
| *Trifluorotoluene (Surr)* | *113* | | *80 - 120* | | *09/28/18 17:33* | *1* |
| *Dibromofluoromethane (Surr)* | *108* | | *77 - 120* | | *09/28/18 17:33* | *1* |

**Lab Sample ID: LCS 580-285214/6**
**Matrix: Water**
**Analysis Batch: 285214**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 10.0 | 9.87 | | ug/L | | 99 | 75 - 128 |
| Methyl tert-butyl ether | 10.0 | 10.7 | | ug/L | | 107 | 72 - 130 |
| Toluene | 10.0 | 10.2 | | ug/L | | 102 | 75 - 120 |
| Ethylbenzene | 10.0 | 10.3 | | ug/L | | 103 | 75 - 120 |
| m-Xylene & p-Xylene | 10.0 | 10.6 | | ug/L | | 106 | 75 - 120 |
| o-Xylene | 10.0 | 10.7 | | ug/L | | 107 | 74 - 120 |
| Xylenes, Total | 20.0 | 21.3 | | ug/L | | 107 | 74 - 120 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *106* | | *80 - 126* |
| *4-Bromofluorobenzene (Surr)* | *108* | | *80 - 125* |
| *Toluene-d8 (Surr)* | *99* | | *80 - 122* |
| *Trifluorotoluene (Surr)* | *108* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *112* | | *77 - 120* |

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

**Lab Sample ID: LCSD 580-285214/7** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 285214**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 10.0 | 9.29 | | ug/L | | 93 | 75 - 128 | 6 | 14 |
| Methyl tert-butyl ether | | | 10.0 | 10.8 | | ug/L | | 108 | 72 - 130 | 1 | 18 |
| Toluene | | | 10.0 | 10.6 | | ug/L | | 106 | 75 - 120 | 4 | 13 |
| Ethylbenzene | | | 10.0 | 10.5 | | ug/L | | 105 | 75 - 120 | 1 | 14 |
| m-Xylene & p-Xylene | | | 10.0 | 11.0 | | ug/L | | 110 | 75 - 120 | 4 | 14 |
| o-Xylene | | | 10.0 | 11.0 | | ug/L | | 110 | 74 - 120 | 3 | 16 |
| Xylenes, Total | | | 20.0 | 22.0 | | ug/L | | 110 | 74 - 120 | 3 | 15 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1,2-Dichloroethane-d4 (Surr)* | *101* | | *80 - 126* |
| *4-Bromofluorobenzene (Surr)* | *113* | | *80 - 125* |
| *Toluene-d8 (Surr)* | *104* | | *80 - 122* |
| *Trifluorotoluene (Surr)* | *110* | | *80 - 120* |
| *Dibromofluoromethane (Surr)* | *105* | | *77 - 120* |

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

**Lab Sample ID: MB 580-291699/6** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 291699**

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

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

**Lab Sample ID: LCS 580-291699/7** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 291699**

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

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

**Lab Sample ID: LCSD 580-291699/8** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 291699**

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

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

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

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

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

**Lab Sample ID: MB 580-291702/6**
**Matrix: Water**
**Analysis Batch: 291702**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | | 250 | | ug/L | | | 09/24/18 16:49 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *50 - 150* | | *09/24/18 16:49* | *1* |
| *Trifluorotoluene (Surr)* | *123* | | *50 - 150* | | *09/24/18 16:49* | *1* |

**Lab Sample ID: LCS 580-291702/7**
**Matrix: Water**
**Analysis Batch: 291702**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | | | 1000 | 924 | | ug/L | | 92 | 79 - 120 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *50 - 150* |
| *Trifluorotoluene (Surr)* | *128* | | *50 - 150* |

**Lab Sample ID: LCSD 580-291702/8**
**Matrix: Water**
**Analysis Batch: 291702**

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

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | | | 1000 | 896 | | ug/L | | 90 | 79 - 120 | 3 | 10 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *50 - 150* |
| *Trifluorotoluene (Surr)* | *125* | | *50 - 150* |

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

**Lab Sample ID: MB 580-284448/22-A**
**Matrix: Water**
**Analysis Batch: 284542**

**Client Sample ID: Method Blank**
**Prep Type: Total Recoverable**
**Prep Batch: 284448**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/20/18 11:42 | 09/21/18 00:41 | 5 |

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

**Lab Sample ID: LCS 580-284448/23-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 284542** — **Prep Batch: 284448**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Lead | 1000 | 1050 | | ug/L | | 105 | 80 - 120 |

**Lab Sample ID: LCSD 580-284448/24-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 284542** — **Prep Batch: 284448**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Lead | 1000 | 1000 | | ug/L | | 100 | 80 - 120 | 5 | 20 |

**Lab Sample ID: MB 580-284760/22-A** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 284868** — **Prep Batch: 284760**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/24/18 11:53 | 09/25/18 11:07 | 5 |

**Lab Sample ID: LCS 580-284760/23-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 284868** — **Prep Batch: 284760**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Lead | 1000 | 997 | | ug/L | | 100 | 80 - 120 |

**Lab Sample ID: LCSD 580-284760/24-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 284868** — **Prep Batch: 284760**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Lead | 1000 | 989 | | ug/L | | 99 | 80 - 120 | 1 | 20 |

**Lab Sample ID: LCS 580-284932/15-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 285175** — **Prep Batch: 284932**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Lead | 1000 | 1020 | | ug/L | | 102 | 80 - 120 |

**Lab Sample ID: LCSD 580-284932/16-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 285175** — **Prep Batch: 284932**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Lead | 1000 | 1030 | | ug/L | | 103 | 80 - 120 | 1 | 20 |

**Lab Sample ID: MB 580-284458/14-B** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Dissolved**
**Analysis Batch: 285175** — **Prep Batch: 284932**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 4.0 | | ug/L | | 09/26/18 10:13 | 09/27/18 17:41 | 5 |

# QC Sample Results

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

**Lab Sample ID: 580-80367-1 MS**
**Matrix: Water**
**Analysis Batch: 285175**

**Client Sample ID: MW-1_14.69**
**Prep Type: Dissolved**
**Prep Batch: 284932**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 1000 | 1050 | | ug/L | | 105 | 80 - 120 | | |

**Lab Sample ID: 580-80367-1 MSD**
**Matrix: Water**
**Analysis Batch: 285175**

**Client Sample ID: MW-1_14.69**
**Prep Type: Dissolved**
**Prep Batch: 284932**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | | 1000 | 1100 | | ug/L | | 110 | 80 - 120 | 5 | 20 |

**Lab Sample ID: 580-80367-1 DU**
**Matrix: Water**
**Analysis Batch: 285175**

**Client Sample ID: MW-1_14.69**
**Prep Type: Dissolved**
**Prep Batch: 284932**

| 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: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-1_14.69 — Lab Sample ID: 580-80367-1

**Date Collected: 09/13/18 11:30** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 14:54 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291699 | 09/23/18 23:26 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:18 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 17:54 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284448 | 09/20/18 11:42 | JKM | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284542 | 09/21/18 02:45 | FCW | TAL SEA |

## Client Sample ID: MW-2_12.35 — Lab Sample ID: 580-80367-2

**Date Collected: 09/13/18 11:00** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 15:18 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291699 | 09/23/18 23:57 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:18 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:32 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284448 | 09/20/18 11:42 | JKM | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284542 | 09/21/18 02:49 | FCW | TAL SEA |

## Client Sample ID: MW-3_15.36 — Lab Sample ID: 580-80367-3

**Date Collected: 09/13/18 12:30** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 15:42 | T1W | TAL SEA |
| Total/NA | Analysis | 8260C | DL | 500 | 285037 | 09/27/18 22:38 | T1W | TAL SEA |
| Total/NA | Analysis | 8260C | RADL | 100 | 285214 | 09/28/18 22:12 | DSO | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 100 | 291702 | 09/24/18 21:28 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:18 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:37 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284448 | 09/20/18 11:42 | JKM | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284542 | 09/21/18 02:53 | FCW | TAL SEA |

## Client Sample ID: MW-4_16.74 — Lab Sample ID: 580-80367-4

**Date Collected: 09/13/18 12:00** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 16:07 | T1W | TAL SEA |

# Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-4_16.74 — Lab Sample ID: 580-80367-4

**Date Collected: 09/13/18 12:00** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | RA | 1 | 285037 | 09/27/18 21:48 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/24/18 23:01 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:18 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:41 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284448 | 09/20/18 11:42 | JKM | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284542 | 09/21/18 02:57 | FCW | TAL SEA |

## Client Sample ID: MW-5_19.90 — Lab Sample ID: 580-80367-5

**Date Collected: 09/13/18 09:45** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 16:32 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/24/18 23:32 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:18 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:45 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284760 | 09/24/18 11:53 | T1H | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284868 | 09/25/18 12:48 | FCW | TAL SEA |

## Client Sample ID: MW-6_17.09 — Lab Sample ID: 580-80367-6

**Date Collected: 09/13/18 10:05** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 16:56 | T1W | TAL SEA |
| Total/NA | Analysis | 8260C | RA | 1 | 285214 | 09/28/18 23:26 | DSO | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/25/18 00:03 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:20 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:49 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284760 | 09/24/18 11:53 | T1H | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284868 | 09/25/18 12:52 | FCW | TAL SEA |

## Client Sample ID: MW-7_23.11 — Lab Sample ID: 580-80367-7

**Date Collected: 09/13/18 09:10** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 17:21 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/25/18 00:34 | JSM | TAL SEA |

# Lab Chronicle

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Client Sample ID: MW-7_23.11 — Lab Sample ID: 580-80367-7

**Date Collected: 09/13/18 09:10** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:20 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:54 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284760 | 09/24/18 11:53 | T1H | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284868 | 09/25/18 12:57 | FCW | TAL SEA |

## Client Sample ID: MW-8_23.24 — Lab Sample ID: 580-80367-8

**Date Collected: 09/13/18 09:25** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 17:45 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/25/18 01:04 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:20 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 18:58 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284760 | 09/24/18 11:53 | T1H | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284868 | 09/25/18 13:01 | FCW | TAL SEA |

## Client Sample ID: MW-9_17.01 — Lab Sample ID: 580-80367-9

**Date Collected: 09/13/18 10:25** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 18:09 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/25/18 01:35 | JSM | TAL SEA |
| Dissolved | Filtration | FILTRATION | | | 284458 | 09/20/18 13:20 | JKM | TAL SEA |
| Dissolved | Prep | 3005A | | | 284932 | 09/26/18 10:13 | JKM | TAL SEA |
| Dissolved | Analysis | 6020A | | 5 | 285175 | 09/27/18 19:02 | FCW | TAL SEA |
| Total Recoverable | Prep | 3005A | | | 284760 | 09/24/18 11:53 | T1H | TAL SEA |
| Total Recoverable | Analysis | 6020A | | 5 | 284868 | 09/25/18 13:05 | FCW | TAL SEA |

## Client Sample ID: Tripblank-1 — Lab Sample ID: 580-80367-10

**Date Collected: 09/13/18 00:00** — **Matrix: Water**
**Date Received: 09/14/18 11:15**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260C | | 1 | 285037 | 09/27/18 18:34 | T1W | TAL SEA |
| Total/NA | Analysis | NWTPH-Gx | | 1 | 291702 | 09/24/18 18:53 | JSM | TAL SEA |

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

# Accreditation/Certification Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

## Laboratory: TestAmerica Seattle

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

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

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

| Analysis Method | Prep Method | Matrix | Analyte |
|---|---|---|---|
| 6020A | 3005A | Water | Lead |
| 8260C | | Water | Xylenes, Total |

# Sample Summary

Client: Antea USA, Inc.
Project/Site: BP - ARCO 818

TestAmerica Job ID: 580-80367-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 580-80367-1 | MW-1_14.69 | Water | 09/13/18 11:30 | 09/14/18 11:15 |
| 580-80367-2 | MW-2_12.35 | Water | 09/13/18 11:00 | 09/14/18 11:15 |
| 580-80367-3 | MW-3_15.36 | Water | 09/13/18 12:30 | 09/14/18 11:15 |
| 580-80367-4 | MW-4_16.74 | Water | 09/13/18 12:00 | 09/14/18 11:15 |
| 580-80367-5 | MW-5_19.90 | Water | 09/13/18 09:45 | 09/14/18 11:15 |
| 580-80367-6 | MW-6_17.09 | Water | 09/13/18 10:05 | 09/14/18 11:15 |
| 580-80367-7 | MW-7_23.11 | Water | 09/13/18 09:10 | 09/14/18 11:15 |
| 580-80367-8 | MW-8_23.24 | Water | 09/13/18 09:25 | 09/14/18 11:15 |
| 580-80367-9 | MW-9_17.01 | Water | 09/13/18 10:25 | 09/14/18 11:15 |
| 580-80367-10 | Tripblank-1 | Water | 09/13/18 00:00 | 09/14/18 11:15 |

Atlantic Richfield Company
A BP affiliated company

# Laboratory Management Program LaMP Chain of Custody Record

Loc: 580
**80367**
Page 1 of 1

**BP/ARC Project Name:** ARCO 818
**BP/ARC Facility No:** ARCO Facility No. 00818
**Req Due Date (mm/dd/yy):** Standart TAT
**Rush TAT:** Yes ____ No X
**Lab Work Order Number:**

| | | | | | |
|---|---|---|---|---|---|
| Lab Name: | Test America | BP/ARC Facility Address: | 3201 20th Ave W | Consultant/Contractor: | Antea Group |
| Lab Address: | 5755 8th Street East, Tacoma, WA 98424 | City, State, ZIP Code: | Seattle, WA | Consultant/Contractor Project No: | 00818AA271-10106 |
| Lab PM: | Elaine Walker | Lead Regulatory Agency: | Washington State Department of Ecology | Address: | 4006 148th Ave NE, Redmond, WA 98052 |
| Lab Phone: | 253.248.4972 | California Global ID No.: | NA | Consultant/Contractor PM: | Megan Richard |
| Lab Shipping Accnt: | | Enfos Proposal No: | 009VF-0004/WR313795 | Phone: | 425.498.7711 |
| Lab Bottle Order No: | | Accounting Mode: | Provision ____ OOC-BU ____ OOC-RM ____ | Email EDD To: | megan.richard@anteagroup.com |
| Other Info: | Elaine.Walker@testamericainc.com | Stage: | Activity: | Invoice To: | BP/ARC X Contractor ____ |

BP/ARC EBM: Wade Melton
EBM Phone: 360-594-7978
EBM Email: wade.melton@bp.com

Report Type & QC Level: Standard X w/ Access; Full Data Package ____

| Lab No. | Sample Description | Date | Time | Soil / Solid | Water / Liquid | Air / Vapor | | Total Number of Containers | Unpreserved | $H_2SO_4$ | $HNO_3$ | HCl | Na2S2O3 | | BTEX by EPA 8260 | MTBE by EPA 8260 | NWTPH-Gx | NWTPH-Dx | Pb-T by EPA 6020 | Pb-D by EPA 6020 | | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MW-1 _ 14.69 | 09/13/18 | 1130 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-2 _ 12.35 | 9.13.18 | 1100 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-3 _ 15.36 | 9.13.18 | 1230 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-4 _ 16.74 | 9.13.18 | 1200 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-5 _ 19.90 | 9.13.18 | 0945 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-6 _ 17.09 | 9.13.18 | 1005 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-7 _ 23.11 | 9.13.18 | 0910 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-8 _ 23.24 | 9.13.18 | 0925 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | MW-9 _ 17.01 | 9.13.18 | 1025 | | X | | | 8 | 1 | | 1 | 6 | | | X | X | X | | X | X | | | | | |
| | Tripblank-1 | 9.13.18 | 0000 | | X | | | 6 | | | | 6 | | | X | | X | | | | | | | | |

580-80367 Chain of Custody

Therm. ID: A2 Cor: 1.9 ° Unc: 1.6 °
Cooler Dsc: Lrg Blue
Packing: Bubble
Cust. Seal: Yes ____ No X
Ice/Packs/Dry Ice/None
FedEx: ____
UPS: ____
Lab Cour: X
Other: ____

Sampler's Name: Bethany Erickson
Sampler's Company: Antea Group
Shipment Method: Ship Date:
Shipment Tracking No:

| Relinquished By / Affiliation | Date | Time | Accepted By / Affiliation | Date | Time |
|---|---|---|---|---|---|
| Bethany Erickson / Antea Group | 9.14.18 | 1115 | B. Glass SEA-TA | 9.14.18 | 1115 |

**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: 580-80367-1

**Login Number: 80367**
**List Number: 1**
**Creator: Gall, Brandon A**

**List Source: TestAmerica Seattle**

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

January 16, 2019

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

RE: Alternative Detector used for TPH Quantitation

Dear Megan Richard:

It is the policy of TestAmerica to conduct its business with honesty and integrity, to produce accurate and usable environmental analytical test results and related services and to provide the best possible service to our clients. As such, we routinely conduct internal data reviews to assess our adherence to method requirements and Quality Assurance protocols. If any issues are noted during these reviews that impact the quality of data, we will notify affected clients and correct the issue.

During a recent internal data review, TestAmerica Seattle discovered that a dual detector instrument configured with a Photoionization Detector (PID) and a Flame Ionization Detector (FID) was using the incorrect detector for quantitation of TPH by Method NWTPH-Gx. The PID is typically used for analysis of aromatic compounds, such as BTEX, while the FID is a non-selective detector used for analysis of gasoline range petroleum hydrocarbon compounds. The PID detects many of the components of gasoline, but is more selective. The instrument was collecting data from both detectors, but due to a software configuration issue, the data from the PID detector was being displayed as the primary detector, and it was not clearly indicated on the reported data which detector was being used for quantitation. All QC passed on the PID, however re-evaluation of the data on the FID indicated a potential low bias based on low percent difference (%D) of one of the initial calibration verifications (ICVs) and some of the continuing calibration verifications (CCVs). A summary of the compared results, are available below. A summary of the compared results, are available below.

TestAmerica is providing you this summary, and may provide a revised report to reflect results using the FID, as requested.

| Project | Sample ID | Client ID | Reported PID Result | FID Result | Units |
|---|---|---|---|---|---|
| BP -ARCO 980 | 580-81986-F-1 | MW-2_8.93 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-2 | MW-4_17.40 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-3 | MW-8_16.66 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-4 | MW-9_17.71 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-5 | MW-10_16.14 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-6 | MW-11_17.42 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-F-7 | MW-12_13.10 | ND | ND | ug/L |
| BP -ARCO 980 | 580-81986-G-8 | B1 (JPHC)_13.50 | 2400 | 2500 | ug/L |
| BP -ARCO 980 | 580-81986-B-9 | Tripblank-1 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-1 | MW-2_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-4 | MW-5_20181127 | ND | ND | ug/L |

| | | | | | |
|---|---|---|---|---|---|
| BP - OPLC - Castle Rock | 580-82200-A-5 | MW-6_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-6 | MW-7_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-7 | MW-8_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-B-8 | MW-9_20181127 | 1100 | 1100 | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-9 | MW-10_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-10 | MW-11_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-11 | MW-12_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-12 | RW-1_20181127 | 7900 | 8000 | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-13 | Utility Well_20181127 | ND | ND | ug/L |
| BP - OPLC - Castle Rock | 580-82200-A-15 | Trip Blank -1 | ND | ND | ug/L |
| BP -ARCO 980 | 580-82158-D-1-A | GSG-4-5 | ND | ND | mg/Kg |
| BP-ARCO 00980 | 580-80301-E-5 | MW-10-16.81 | ND | ND | ug/L |
| BP-ARCO 00980 | 580-80301-E-6 | MW-11-17.96 | ND | ND | ug/L |
| BP-ARCO 00980 | 580-80301-E-7 | MW-12-13.57 | ND | ND | ug/L |
| BP-ARCO 00980 | 580-80301-E-8 | B1 (JPHC)-14.02 | 1500 | 1600 | ug/L |
| BP-ARCO 00980 | 580-80301-E-9 | B3 (JPHC)-15.18 | ND | ND | ug/L |
| BP-ARCO 00980 | 580-80301-E-10 | Dup-1 | 1100 | 1200 | ug/L |
| BP-ARCO 00980 | 580-80301-E-11 | Tripblank-1 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-D-1 | MW-1_14.69 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-D-2 | MW-2_12.35 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-E-3 | MW-3_15.36 | 46000 | 37000 | ug/L |
| BP - ARCO 818 | 580-80367-D-4 | MW-4_16.74 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-E-5 | MW-5_19.90 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-H-6 | MW-6_17.09 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-F-7 | MW-7_23.11 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-D-8 | MW-8_23.24 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-G-9 | MW-9_17.01 | ND | ND | ug/L |
| BP - ARCO 818 | 580-80367-C-10 | Tripblank-1 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-B-2 | MW-2_11.43 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-B-3 | MW-3_9.85 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-B-4 | MW-4_6.82 | 1100 | 710 | ug/L |
| BP - ARCO 5243 | 580-80698-B-5 | MW-5_6.56 | ND | ND | ug/L |

| | | | | | |
|---|---|---|---|---|---|
| BP - ARCO 5243 | 580-80698-B-6 | MW-6_7.18 | 1400 | 900 | ug/L |
| BP - ARCO 5243 | 580-80698-B-7 | MW-7_6.35 | 1600 | 1020 | ug/L |
| BP - ARCO 5243 | 580-80698-B-8 | MW-8_7.64 | 2200 | 1400 | ug/L |
| BP - ARCO 5243 | 580-80698-B-9 | MW-9_8.10 | 690 | 450 | ug/L |
| BP - ARCO 5243 | 580-80698-B-10 | MW-10_8.48 | 2600 | 1700 | ug/L |
| BP - ARCO 5243 | 580-80698-B-11 | MW-11_9.16 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-C-12 | VE-1_6.31 | 2200 | 2100 | ug/L |
| BP - ARCO 5243 | 580-80698-B-13 | GWE-1_6.88 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-B-15 | Tripblank-1 | ND | ND | ug/L |
| BP - ARCO 5243 | 580-80698-C-14 | Dup-1 | ND | ND | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-A-1 | OPL-W-1_20180927 | ND | ND | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-B-2 | OPL-W-2_20180927 | ND | ND | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-B-3 | OPL-W-3_20180927 | ND | ND | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-B-4 | OPL-W-4_20180927 | 3300 | 3100 | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-C-5 | OPL-W-6_20180927 | ND | ND | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-B-6 | OPL-W-7_20180927 | 6800 | 6100 | ug/L |
| BP - OPLC - Tacoma DF | 580-80802-B-7 | Trip Blank-1 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-1 | MW-1_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-2 | MW-3_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-3 | MW-4_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-4 | MW-5_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-5 | MW-6_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-6 | MW-7_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-7 | MW-8_20181009 | 610 | 580 | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-8 | MW-9_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-B-9 | MW-10_20181009 | ND | ND | ug/L |
| BP - OPLC - Whatcom Creek | 580-81076-D-10 | MW-11_20181009 | ND | ND | ug/L |

TestAmerica has corrected the software configuration, and is implementing additional review measures for instrument configuration to avoid such an occurrence in the future. TestAmerica regrets the inconvenience that has resulted from this issue. However, it is our policy to always be proactive in correcting errors, performing internal critical reviews and forthrightly reporting the results. We look forward to continuing our relationship and stand by our commitment of providing high quality data and service.

If you have questions or need further information please feel free to contact me at the laboratory (253-248-4968) or at email Terri.Torres@TestAmericinc.com.

Sincerely,

Terri Torres
Quality Assurance Manager