



# Voluntary Cleanup Program

Washington State Department of Ecology  
Toxics Cleanup Program

## REQUEST FOR OPINION FORM

Use this form to request a written opinion on your planned or completed independent remedial action under the Voluntary Cleanup Program (VCP). Attach to this form the plans or reports documenting the remedial action. Please submit only one form for each request.

### Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are requesting a written opinion under the VCP. This information may be found on the VCP Agreement.

Facility/Site Name: Former Group Health DSSF

Facility/Site Address: 801 SW 16<sup>th</sup> Street, Renton, WA 98057

Facility/Site No: 16471336

VCP Project No.: 1770

### Step 2: REQUEST WRITTEN OPINION ON PLAN OR REPORT

What type of independent remedial action plan or report are you submitting to Ecology for review under the VCP? Please check all that apply.

- Remedial investigation plan
- Remedial investigation report
- Feasibility study report
- Property cleanup\* plan (\* cleanup of one or more parcels located within the Site)
- Property cleanup\* report
- Site cleanup plan
- Site cleanup report
- Other – please specify: Quarterly Groundwater Monitoring Report

Do you want Ecology to provide you with a written opinion on the planned or completed independent remedial action?

- Yes    No

Please note that Ecology’s opinion will be limited to:

- Whether the planned or completed remedial action at the site meets the substantive requirements of the Model Toxics Control Act (MTCA), and/or
- Whether further remedial action is necessary at the site under MTCA.

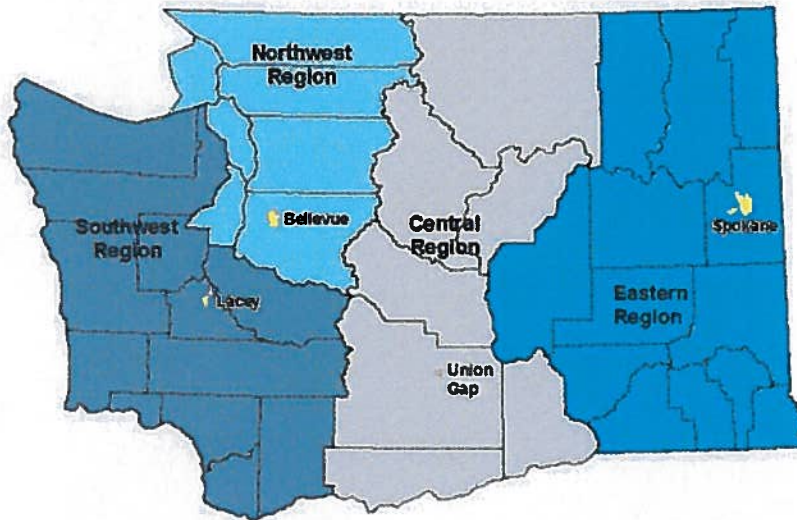
### Step 3: REPRESENTATIONS AND SIGNATURE

The undersigned representative of the Customer hereby certifies that he or she is fully authorized to request services from Ecology under the Agreement for this VCP Project.

Name: Anthony Palmieri		Title: Project Geologist	
Signature: <i>Anthony Palmieri</i>		Date: 10/25/2016	
Organization: AECOM			
Mailing address: 1111 3 <sup>rd</sup> Avenue, Suite 1600			
City: Seattle		State: WA	Zip code: 98101
Phone: 206.438.2700	Fax: .	E-mail: anthony.palmieri@aecom.com	

### Step 4: SUBMITTAL

Please mail your completed form and the independent remedial action plan or report that you are requesting Ecology review to the site manager Ecology assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



<b>Northwest Region:</b> Attn: VCP Coordinator 3190 160 <sup>th</sup> Ave. SE Bellevue, WA 98008-5452	<b>Central Region:</b> Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
<b>Southwest Region:</b> Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	<b>Eastern Region:</b> Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

October 25, 2016

Ms. Heather Vick  
Washington Department of Ecology  
Toxics Cleanup Program  
3190 160<sup>th</sup> Southeast  
Bellevue, WA

Letter Report  
Groundwater Monitoring Results  
Former Group Health DSSF  
Facility/Site No.: 16471336  
VCP Project No.: 1770  
Cleanup Site ID No.: 5599  
801 SW 16<sup>th</sup> Street  
Renton, Washington  
AECOM Job Number: 33760336

Dear Ms. Vick:

## **INTRODUCTION**

On behalf of Group Health, AECOM is providing this letter report summarizing the results of groundwater monitoring conducted at the former Group Health Distribution and Support Services Facility (DSSF) located at 801 SW 16th Street in Renton, Washington (subject property) (Figure 1). Groundwater monitoring was conducted at the subject property to evaluate gasoline constituents in the groundwater associated with a former gasoline underground storage tank (UST) to support a no further action (NFA) determination. The work was performed in accordance with our Sampling and Analysis Plan (SAP) submitted to the Washington Department of Ecology (Ecology) on March 10, 2015. Historic groundwater monitoring conducted at the property has detected benzene concentrations in one monitoring well (MW-13) slightly above the applicable Model Toxics Control Act (MTCA) Method A cleanup level (5 ug/L) as summarized in Table 1. The wells were last sampled in 2008 and quarterly sampling presented herein was conducted to assess the current groundwater quality.

## **SCOPE AND SAMPLING PROCEDURES**

As requested by Ecology, quarterly groundwater monitoring was implemented over a period of one year. Groundwater monitoring was completed from August 2015 through May 2016 at

monitoring wells MW-10, MW-13, MW-27, and GWE-1 (Figure 2). The samples were analyzed for gasoline-range hydrocarbons by Method NWTPH-Gasoline extended and benzene, toluene, ethylbenzene and xylenes (BTEX) by Method 8260C. The samples were collected in accordance with the methods prescribed in the SAP. The samples were stored in a chilled cooler and delivered to Fremont Analytical, an Ecology-accredited laboratory, under chain-of-custody protocol.

## FINDINGS

Groundwater elevation data collected during the monitoring events is summarized in Table 2 and the corresponding groundwater elevation contour maps for August 2015 and February 2016 are presented on Figures 3 and 4, respectively. Groundwater elevations ranged from approximately 9 to 11.5 feet above mean sea level. Groundwater flow during the sampling events was primarily westerly which is consistent with previous groundwater flow data. Historical groundwater elevation data is summarized in Table 3.

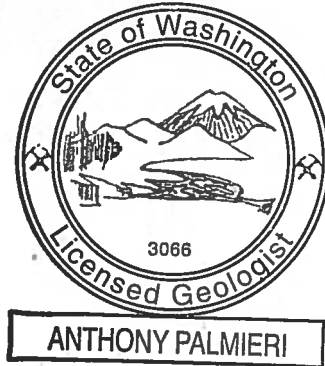
The groundwater monitoring analytical results are presented in Table 4 and a summary of quarterly benzene detections are depicted on Figure 5. The laboratory analytical reports are provided in Appendix A. Gasoline-range hydrocarbons, toluene, ethylbenzene and xylenes were not detected in any of the groundwater samples collected during the quarterly sampling events. Benzene was only detected in MW-10 and MW-13. Benzene concentrations ranged from 1.46 ug/L to 2.48 ug/L in MW-10, which is below the MTCA Method A cleanup level of 5 ug/L. Benzene was detected in MW-13 in three of the four sampling events and ranged in concentrations from 1.02 ug/l to 5.27 ug/L.

## CONCLUSIONS AND RECOMMENDATIONS

Based on the quarterly groundwater monitoring conducted in 2015 and 2016 at the former Group Health DSSF facility, AECOM has drawn the following conclusions:

- Benzene concentrations at MW-13 fluctuated between non-detect to 5.27 ug/L during the quarterly sampling. Based on the historic benzene levels at this well (Table 4), significant concentrations of benzene have not been detected since 2000. It is apparent that gasoline constituents have naturally attenuated and that significant “rebound” in benzene concentrations is unlikely to occur.
- Based on these findings, it is AECOM's opinion that further groundwater monitoring is not warranted. On behalf of Group Health, AECOM is requesting Ecology to consider providing a NFA determination for this property.

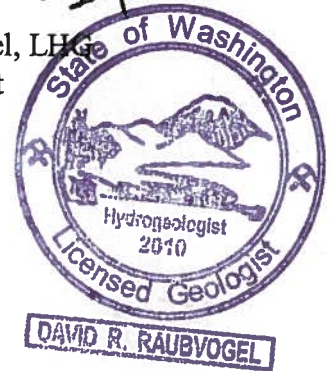
We trust this report meets your needs. If you have any questions or require additional information, please contact us at 206-438-2700.



AECOM

Anthony Palmieri, LG  
Project Geologist

David Raubvogel, LHG  
Senior Geologist



Cc: Mr. Alex Truchot, CB Richard Ellis

Attachments:

- Figure 1 – Site Location
- Figure 2 – Site Plan
- Figure 3 – First Quarter Groundwater Elevation Contour Map
- Figure 4 – Third Quarter Groundwater Elevation Contour Map
- Figure 5 – Summary of Quarterly Benzene Concentrations
- Table 1 – Summary of Historical Groundwater Analytical Data
- Table 2 – Summary of Quarterly Groundwater Elevation Data
- Table 3 – Summary of Historical Groundwater Elevation Data
- Table 4 – Groundwater Monitoring Analytical Results
- Appendix A – Laboratory Analytical Data

## FIGURES



Map created with TOPO!™ © 1997 Wildflower Productions, www.topo.com, based on USGS topographic map



Approximate Scale in Miles

Figure 1  
**Site Location Map**

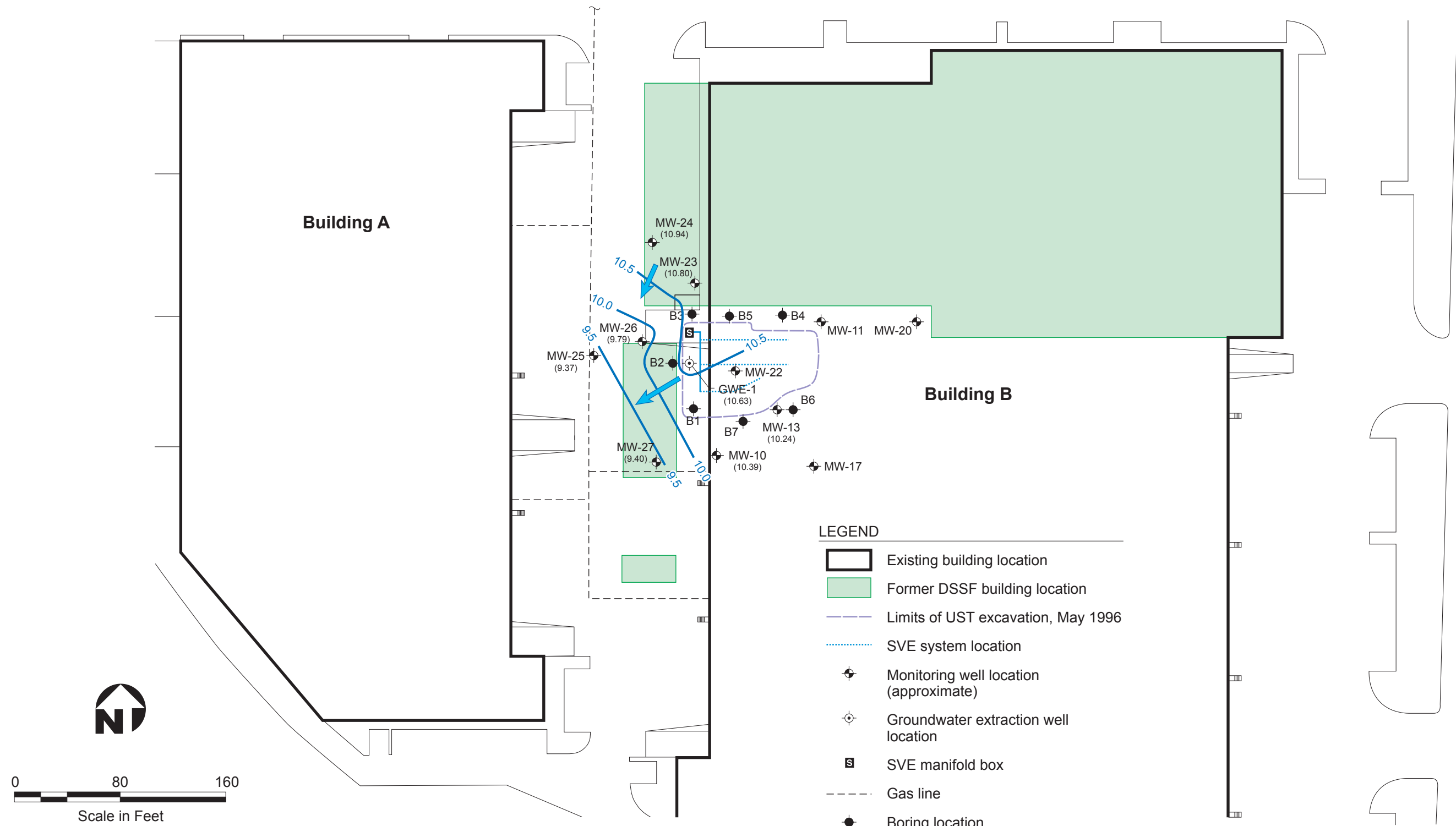
SW 16th Street



LEGEND

- Existing building location
- Former DSSF building location
- Limits of UST excavation, May 1996
- SVE system location
- Monitoring well location (approximate)
- Groundwater extraction well location
- SVE manifold box
- Gas line
- Boring location

SW 16th Street



LEGEND

- Existing building location
- Former DSSF building location
- Limits of UST excavation, May 1996
- SVE system location
- Monitoring well location (approximate)
- Groundwater extraction well location
- SVE manifold box
- Gas line
- Boring location
- 10.0 Groundwater elevation contour (feet above mean sea level)
- Groundwater flow direction

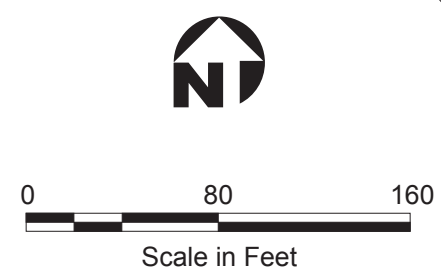


Figure 3  
**First Quarter Groundwater Elevation Contour Map – August 27, 2015**

SW 16th Street

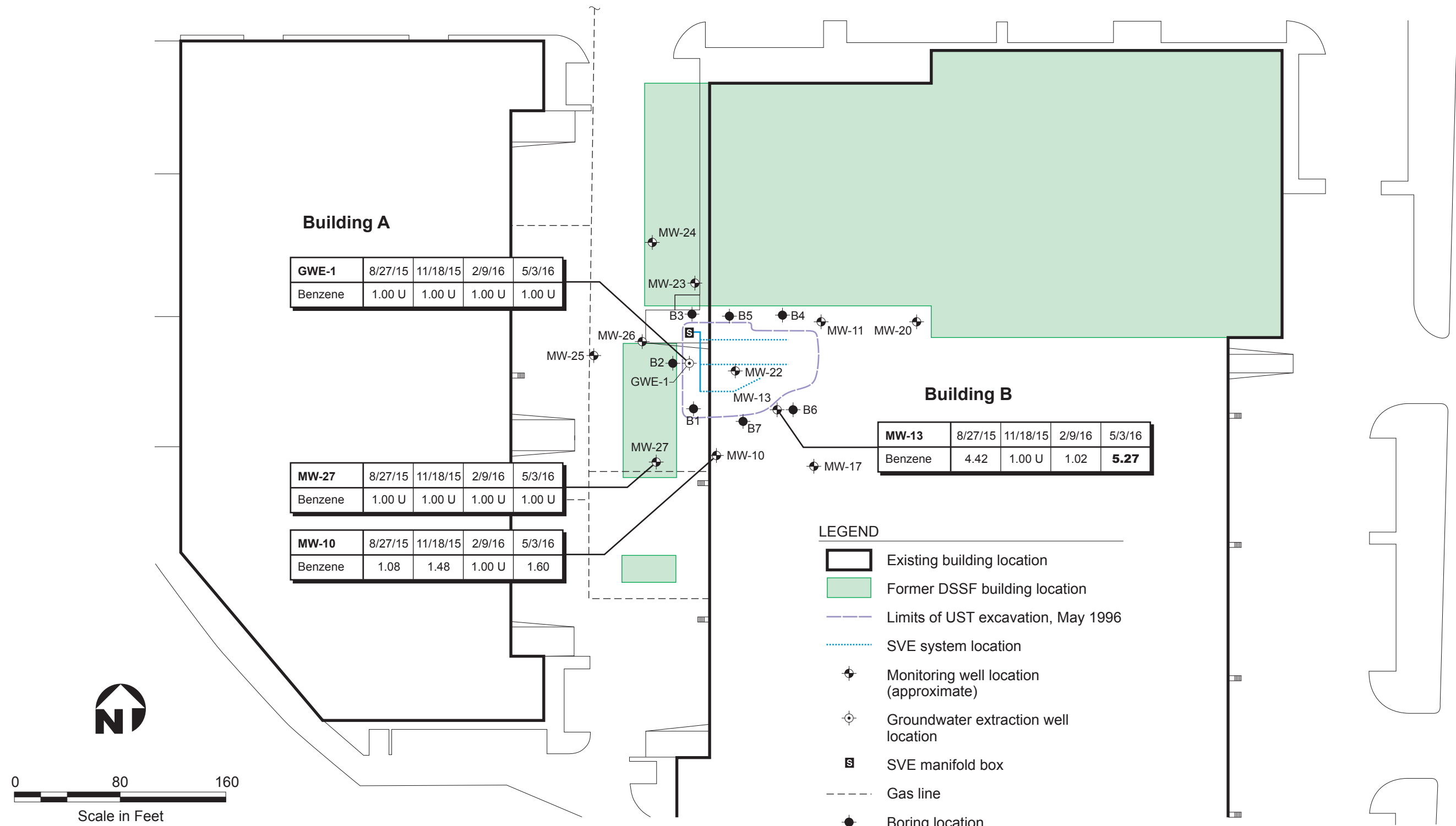


LEGEND

- Existing building location
- Former DSSF building location
- Limits of UST excavation, May 1996
- SVE system location
- Monitoring well location (approximate)
- Groundwater extraction well location
- SVE manifold box
- Gas line
- Boring location
- 12.0 Groundwater elevation contour (feet above mean sea level)
- Groundwater flow direction

Figure 4  
**Third Quarter Groundwater Elevation Contour Map – February 9, 2016**

SW 16th Street



**Building A**

<b>GWE-1</b>	8/27/15	11/18/15	2/9/16	5/3/16
Benzene	1.00 U	1.00 U	1.00 U	1.00 U

<b>MW-27</b>	8/27/15	11/18/15	2/9/16	5/3/16
Benzene	1.00 U	1.00 U	1.00 U	1.00 U

<b>MW-10</b>	8/27/15	11/18/15	2/9/16	5/3/16
Benzene	1.08	1.48	1.00 U	1.60

**Building B**

<b>MW-13</b>	8/27/15	11/18/15	2/9/16	5/3/16
Benzene	4.42	1.00 U	1.02	<b>5.27</b>

**LEGEND**

- Existing building location
- Former DSSF building location
- Limits of UST excavation, May 1996
- SVE system location
- Monitoring well location (approximate)
- Groundwater extraction well location
- SVE manifold box
- Gas line
- Boring location
- Not detected above reporting limits
- Above MTCA method A groundwater cleanup level

Figure 5  
**Summary of Quarterly Benzene Concentrations (µg/L)**

## **TABLES**

**Table 1**  
**Summary of Historical Groundwater Analytical Data**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Sample Date	Volatile Organic Compounds (mg/L)				Gasoline Range Hydrocarbons (mg/L)
		Benzene	Toluene	Ethylbenzene	Xylenes	
MW-10	07/23/97	ND	ND	ND	ND	ND
	09/17/98	4.00	ND	ND	ND	537.0
	08/25/99	2.85	0.748	ND	ND	ND
	11/29/99	<b>5.98</b>	ND	ND	ND	ND
	02/24/00	<b>16.9</b>	ND	ND	ND	52.8
	06/16/00	2.03	ND	ND	ND	ND
	10/19/07	2.05	0.500 U	0.500 U	1.00 U	50.0 U
	01/15/08	1.46	0.500 U	0.500 U	1.00 U	50.0 U
	04/10/08	2.31	0.500 U	0.500 U	1.00 U	50.0 U
	07/29/08	2.48	0.500 U	0.500 U	1.00 U	50.0 U
MW-11	12/17/96	4.60	ND	ND	ND	ND
	07/23/97	4.10	ND	ND	ND	ND
	09/17/98	2.78	6.08	ND	ND	70.7
	08/25/99	3.18	4.03	ND	ND	73.2
	11/29/99	1.8	0.594	ND	ND	119
MW-13	12/17/96	<b>759</b>	9.0	24.0	<b>65.0</b>	265.0
	07/23/97	<b>334</b>	4.0	15.0	<b>34.0</b>	200.0
	09/17/98	<b>65.1</b>	0.84	2.34	5.94	162.0
	08/25/99	<b>22.9</b>	0.83	ND	1.48	61.3
	11/29/99	<b>61.9</b>	1.17	2.59	7.47	258.0
	02/24/00	<b>127.0</b>	1.40	4.70	10.90	273.0
	06/16/00	<b>36.3</b>	ND	0.945	2.66	78.2
	10/19/07	NS	NS	NS	NS	NS
	01/15/08	0.500 U	0.500 U	0.500 U	1.2	50.0 U
	04/10/08	3.41	0.500 U	0.500 U	1.00 U	58.1
	07/29/08	<b>7.27</b>	0.500 U	0.500 U	1.00 U	66.6
10/23/08	<b>5.75</b>	0.500 U	0.500 U	1.00 U	50.0 U	
MW-17	12/17/96	1.10	ND	ND	ND	ND
	07/23/97	ND	ND	ND	ND	ND
	10/31/97	ND	ND	ND	ND	ND
	09/17/98	ND	ND	ND	ND	ND
	08/25/99	ND	ND	ND	ND	ND
	11/29/99	ND	ND	ND	ND	ND

**Notes:**

<sup>1</sup> Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded February 2016. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

-- Not sampled.

Method A values are reported with the same concentration units as the sample results.

Numbers in **bold** font indicate that the reporting limit exceeds the MTCA cleanup level.

<sup>2</sup> The groundwater cleanup level is 1,000 ug/L if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 800 ug/L.

ND - Not Detected. Sample was analyzed for, but not detected above the reporting limit shown.

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ug/L - microgram per liter

**Table 1**  
**Summary of Historical Groundwater Analytical Data**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Sample Date	Volatile Organic Compounds (mg/L)				Gasoline Range Hydrocarbons (mg/L)
		Benzene	Toluene	Ethylbenzene	Xylenes	
MW-20	12/17/96	ND	ND	ND	ND	ND
	07/23/97	ND	ND	ND	ND	ND
	10/31/97	ND	ND	ND	ND	ND
	09/17/98	ND	ND	ND	ND	ND
	08/25/99	ND	ND	ND	2.66	ND
	11/29/99	ND	ND	ND	ND	ND
MW-23	07/23/97	0.50	ND	ND	ND	ND
	10/31/97	ND	ND	ND	ND	ND
	09/17/98	ND	ND	ND	ND	ND
	08/25/99	ND	ND	ND	1.91	ND
	11/29/99	ND	ND	ND	ND	ND
MW-24	07/23/97	ND	ND	ND	ND	ND
	10/31/97	ND	ND	ND	ND	ND
	09/17/98	ND	ND	ND	ND	ND
	08/25/99	ND	ND	ND	ND	ND
	11/29/99	ND	ND	ND	ND	ND
MW-25	07/23/97	3.40	ND	ND	ND	ND
	10/31/97	<b>113.0</b>	ND	ND	ND	ND
	09/17/98	<b>43.7</b>	ND	ND	ND	61.4
	08/25/99	<b>35.9</b>	ND	ND	ND	69.0
	11/29/99	<b>423.0</b>	ND	ND	ND	776.0
	02/24/00	<b>70.9</b>	ND	ND	ND	127.0
	06/15/00	<b>107</b>	ND	ND	ND	179
	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	01/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	04/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	07/29/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U

**Notes:**

<sup>1</sup> Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded February 2016. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

-- Not sampled.

Method A values are reported with the same concentration units as the sample results.

Numbers in **bold** font indicate that the reporting limit exceeds the MTCA cleanup level.

<sup>2</sup> The groundwater cleanup level is 1,000 ug/L if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 800 ug/L.

ND - Not Detected. Sample was analyzed for, but not detected above the reporting limit shown.

-- Not sampled.

U - Compound was analyzed for but not detected above the reporting limit shown.

ug/L - microgram per liter

**Table 1**  
**Summary of Historical Groundwater Analytical Data**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Sample Date	Volatile Organic Compounds (mg/L)				Gasoline Range Hydrocarbons (mg/L)
		Benzene	Toluene	Ethylbenzene	Xylenes	
MW-26	07/23/97	<b>1,050</b>	ND	2.0	3.0	ND
	10/31/97	<b>3,100</b>	2.0	7.0	6.0	60.0
	09/17/98	<b>4,190</b>	2.81	12.1	16.6	<b>7,280</b>
	08/25/99	<b>243.0</b>	ND	ND	ND	428.0
	11/29/99	<b>143.0</b>	ND	ND	ND	254.0
	02/24/00	<b>458.0</b>	ND	0.8	2.0	661.0
	06/15/00	<b>694</b>	ND	0.972	2.53	<b>1070</b>
	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	01/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	04/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
07/29/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	
MW-27	07/23/97	ND	ND	ND	ND	ND
	10/31/97	1.10	ND	ND	ND	ND
	09/17/98	ND	ND	ND	ND	ND
	08/25/99	0.82	ND	ND	ND	ND
	11/29/99	0.544	ND	ND	ND	ND
GWE-1	09/17/98	<b>5.89</b>	ND	ND	ND	ND
	2/9/1999	<b>95.9</b>	ND	0.908	4.66	177
	4/29/1999	<b>1100</b>	1.25	5.69	<b>36.2</b>	875
	02/24/00	<b>76.3</b>	ND	ND	2.59	137
	06/15/00	<b>12.1</b>	ND	ND	ND	ND
	10/19/07	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	01/15/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
	04/10/08	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U
07/29/08	0.822	0.500 U	0.500 U	1.00 U	50.0 U	
MTCA Method A Groundwater Cleanup Level <sup>1</sup>		5.0	1,000	700	1,000	800 / 1,000 <sup>2</sup>

**Notes:**

<sup>1</sup> Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded February 2016. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

-- Not sampled.

Method A values are reported with the same concentration units as the sample results.

Numbers in **bold** font indicate that the reporting limit exceeds the MTCA cleanup level.

<sup>2</sup> The groundwater cleanup level is 1,000 ug/L if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 800 ug/L.

ND - Not Detected. Sample was analyzed for, but not detected above the reporting limit shown.

-- Not sampled.

U - Compound was analyzed for but not detected above the reporting limit shown.

ug/L - microgram per liter

**Table 2**  
**Summary of Quarterly Groundwater Elevation Data**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Screen Interval (ft bgs)	Reference Elevation (ft above msl) <sup>1</sup>	Groundwater Elevations			
			8/27/2015	11/18/2015	2/9/2016	5/3/2016
MW-10	18.5-8.5 <sup>3</sup>	23.46	10.39	12.68	12.69	11.74
MW-11	18.5-8.5 <sup>3</sup>	22.48	NA	NA	NA	NA
MW-13	18.5-8.5 <sup>3</sup>	23.31	10.24	13.24	12.56	11.92
MW-17	21-11 <sup>3</sup>	23.11	NA	NA	NA	NA
MW-20	19.5-9.5 <sup>3</sup>	23.19	NA	NA	NA	NA
MW-22	5-40 <sup>3</sup>	23.35	NA	NA	NA	NA
MW-23	5-40	21.65	10.80	13.54	13.20	12.05
MW-24	5-20	20.09	10.94	14.17	13.47	12.19
MW-25	5-20	18.6	9.37	13.08	11.52	10.32
MW-26	5-20	19.25	9.79	12.90	12.17	10.95
MW-27	5-20	18.72	9.40	13.17	11.54	10.38
GWE-1 <sup>4</sup>	5-37	19	10.63	14.02	13.17	11.90

**Notes:**

ft bgs = Feet Below Ground Surface.

ft above msl = Feet Above Mean Sea Level.

NA = Data not available.

<sup>1</sup> Elevations measured by Hallin & Associates, 6/97

<sup>2</sup> Measurements by ATC Associates, Inc.

<sup>3</sup> Estimated screen interval, well as-built not available.

<sup>4</sup> GWE-1 is a groundwater recovery well installed within the soil excavation.

**Table 3**  
**Summary of Historical Groundwater Elevation Data**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Screen Interval (ft bgs)	Reference Elevation (ft above msl) <sup>1</sup>	Groundwater Elevation (ft msl)																	
			7/23/97 <sup>2</sup>	10/31/97 <sup>2</sup>	9/17/1998	1/25/1999	2/1/1999	2/9/1999	2/17/1999	2/23/1999	3/4/1999	8/25/1999	11/29/1999	2/24/2000	6/15/2000	10/19/2007	1/15/2008	4/10/2008	7/29/2008	10/23/2008
MW-10	18.5-8.5 <sup>3</sup>	23.46	9.87	11.06	9.24	NA	NA	NA	NA	10.86	NA	9.36	10.36	10.66	10.59	10.50	10.52	10.96	10.21	NA
MW-11	18.5-8.5 <sup>3</sup>	22.48	8.97	10.36	9.35	NA	NA	NA	NA	10.68	NA	8.53	10.83	10.90	10.72	NA	NA	NA	NA	NA
MW-13	18.5-8.5 <sup>3</sup>	23.31	9.96	11.36	9.26	NA	NA	NA	NA	11.41	NA	8.96	10.76	10.72	10.61	NA	11.66	11.02	10.01	10.15
MW-17	21-11 <sup>3</sup>	23.11	9.98	11.21	9.31	NA	NA	NA	NA	NA	NA	9.26	10.81	10.76	NA	NA	NA	NA	NA	NA
MW-20	19.5-9.5 <sup>3</sup>	23.19	10.38	11.29	9.52	NA	NA	NA	NA	NA	NA	9.24	11.28	11.27	NA	NA	NA	NA	NA	NA
MW-22	5-40 <sup>3</sup>	23.35	9.70	11.62	NA	11.71	11.70	NA	NA	11.45	11.90	9.15	10.94	10.82	10.53	NA	NA	NA	NA	NA
MW-23	5-40	21.65	10.51	10.85	9.72	NA	NA	NA	NA	12.05	NA	9.55	11.32	11.70	11.37	11.22	NA	NA	NA	NA
MW-24	5-20	20.09	10.82	12.24	9.81	NA	NA	NA	NA	12.34	NA	9.19	11.88	12.05	11.66	11.57	NA	NA	NA	NA
MW-25	5-20	18.6	8.97	9.40	8.65	NA	NA	NA	NA	10.95	NA	8.70	10.34	10.06	9.84	10.05	NA	10.01	9.15	NA
MW-26	5-20	19.25	9.56	9.80	8.90	NA	NA	NA	NA	11.15	NA	8.95	10.47	10.44	10.29	10.30	11.32	10.50	9.64	NA
MW-27	5-20	18.72	9.00	9.47	8.72	NA	NA	NA	NA	10.72	NA	8.72	10.34	10.07	9.85	9.81	NA	NA	NA	NA
GWE-1 <sup>4</sup>	5-37	19	NA	NA	9.48	12.20	12.30	12.30	10.80	11.20	11.90	7.05	10.28	10.29	11.20	NA	12.17	11.35	10.30	NA

**Notes:**

ft bgs = Feet Below Ground Surface.

ft above msl = Feet Above Mean Sea Level.

NA = Data not available.

<sup>1</sup> Elevations measured by Hallin & Associates, 6/97

<sup>2</sup> Measurements by ATC Associates, Inc.

<sup>3</sup> Estimated screen interval, well as-built not available.

<sup>4</sup> GWE-1 is a groundwater recovery well installed within the soil excavation.

**Table 4**  
**Summary of Groundwater Analytical Results**  
**Former Group Health DSSF**  
**Renton, Washington**

Monitoring Well	Sample Date	Volatile Organic Compounds (ug/L)				Gasoline Range Hydrocarbons (ug/L)
		Benzene	Toluene	Ethylbenzene	Xylenes	
MW-10	8/27/15	1.08	1.00 U	1.00 U	1.00 U	50.0 U
	11/18/15 <sup>c</sup>	1.48	1.00 U	1.00 U	1.00 U	50.0 U
	2/9/16	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	5/3/16	1.60	1.00 U	1.00 U	1.00 U	50.0 U
MW-13	8/27/15	4.42	1.00 U	1.00 U	1.00 U	91.1
	11/18/15	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	2/9/16	1.02	1.00 U	1.00 U	1.00 U	50.0 U
	5/3/16	<b>5.27</b>	1.00 U	1.00 U	1.00 U	71.9
MW-27	8/27/15	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	11/18/15	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	2/9/16	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	5/3/16	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
GWE-1 <sup>a</sup>	8/27/15	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	11/18/15	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	2/9/16	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
	5/3/16	1.00 U	1.00 U	1.00 U	1.00 U	50.0 U
<b>MTCA Method A Groundwater Cleanup Level</b>		5.0	1,000	700	1,000	800 / 1,000 <sup>b</sup>

**Notes:**

Numbers in **bold** font indicate the reported result exceeds the MTCA Method A cleanup level.

Model Toxics Control Act (MTCA) Cleanup Regulation, WAC 173-340. MTCA Method A values are from Ecology website CLARC tables downloaded February 2016. (<https://fortress.wa.gov/ecy/clarc/reporting/CLARCReporting.aspx>)

U - Compound was analyzed for but not detected above the reporting limit shown.

ug/L - microgram per liter

<sup>a</sup> GWE-1 groundwater sample from extraction well within former soil excavation.

<sup>b</sup> The groundwater cleanup level is 1,000 ug/L if benzene is not present and the total of ethylbenzene, toluene, and xylenes is less than 1% of the gasoline mixture. The cleanup level for all other gasoline mixtures is 800 ug/L.

<sup>c</sup> MW-10 also had a detection for cis-1,2-dichloroethene (2.49 ug/L)

## **APPENDIX A**



3600 Fremont Ave. N.

Seattle, WA 98103

T: (206) 352-3790

F: (206) 352-7178

[info@fremontanalytical.com](mailto:info@fremontanalytical.com)

**AECOM (URS)**

David Raubvogel  
1501 4th Ave., Suite 1400  
Seattle, WA 98101

**RE: Former Group Health**

**Lab ID: 1508305**

September 02, 2015

**Attention David Raubvogel:**

Fremont Analytical, Inc. received 5 sample(s) on 8/28/2015 for the analyses presented in the following report.

***Gasoline by NWTPH-Gx***

***Volatile Organic Compounds by EPA Method 8260***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Ridgeway", written in a cursive style.

Mike Ridgeway  
President



Date: 09/02/2015

---

**CLIENT:** AECOM (URS)  
**Project:** Former Group Health  
**Lab Order:** 1508305

## Work Order Sample Summary

---

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1508305-001	Trip Blank	08/25/2015 5:43 PM	08/28/2015 7:30 AM
1508305-002	GWE-1	08/27/2015 2:15 PM	08/28/2015 7:30 AM
1508305-003	MW-27	08/27/2015 3:00 PM	08/28/2015 7:30 AM
1508305-004	MW-10	08/27/2015 4:30 PM	08/28/2015 7:30 AM
1508305-005	MW-13	08/27/2015 5:15 PM	08/28/2015 7:30 AM

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Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

### Qualifiers:

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below LOQ
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit

### Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



# Analytical Report

WO#: 1508305  
Date Reported: 9/2/2015

**Client:** AECOM (URS)

**Collection Date:** 8/25/2015 5:43:00 PM

**Project:** Former Group Health

**Lab ID:** 1508305-001

**Matrix:** Water

**Client Sample ID:** Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R24617      Analyst: BC

Gasoline	ND	50.0		µg/L	1	8/31/2015 5:16:00 PM
Surr: 4-Bromofluorobenzene	97.8	65-135		%REC	1	8/31/2015 5:16:00 PM
Surr: Toluene-d8	106	65-135		%REC	1	8/31/2015 5:16:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R24603      Analyst: BC

Benzene	ND	1.00		µg/L	1	8/31/2015 5:16:00 PM
Toluene	ND	1.00		µg/L	1	8/31/2015 5:16:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/31/2015 5:16:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/31/2015 5:16:00 PM
o-Xylene	ND	1.00		µg/L	1	8/31/2015 5:16:00 PM
Surr: Dibromofluoromethane	106	45.4-152		%REC	1	8/31/2015 5:16:00 PM
Surr: Toluene-d8	101	40.1-139		%REC	1	8/31/2015 5:16:00 PM
Surr: 1-Bromo-4-fluorobenzene	97.0	64.2-128		%REC	1	8/31/2015 5:16:00 PM



# Analytical Report

WO#: 1508305  
Date Reported: 9/2/2015

**Client:** AECOM (URS)

**Collection Date:** 8/27/2015 2:15:00 PM

**Project:** Former Group Health

**Lab ID:** 1508305-002

**Matrix:** Water

**Client Sample ID:** GWE-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R24617      Analyst: BC

Gasoline	ND	50.0		µg/L	1	8/31/2015 7:10:00 PM
Surr: 4-Bromofluorobenzene	95.7	65-135		%REC	1	8/31/2015 7:10:00 PM
Surr: Toluene-d8	108	65-135		%REC	1	8/31/2015 7:10:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R24603      Analyst: BC

Benzene	ND	1.00		µg/L	1	8/31/2015 7:10:00 PM
Toluene	ND	1.00		µg/L	1	8/31/2015 7:10:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/31/2015 7:10:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/31/2015 7:10:00 PM
o-Xylene	ND	1.00		µg/L	1	8/31/2015 7:10:00 PM
Surr: Dibromofluoromethane	106	45.4-152		%REC	1	8/31/2015 7:10:00 PM
Surr: Toluene-d8	99.7	40.1-139		%REC	1	8/31/2015 7:10:00 PM
Surr: 1-Bromo-4-fluorobenzene	95.1	64.2-128		%REC	1	8/31/2015 7:10:00 PM



# Analytical Report

WO#: 1508305  
Date Reported: 9/2/2015

**Client:** AECOM (URS)

**Collection Date:** 8/27/2015 3:00:00 PM

**Project:** Former Group Health

**Lab ID:** 1508305-003

**Matrix:** Water

**Client Sample ID:** MW-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R24617      Analyst: BC

Gasoline	ND	50.0		µg/L	1	8/31/2015 9:04:00 PM
Surr: 4-Bromofluorobenzene	97.3	65-135		%REC	1	8/31/2015 9:04:00 PM
Surr: Toluene-d8	105	65-135		%REC	1	8/31/2015 9:04:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R24603      Analyst: BC

Benzene	ND	1.00		µg/L	1	8/31/2015 9:04:00 PM
Toluene	ND	1.00		µg/L	1	8/31/2015 9:04:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/31/2015 9:04:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/31/2015 9:04:00 PM
o-Xylene	ND	1.00		µg/L	1	8/31/2015 9:04:00 PM
Surr: Dibromofluoromethane	105	45.4-152		%REC	1	8/31/2015 9:04:00 PM
Surr: Toluene-d8	99.9	40.1-139		%REC	1	8/31/2015 9:04:00 PM
Surr: 1-Bromo-4-fluorobenzene	96.7	64.2-128		%REC	1	8/31/2015 9:04:00 PM



# Analytical Report

WO#: 1508305  
Date Reported: 9/2/2015

**Client:** AECOM (URS)

**Collection Date:** 8/27/2015 4:30:00 PM

**Project:** Former Group Health

**Lab ID:** 1508305-004

**Matrix:** Water

**Client Sample ID:** MW-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R24617      Analyst: BC

Gasoline	ND	50.0		µg/L	1	8/31/2015 9:32:00 PM
Surr: 4-Bromofluorobenzene	99.4	65-135		%REC	1	8/31/2015 9:32:00 PM
Surr: Toluene-d8	106	65-135		%REC	1	8/31/2015 9:32:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R24603      Analyst: BC

Benzene	1.08	1.00		µg/L	1	8/31/2015 9:32:00 PM
Toluene	ND	1.00		µg/L	1	8/31/2015 9:32:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/31/2015 9:32:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/31/2015 9:32:00 PM
o-Xylene	ND	1.00		µg/L	1	8/31/2015 9:32:00 PM
Surr: Dibromofluoromethane	106	45.4-152		%REC	1	8/31/2015 9:32:00 PM
Surr: Toluene-d8	100	40.1-139		%REC	1	8/31/2015 9:32:00 PM
Surr: 1-Bromo-4-fluorobenzene	98.6	64.2-128		%REC	1	8/31/2015 9:32:00 PM



# Analytical Report

WO#: 1508305  
Date Reported: 9/2/2015

**Client:** AECOM (URS)

**Collection Date:** 8/27/2015 5:15:00 PM

**Project:** Former Group Health

**Lab ID:** 1508305-005

**Matrix:** Water

**Client Sample ID:** MW-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R24617      Analyst: BC

Gasoline	91.1	50.0		µg/L	1	8/31/2015 10:01:00 PM
Surr: 4-Bromofluorobenzene	98.0	65-135		%REC	1	8/31/2015 10:01:00 PM
Surr: Toluene-d8	105	65-135		%REC	1	8/31/2015 10:01:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R24603      Analyst: BC

Benzene	4.42	1.00		µg/L	1	8/31/2015 10:01:00 PM
Toluene	ND	1.00		µg/L	1	8/31/2015 10:01:00 PM
Ethylbenzene	ND	1.00		µg/L	1	8/31/2015 10:01:00 PM
m,p-Xylene	ND	1.00		µg/L	1	8/31/2015 10:01:00 PM
o-Xylene	ND	1.00		µg/L	1	8/31/2015 10:01:00 PM
Surr: Dibromofluoromethane	105	45.4-152		%REC	1	8/31/2015 10:01:00 PM
Surr: Toluene-d8	96.7	40.1-139		%REC	1	8/31/2015 10:01:00 PM
Surr: 1-Bromo-4-fluorobenzene	97.3	64.2-128		%REC	1	8/31/2015 10:01:00 PM



**Work Order:** 1508305  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID: <b>MB-R24617</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24617</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R24617</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>464047</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	24.7		25.00		99.0	65	135				
Surr: 4-Bromofluorobenzene	25.9		25.00		104	65	135				

Sample ID: <b>LCS-R24617</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24617</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R24617</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>464046</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	572	50.0	500.0	0	114	65	135				
Surr: Toluene-d8	26.2		25.00		105	65	135				
Surr: 4-Bromofluorobenzene	25.3		25.00		101	65	135				

Sample ID: <b>1508320-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24617</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R24617</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>464042</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	26.8		25.00		107	65	135		0	0	
Surr: 4-Bromofluorobenzene	23.8		25.00		95.3	65	135		0	0	



**Work Order:** 1508305  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>MB-R24603</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24603</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R24603</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>463706</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00									
Toluene	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	25.6		25.00		102	45.4	152				
Surr: Toluene-d8	25.8		25.00		103	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.7		25.00		103	64.2	128				

Sample ID: <b>LCS-R24603</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24603</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R24603</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>463705</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.0	1.00	20.00	0	95.1	69.3	132				
Toluene	19.4	1.00	20.00	0	97.1	61.3	145				
Ethylbenzene	18.8	1.00	20.00	0	93.8	72	130				
m,p-Xylene	36.4	1.00	40.00	0	91.0	70.3	134				
o-Xylene	18.5	1.00	20.00	0	92.4	72.1	131				
Surr: Dibromofluoromethane	27.1		25.00		108	45.4	152				
Surr: Toluene-d8	25.4		25.00		102	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	24.4		25.00		97.7	64.2	128				

Sample ID: <b>1508320-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>8/31/2015</b>	RunNo: <b>24603</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R24603</b>		Analysis Date: <b>8/31/2015</b>	SeqNo: <b>463985</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	

**Work Order:** 1508305  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: <b>1508320-001ADUP</b> SampType: <b>DUP</b> Units: <b>µg/L</b> Prep Date: <b>8/31/2015</b> RunNo: <b>24603</b> Client ID: <b>BATCH</b> Batch ID: <b>R24603</b> Analysis Date: <b>8/31/2015</b> SeqNo: <b>463985</b>											
o-Xylene	ND	1.00						0		30	
Surr: Dibromofluoromethane	26.6		25.00		107	45.4	152		0		
Surr: Toluene-d8	25.1		25.00		100	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	23.7		25.00		94.7	64.2	128		0		

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: <b>1508305-002AMS</b> SampType: <b>MS</b> Units: <b>µg/L</b> Prep Date: <b>8/31/2015</b> RunNo: <b>24603</b> Client ID: <b>GWE-1</b> Batch ID: <b>R24603</b> Analysis Date: <b>8/31/2015</b> SeqNo: <b>463985</b>											
Benzene	20.0	1.00	20.00	0	100	65.4	138				
Toluene	19.9	1.00	20.00	0	99.6	64	139				
Ethylbenzene	19.5	1.00	20.00	0	97.4	64.5	136				
m,p-Xylene	38.0	1.00	40.00	0	95.0	63.3	135				
o-Xylene	19.4	1.00	20.00	0	97.1	65.4	134				
Surr: Dibromofluoromethane	27.0		25.00		108	45.4	152				
Surr: Toluene-d8	25.2		25.00		101	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.9		25.00		103	64.2	128				

Client Name: **URS**  
 Logged by: **Clare Griggs**

Work Order Number: **1508305**  
 Date Received: **8/28/2015 7:30:00 AM**

### Chain of Custody

1. Is Chain of Custody complete? Yes  No  Not Present   
 2. How was the sample delivered? Client

### Log In

3. Coolers are present? Yes  No  NA   
 4. Shipping container/cooler in good condition? Yes  No   
 5. Custody Seals present on shipping container/cooler?  
 (Refer to comments for Custody Seals not intact) Yes  No  Not Required   
 6. Was an attempt made to cool the samples? Yes  No  NA   
 7. Were all items received at a temperature of >0°C to 10.0°C\* Yes  No  NA   
 8. Sample(s) in proper container(s)? Yes  No   
 9. Sufficient sample volume for indicated test(s)? Yes  No   
 10. Are samples properly preserved? Yes  No   
 11. Was preservative added to bottles? Yes  No  NA   
 12. Is there headspace in the VOA vials? Yes  No  NA   
 13. Did all samples containers arrive in good condition(unbroken)? Yes  No   
 14. Does paperwork match bottle labels? Yes  No   
 15. Are matrices correctly identified on Chain of Custody? Yes  No   
 16. Is it clear what analyses were requested? Yes  No   
 17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	David Raubvogel	Date:	8/28/2015
By Whom:	Michael Ridgeway	Via:	<input type="checkbox"/> eMail <input checked="" type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	Confirming method.		
Client Instructions:	8260		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	2.2
Sample	2.0





3600 Fremont Ave. N.

Seattle, WA 98103

T: (206) 352-3790

F: (206) 352-7178

[info@fremontanalytical.com](mailto:info@fremontanalytical.com)

**AECOM (URS)**

David Raubvogel  
1501 4th Ave., Suite 1400  
Seattle, WA 98101

**RE: Former Group Health**

**Lab ID: 1511193**

November 24, 2015

**Attention David Raubvogel:**

Fremont Analytical, Inc. received 5 sample(s) on 11/18/2015 for the analyses presented in the following report.

***Gasoline by NWTPH-Gx***

***Volatile Organic Compounds by EPA Method 8260***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Ridgeway".

Mike Ridgeway  
President

**CC:**  
Anthony Palmieri



Date: 11/24/2015

---

**CLIENT:** AECOM (URS)  
**Project:** Former Group Health  
**Lab Order:** 1511193

## Work Order Sample Summary

---

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1511193-001	Trip Blank	11/11/2015 3:30 PM	11/18/2015 4:25 PM
1511193-002	MW-27	11/18/2015 9:55 AM	11/18/2015 4:25 PM
1511193-003	GWE-1	11/18/2015 2:15 PM	11/18/2015 4:25 PM
1511193-004	MW-10	11/18/2015 12:55 PM	11/18/2015 4:25 PM
1511193-005	MW-13	11/18/2015 12:00 PM	11/18/2015 4:25 PM

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Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

## Qualifiers:

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

## Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/11/2015 3:30:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-001

**Matrix:** Water

**Client Sample ID:** Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R26236 Analyst: BC

Gasoline	ND	50.0		µg/L	1	11/19/2015 7:06:00 PM
Surr: Toluene-d8	111	65-135		%Rec	1	11/19/2015 7:06:00 PM
Surr: 4-Bromofluorobenzene	108	65-135		%Rec	1	11/19/2015 7:06:00 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197 Analyst: BC

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Chloromethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Vinyl chloride	ND	0.200		µg/L	1	11/19/2015 7:06:00 PM
Bromomethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Chloroethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1-Dichloroethene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Methylene chloride	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1-Dichloroethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
2,2-Dichloropropane	ND	2.00		µg/L	1	11/19/2015 7:06:00 PM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Chloroform	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1-Dichloropropene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Carbon tetrachloride	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Benzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Trichloroethene (TCE)	ND	0.500		µg/L	1	11/19/2015 7:06:00 PM
1,2-Dichloropropane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Bromodichloromethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Dibromomethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Toluene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,3-Dichloropropane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Dibromochloromethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	11/19/2015 7:06:00 PM
Chlorobenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/11/2015 3:30:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-001

**Matrix:** Water

**Client Sample ID:** Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197

Analyst: BC

Ethylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
o-Xylene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Styrene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Bromoform	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Bromobenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
2-Chlorotoluene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
4-Chlorotoluene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
tert-Butylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	11/19/2015 7:06:00 PM
sec-Butylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
4-Isopropyltoluene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
n-Butylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
Hexachlorobutadiene	ND	4.00		µg/L	1	11/19/2015 7:06:00 PM
Naphthalene	ND	1.00		µg/L	1	11/19/2015 7:06:00 PM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	11/19/2015 7:06:00 PM
Surr: Dibromofluoromethane	105	45.4-152		%Rec	1	11/19/2015 7:06:00 PM
Surr: Toluene-d8	108	40.1-139		%Rec	1	11/19/2015 7:06:00 PM
Surr: 1-Bromo-4-fluorobenzene	100	64.2-128		%Rec	1	11/19/2015 7:06:00 PM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 9:55:00 AM

**Project:** Former Group Health

**Lab ID:** 1511193-002

**Matrix:** Water

**Client Sample ID:** MW-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R26234 Analyst: BC

Gasoline	ND	50.0		µg/L	1	11/21/2015 2:16:00 AM
Surr: Toluene-d8	100	65-135		%Rec	1	11/21/2015 2:16:00 AM
Surr: 4-Bromofluorobenzene	99.9	65-135		%Rec	1	11/21/2015 2:16:00 AM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197 Analyst: BC

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Chloromethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Vinyl chloride	ND	0.200		µg/L	1	11/20/2015 2:17:00 AM
Bromomethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Chloroethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Methylene chloride	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1-Dichloroethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
2,2-Dichloropropane	ND	2.00		µg/L	1	11/20/2015 2:17:00 AM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Chloroform	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Carbon tetrachloride	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Benzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Trichloroethene (TCE)	ND	0.500		µg/L	1	11/20/2015 2:17:00 AM
1,2-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Bromodichloromethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Dibromomethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Toluene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,3-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Dibromochloromethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	11/20/2015 2:17:00 AM
Chlorobenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 9:55:00 AM

**Project:** Former Group Health

**Lab ID:** 1511193-002

**Matrix:** Water

**Client Sample ID:** MW-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>Volatile Organic Compounds by EPA Method 8260</b>					Batch ID: R26197	Analyst: BC
Ethylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
m,p-Xylene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
o-Xylene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Styrene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Isopropylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Bromoform	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
n-Propylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Bromobenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
2-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
4-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
tert-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	11/20/2015 2:17:00 AM
sec-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
4-Isopropyltoluene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
n-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
Hexachlorobutadiene	ND	4.00		µg/L	1	11/20/2015 2:17:00 AM
Naphthalene	ND	1.00		µg/L	1	11/20/2015 2:17:00 AM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	11/20/2015 2:17:00 AM
Surr: Dibromofluoromethane	106	45.4-152		%Rec	1	11/20/2015 2:17:00 AM
Surr: Toluene-d8	109	40.1-139		%Rec	1	11/20/2015 2:17:00 AM
Surr: 1-Bromo-4-fluorobenzene	101	64.2-128		%Rec	1	11/20/2015 2:17:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 2:15:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-003

**Matrix:** Water

**Client Sample ID:** GWE-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R26234 Analyst: BC

Gasoline	ND	50.0		µg/L	1	11/21/2015 2:45:00 AM
Surr: Toluene-d8	99.7	65-135		%Rec	1	11/21/2015 2:45:00 AM
Surr: 4-Bromofluorobenzene	99.1	65-135		%Rec	1	11/21/2015 2:45:00 AM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197 Analyst: BC

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Chloromethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Vinyl chloride	ND	0.200		µg/L	1	11/20/2015 3:14:00 AM
Bromomethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Chloroethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Methylene chloride	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1-Dichloroethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
2,2-Dichloropropane	ND	2.00		µg/L	1	11/20/2015 3:14:00 AM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Chloroform	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Carbon tetrachloride	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Benzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Trichloroethene (TCE)	ND	0.500		µg/L	1	11/20/2015 3:14:00 AM
1,2-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Bromodichloromethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Dibromomethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Toluene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,3-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Dibromochloromethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	11/20/2015 3:14:00 AM
Chlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 2:15:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-003

**Matrix:** Water

**Client Sample ID:** GWE-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197

Analyst: BC

Ethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
m,p-Xylene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
o-Xylene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Styrene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Isopropylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Bromoform	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
n-Propylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Bromobenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
2-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
4-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
tert-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	11/20/2015 3:14:00 AM
sec-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
4-Isopropyltoluene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
n-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
Hexachlorobutadiene	ND	4.00		µg/L	1	11/20/2015 3:14:00 AM
Naphthalene	ND	1.00		µg/L	1	11/20/2015 3:14:00 AM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	11/20/2015 3:14:00 AM
Surr: Dibromofluoromethane	104	45.4-152		%Rec	1	11/20/2015 3:14:00 AM
Surr: Toluene-d8	108	40.1-139		%Rec	1	11/20/2015 3:14:00 AM
Surr: 1-Bromo-4-fluorobenzene	101	64.2-128		%Rec	1	11/20/2015 3:14:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 12:55:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-004

**Matrix:** Water

**Client Sample ID:** MW-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R26234 Analyst: BC

Gasoline	ND	50.0		µg/L	1	11/21/2015 3:42:00 AM
Surr: Toluene-d8	100	65-135		%Rec	1	11/21/2015 3:42:00 AM
Surr: 4-Bromofluorobenzene	98.5	65-135		%Rec	1	11/21/2015 3:42:00 AM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197 Analyst: BC

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Chloromethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Vinyl chloride	ND	0.200		µg/L	1	11/20/2015 3:43:00 AM
Bromomethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Chloroethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Methylene chloride	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1-Dichloroethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
2,2-Dichloropropane	ND	2.00		µg/L	1	11/20/2015 3:43:00 AM
cis-1,2-Dichloroethene	2.49	1.00		µg/L	1	11/20/2015 3:43:00 AM
Chloroform	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Carbon tetrachloride	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Benzene	1.48	1.00		µg/L	1	11/20/2015 3:43:00 AM
Trichloroethene (TCE)	ND	0.500		µg/L	1	11/20/2015 3:43:00 AM
1,2-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Bromodichloromethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Dibromomethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Toluene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,3-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Dibromochloromethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	11/20/2015 3:43:00 AM
Chlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 12:55:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-004

**Matrix:** Water

**Client Sample ID:** MW-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>Volatile Organic Compounds by EPA Method 8260</b>					Batch ID: R26197	Analyst: BC
Ethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
m,p-Xylene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
o-Xylene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Styrene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Isopropylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Bromoform	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
n-Propylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Bromobenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
2-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
4-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
tert-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	11/20/2015 3:43:00 AM
sec-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
4-Isopropyltoluene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
n-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
Hexachlorobutadiene	ND	4.00		µg/L	1	11/20/2015 3:43:00 AM
Naphthalene	ND	1.00		µg/L	1	11/20/2015 3:43:00 AM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	11/20/2015 3:43:00 AM
Surr: Dibromofluoromethane	106	45.4-152		%Rec	1	11/20/2015 3:43:00 AM
Surr: Toluene-d8	108	40.1-139		%Rec	1	11/20/2015 3:43:00 AM
Surr: 1-Bromo-4-fluorobenzene	99.9	64.2-128		%Rec	1	11/20/2015 3:43:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 12:00:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-005

**Matrix:** Water

**Client Sample ID:** MW-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R26234 Analyst: BC

Gasoline	ND	50.0		µg/L	1	11/21/2015 4:11:00 AM
Surr: Toluene-d8	101	65-135		%Rec	1	11/21/2015 4:11:00 AM
Surr: 4-Bromofluorobenzene	98.9	65-135		%Rec	1	11/21/2015 4:11:00 AM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197 Analyst: BC

Dichlorodifluoromethane (CFC-12)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Chloromethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Vinyl chloride	ND	0.200		µg/L	1	11/20/2015 4:11:00 AM
Bromomethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Trichlorofluoromethane (CFC-11)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Chloroethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Methylene chloride	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
trans-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Methyl tert-butyl ether (MTBE)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1-Dichloroethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
2,2-Dichloropropane	ND	2.00		µg/L	1	11/20/2015 4:11:00 AM
cis-1,2-Dichloroethene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Chloroform	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1,1-Trichloroethane (TCA)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Carbon tetrachloride	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2-Dichloroethane (EDC)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Benzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Trichloroethene (TCE)	ND	0.500		µg/L	1	11/20/2015 4:11:00 AM
1,2-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Bromodichloromethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Dibromomethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
cis-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Toluene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
trans-1,3-Dichloropropene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1,2-Trichloroethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,3-Dichloropropane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Tetrachloroethene (PCE)	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Dibromochloromethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2-Dibromoethane (EDB)	ND	0.0600		µg/L	1	11/20/2015 4:11:00 AM
Chlorobenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1,1,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM



# Analytical Report

WO#: 1511193

Date Reported: 11/24/2015

**Client:** AECOM (URS)

**Collection Date:** 11/18/2015 12:00:00 PM

**Project:** Former Group Health

**Lab ID:** 1511193-005

**Matrix:** Water

**Client Sample ID:** MW-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R26197

Analyst: BC

Ethylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
m,p-Xylene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
o-Xylene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Styrene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Isopropylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Bromoform	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,1,2,2-Tetrachloroethane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
n-Propylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Bromobenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
2-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
4-Chlorotoluene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
tert-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2,3-Trichloropropane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2,4-Trichlorobenzene	ND	2.00		µg/L	1	11/20/2015 4:11:00 AM
sec-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
4-Isopropyltoluene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,3-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,4-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
n-Butylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2-Dichlorobenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2-Dibromo-3-chloropropane	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
Hexachlorobutadiene	ND	4.00		µg/L	1	11/20/2015 4:11:00 AM
Naphthalene	ND	1.00		µg/L	1	11/20/2015 4:11:00 AM
1,2,3-Trichlorobenzene	ND	4.00		µg/L	1	11/20/2015 4:11:00 AM
Surr: Dibromofluoromethane	105	45.4-152		%Rec	1	11/20/2015 4:11:00 AM
Surr: Toluene-d8	108	40.1-139		%Rec	1	11/20/2015 4:11:00 AM
Surr: 1-Bromo-4-fluorobenzene	100	64.2-128		%Rec	1	11/20/2015 4:11:00 AM

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID: <b>LCS-R26236</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>11/19/2015</b>	RunNo: <b>26236</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R26236</b>				Analysis Date: <b>11/19/2015</b>	SeqNo: <b>495351</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	610	50.0	500.0	0	122	65	135				
Surr: Toluene-d8	27.4		25.00		110	65	135				
Surr: 4-Bromofluorobenzene	27.3		25.00		109	65	135				

Sample ID: <b>MB-R26236</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>			Prep Date: <b>11/19/2015</b>	RunNo: <b>26236</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>R26236</b>				Analysis Date: <b>11/19/2015</b>	SeqNo: <b>495352</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	31.2		25.00		125	65	135				
Surr: 4-Bromofluorobenzene	24.4		25.00		97.7	65	135				

Sample ID: <b>1511195-020ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>11/19/2015</b>	RunNo: <b>26236</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>R26236</b>				Analysis Date: <b>11/19/2015</b>	SeqNo: <b>495342</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	27.5		25.00		110	65	135		0	0	
Surr: 4-Bromofluorobenzene	27.0		25.00		108	65	135		0	0	

Sample ID: <b>LCS-R26234</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>11/20/2015</b>	RunNo: <b>26234</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R26234</b>				Analysis Date: <b>11/20/2015</b>	SeqNo: <b>495328</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	507	50.0	500.0	0	101	65	135				
Surr: Toluene-d8	24.9		25.00		99.8	65	135				
Surr: 4-Bromofluorobenzene	24.8		25.00		99.2	65	135				

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID: <b>MB-R26234</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>11/21/2015</b>	RunNo: <b>26234</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R26234</b>		Analysis Date: <b>11/21/2015</b>	SeqNo: <b>495329</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	25.1		25.00		100	65	135				
Surr: 4-Bromofluorobenzene	24.9		25.00		99.6	65	135				

Sample ID: <b>1511193-003ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/21/2015</b>	RunNo: <b>26234</b>							
Client ID: <b>GWE-1</b>	Batch ID: <b>R26234</b>		Analysis Date: <b>11/21/2015</b>	SeqNo: <b>495305</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.0		25.00		100	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.7		25.00		98.8	65	135		0	0	

Sample ID: <b>1511211-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/21/2015</b>	RunNo: <b>26234</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R26234</b>		Analysis Date: <b>11/21/2015</b>	SeqNo: <b>495315</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.1		25.00		100	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.8		25.00		99.1	65	135		0	0	

Sample ID: <b>1511225-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/21/2015</b>	RunNo: <b>26234</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R26234</b>		Analysis Date: <b>11/21/2015</b>	SeqNo: <b>495320</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.2		25.00		101	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.7		25.00		98.6	65	135		0	0	



Work Order: 1511193  
 CLIENT: AECOM (URS)  
 Project: Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>LCS-R26197</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R26197</b>	Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494766</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	10.6	1.00	20.00	0	53.1	43	136				
Chloromethane	17.4	1.00	20.00	0	87.0	43.9	139				
Vinyl chloride	17.5	0.200	20.00	0	87.7	53.6	139				
Bromomethane	25.3	1.00	20.00	0	126	42.5	152				
Trichlorofluoromethane (CFC-11)	17.9	1.00	20.00	0	89.7	63.7	133				
Chloroethane	20.3	1.00	20.00	0	102	53	141				
1,1-Dichloroethene	18.7	1.00	20.00	0	93.3	65.6	136				
Methylene chloride	19.0	1.00	20.00	0	95.1	67.1	131				
trans-1,2-Dichloroethene	19.4	1.00	20.00	0	97.1	71.7	129				
Methyl tert-butyl ether (MTBE)	20.1	1.00	20.00	0	100	67.7	131				
1,1-Dichloroethane	21.6	1.00	20.00	0	108	67.9	134				
2,2-Dichloropropane	30.7	2.00	20.00	0	153	33.7	152				S
cis-1,2-Dichloroethene	19.7	1.00	20.00	0	98.3	71.1	130				
Chloroform	21.8	1.00	20.00	0	109	66.3	131				
1,1,1-Trichloroethane (TCA)	19.5	1.00	20.00	0	97.7	71	131				
1,1-Dichloropropene	19.6	1.00	20.00	0	98.1	74.5	126				
Carbon tetrachloride	18.7	1.00	20.00	0	93.3	66.2	134				
1,2-Dichloroethane (EDC)	22.7	1.00	20.00	0	113	68.8	123				
Benzene	19.8	1.00	20.00	0	99.2	69.3	132				
Trichloroethene (TCE)	19.6	0.500	20.00	0	97.9	65.2	136				
1,2-Dichloropropane	22.8	1.00	20.00	0	114	70.5	130				
Bromodichloromethane	20.3	1.00	20.00	0	102	67.2	137				
Dibromomethane	22.2	1.00	20.00	0	111	75.5	126				
cis-1,3-Dichloropropene	22.0	1.00	20.00	0	110	62.6	137				
Toluene	19.8	1.00	20.00	0	99.0	61.3	145				
trans-1,3-Dichloropropene	21.3	1.00	20.00	0	107	58.5	142				
1,1,2-Trichloroethane	20.9	1.00	20.00	0	105	71.7	131				
1,3-Dichloropropane	21.6	1.00	20.00	0	108	73.5	127				
Tetrachloroethene (PCE)	18.4	1.00	20.00	0	91.8	47.5	147				
Dibromochloromethane	18.8	1.00	20.00	0	93.8	67.2	134				
1,2-Dibromoethane (EDB)	20.6	0.0600	20.00	0	103	73.6	125				



**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>LCS-R26197</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>				Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>				
Client ID: <b>LCSW</b>	Batch ID: <b>R26197</b>					Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494766</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chlorobenzene	19.6	1.00	20.00	0	98.0	73.9	126				
1,1,1,2-Tetrachloroethane	18.5	1.00	20.00	0	92.7	76.8	124				
Ethylbenzene	18.8	1.00	20.00	0	94.0	72	130				
m,p-Xylene	36.9	1.00	40.00	0	92.3	70.3	134				
o-Xylene	18.4	1.00	20.00	0	92.1	72.1	131				
Styrene	19.5	1.00	20.00	0	97.3	64.3	140				
Isopropylbenzene	18.2	1.00	20.00	0	91.0	73.9	128				
Bromoform	17.1	1.00	20.00	0	85.7	63.8	135				
1,1,2,2-Tetrachloroethane	19.9	1.00	20.00	0	99.4	62.9	132				
n-Propylbenzene	19.1	1.00	20.00	0	95.6	74.5	127				
Bromobenzene	18.8	1.00	20.00	0	94.0	71	131				
1,3,5-Trimethylbenzene	18.2	1.00	20.00	0	91.1	73.1	128				
2-Chlorotoluene	19.7	1.00	20.00	0	98.7	70.8	130				
4-Chlorotoluene	19.9	1.00	20.00	0	99.6	70.1	131				
tert-Butylbenzene	18.0	1.00	20.00	0	90.2	68.2	131				
1,2,3-Trichloropropane	19.9	1.00	20.00	0	99.4	67.7	131				
1,2,4-Trichlorobenzene	19.9	2.00	20.00	0	99.4	51.8	152				
sec-Butylbenzene	18.8	1.00	20.00	0	94.1	72	129				
4-Isopropyltoluene	18.8	1.00	20.00	0	94.2	69.2	130				
1,3-Dichlorobenzene	20.5	1.00	20.00	0	103	72.4	129				
1,4-Dichlorobenzene	20.3	1.00	20.00	0	102	70.6	128				
n-Butylbenzene	19.9	1.00	20.00	0	99.3	73.8	127				
1,2-Dichlorobenzene	20.3	1.00	20.00	0	102	74.2	129				
1,2-Dibromo-3-chloropropane	18.6	1.00	20.00	0	93.2	63.1	136				
1,2,4-Trimethylbenzene	19.6	1.00	20.00	0	98.0	73.4	127				
Hexachlorobutadiene	17.5	4.00	20.00	0	87.5	58.6	138				
Naphthalene	19.9	1.00	20.00	0	99.4	41.8	165				
1,2,3-Trichlorobenzene	19.7	4.00	20.00	0	98.6	48.7	156				
Surr: Dibromofluoromethane	27.2		25.00		109	45.4	152				
Surr: Toluene-d8	27.2		25.00		109	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.2		25.00		101	64.2	128				

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>LCS-R26197</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494766</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**NOTES:**

S - Outlying spike recovery observed (high bias). Samples are non-detect for this analyte; no further action required.

Sample ID: <b>MB-R26197</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494767</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Dichlorodifluoromethane (CFC-12)	ND	1.00									
Chloromethane	ND	1.00									
Vinyl chloride	ND	0.200									
Bromomethane	ND	1.00									
Trichlorofluoromethane (CFC-11)	ND	1.00									
Chloroethane	ND	1.00									
1,1-Dichloroethene	ND	1.00									
Methylene chloride	ND	1.00									
trans-1,2-Dichloroethene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	1.00									
1,1-Dichloroethane	ND	1.00									
2,2-Dichloropropane	ND	2.00									
cis-1,2-Dichloroethene	ND	1.00									
Chloroform	ND	1.00									
1,1,1-Trichloroethane (TCA)	ND	1.00									
1,1-Dichloropropene	ND	1.00									
Carbon tetrachloride	ND	1.00									
1,2-Dichloroethane (EDC)	ND	1.00									
Benzene	ND	1.00									
Trichloroethene (TCE)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
Bromodichloromethane	ND	1.00									
Dibromomethane	ND	1.00									
cis-1,3-Dichloropropene	ND	1.00									
Toluene	ND	1.00									



**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>MB-R26197</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494767</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
trans-1,3-Dichloropropene	ND	1.00									
1,1,2-Trichloroethane	ND	1.00									
1,3-Dichloropropane	ND	1.00									
Tetrachloroethene (PCE)	ND	1.00									
Dibromochloromethane	ND	1.00									
1,2-Dibromoethane (EDB)	ND	0.0600									
Chlorobenzene	ND	1.00									
1,1,1,2-Tetrachloroethane	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Styrene	ND	1.00									
Isopropylbenzene	ND	1.00									
Bromoform	ND	1.00									
1,1,1,2-Tetrachloroethane	ND	1.00									
n-Propylbenzene	ND	1.00									
Bromobenzene	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
2-Chlorotoluene	ND	1.00									
4-Chlorotoluene	ND	1.00									
tert-Butylbenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	2.00									
sec-Butylbenzene	ND	1.00									
4-Isopropyltoluene	ND	1.00									
1,3-Dichlorobenzene	ND	1.00									
1,4-Dichlorobenzene	ND	1.00									
n-Butylbenzene	ND	1.00									
1,2-Dichlorobenzene	ND	1.00									
1,2-Dibromo-3-chloropropane	ND	1.00									
1,2,4-Trimethylbenzene	ND	1.00									

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>MB-R26197</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494767</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexachlorobutadiene	ND	4.00									
Naphthalene	ND	1.00									
1,2,3-Trichlorobenzene	ND	4.00									
Surr: Dibromofluoromethane	21.9		25.00		87.7	45.4	152				
Surr: Toluene-d8	24.8		25.00		99.4	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	22.8		25.00		91.2	64.2	128				

Sample ID: <b>1511195-020ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494755</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	



**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511195-020ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494755</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511195-020ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/19/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/19/2015</b>	SeqNo: <b>494755</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachlorobutadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	26.6		25.00		106	45.4	152		0		
Surr: Toluene-d8	27.0		25.00		108	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	25.2		25.00		101	64.2	128		0		

Sample ID: <b>1511193-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MW-27</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494749</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	ND	1.00						0		30	
Chloromethane	ND	1.00						0		30	
Vinyl chloride	ND	0.200						0		30	
Bromomethane	ND	1.00						0		30	
Trichlorofluoromethane (CFC-11)	ND	1.00						0		30	
Chloroethane	ND	1.00						0		30	
1,1-Dichloroethene	ND	1.00						0		30	
Methylene chloride	ND	1.00						0		30	
trans-1,2-Dichloroethene	ND	1.00						0		30	
Methyl tert-butyl ether (MTBE)	ND	1.00						0		30	
1,1-Dichloroethane	ND	1.00						0		30	
2,2-Dichloropropane	ND	2.00						0		30	
cis-1,2-Dichloroethene	ND	1.00						0		30	
Chloroform	ND	1.00						0		30	
1,1,1-Trichloroethane (TCA)	ND	1.00						0		30	



**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511193-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>
Client ID: <b>MW-27</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494749</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.00						0		30	
Carbon tetrachloride	ND	1.00						0		30	
1,2-Dichloroethane (EDC)	ND	1.00						0		30	
Benzene	ND	1.00						0		30	
Trichloroethene (TCE)	ND	0.500						0		30	
1,2-Dichloropropane	ND	1.00						0		30	
Bromodichloromethane	ND	1.00						0		30	
Dibromomethane	ND	1.00						0		30	
cis-1,3-Dichloropropene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
trans-1,3-Dichloropropene	ND	1.00						0		30	
1,1,2-Trichloroethane	ND	1.00						0		30	
1,3-Dichloropropane	ND	1.00						0		30	
Tetrachloroethene (PCE)	ND	1.00						0		30	
Dibromochloromethane	ND	1.00						0		30	
1,2-Dibromoethane (EDB)	ND	0.0600						0		30	
Chlorobenzene	ND	1.00						0		30	
1,1,1,2-Tetrachloroethane	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Styrene	ND	1.00						0		30	
Isopropylbenzene	ND	1.00						0		30	
Bromoform	ND	1.00						0		30	
1,1,2,2-Tetrachloroethane	ND	1.00						0		30	
n-Propylbenzene	ND	1.00						0		30	
Bromobenzene	ND	1.00						0		30	
1,3,5-Trimethylbenzene	ND	1.00						0		30	
2-Chlorotoluene	ND	1.00						0		30	
4-Chlorotoluene	ND	1.00						0		30	
tert-Butylbenzene	ND	1.00						0		30	

Work Order: 1511193  
 CLIENT: AECOM (URS)  
 Project: Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511193-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MW-27</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494749</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	1.00						0		30	
1,2,4-Trichlorobenzene	ND	2.00						0		30	
sec-Butylbenzene	ND	1.00						0		30	
4-Isopropyltoluene	ND	1.00						0		30	
1,3-Dichlorobenzene	ND	1.00						0		30	
1,4-Dichlorobenzene	ND	1.00						0		30	
n-Butylbenzene	ND	1.00						0		30	
1,2-Dichlorobenzene	ND	1.00						0		30	
1,2-Dibromo-3-chloropropane	ND	1.00						0		30	
1,2,4-Trimethylbenzene	ND	1.00						0		30	
Hexachlorobutadiene	ND	4.00						0		30	
Naphthalene	ND	1.00						0		30	
1,2,3-Trichlorobenzene	ND	4.00						0		30	
Surr: Dibromofluoromethane	26.3		25.00		105	45.4	152		0		
Surr: Toluene-d8	27.0		25.00		108	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	25.1		25.00		100	64.2	128		0		

Sample ID: <b>1511193-005AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>							
Client ID: <b>MW-13</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494753</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane (CFC-12)	11.3	1.00	20.00	0	56.5	33.3	122				
Chloromethane	19.2	1.00	20.00	0	96.2	48.2	145				
Vinyl chloride	19.6	0.200	20.00	0	98.1	58.1	158				
Bromomethane	24.9	1.00	20.00	0	124	31.5	135				
Trichlorofluoromethane (CFC-11)	20.6	1.00	20.00	0	103	54.7	138				
Chloroethane	24.1	1.00	20.00	0	121	49.9	143				
1,1-Dichloroethene	21.0	1.00	20.00	0	105	63	141				
Methylene chloride	19.6	1.00	20.00	0	97.8	61.6	135				
trans-1,2-Dichloroethene	21.0	1.00	20.00	0	105	63.5	138				
Methyl tert-butyl ether (MTBE)	17.7	1.00	20.00	0	88.3	60.9	132				

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511193-005AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>
Client ID: <b>MW-13</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494753</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	23.3	1.00	20.00	0	116	67.8	136				
2,2-Dichloropropane	20.9	2.00	20.00	0	105	31.5	121				
cis-1,2-Dichloroethene	20.6	1.00	20.00	0	103	67.1	123				
Chloroform	22.5	1.00	20.00	0	113	66.7	136				
1,1,1-Trichloroethane (TCA)	21.4	1.00	20.00	0	107	64.2	146				
1,1-Dichloropropene	22.3	1.00	20.00	0	111	73.8	136				
Carbon tetrachloride	20.8	1.00	20.00	0	104	62.7	146				
1,2-Dichloroethane (EDC)	22.0	1.00	20.00	0	110	63.4	137				
Benzene	21.6	1.00	20.00	0	108	65.4	138				
Trichloroethene (TCE)	21.2	0.500	20.00	0	106	60.4	134				
1,2-Dichloropropane	23.5	1.00	20.00	0	117	62.6	138				
Bromodichloromethane	19.4	1.00	20.00	0	96.9	59.4	139				
Dibromomethane	19.5	1.00	20.00	0	97.4	63.6	139				
cis-1,3-Dichloropropene	19.6	1.00	20.00	0	98.2	63.8	132				
Toluene	20.9	1.00	20.00	0	105	64	139				
trans-1,3-Dichloropropene	17.4	1.00	20.00	0	87.1	57.7	125				
1,1,2-Trichloroethane	19.4	1.00	20.00	0	97.2	59.4	127				
1,3-Dichloropropane	20.3	1.00	20.00	0	102	64.3	135				
Tetrachloroethene (PCE)	19.3	1.00	20.00	0	96.6	50.3	133				
Dibromochloromethane	16.5	1.00	20.00	0	82.5	61.6	139				
1,2-Dibromoethane (EDB)	18.6	0.0600	20.00	0	93.0	63.2	134				
Chlorobenzene	20.1	1.00	20.00	0	101	65.8	134				
1,1,1,2-Tetrachloroethane	18.3	1.00	20.00	0	91.6	65.4	135				
Ethylbenzene	20.2	1.00	20.00	0	101	64.5	136				
m,p-Xylene	38.8	1.00	40.00	0.07500	96.8	63.3	135				
o-Xylene	19.1	1.00	20.00	0	95.7	65.4	134				
Styrene	19.8	1.00	20.00	0	98.9	59.1	134				
Isopropylbenzene	19.7	1.00	20.00	0	98.4	56	147				
Bromoform	14.1	1.00	20.00	0	70.7	57.7	139				
1,1,2,2-Tetrachloroethane	17.1	1.00	20.00	0	85.6	59.8	146				
n-Propylbenzene	20.8	1.00	20.00	0	104	57.6	142				

**Work Order:** 1511193  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1511193-005AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>11/20/2015</b>	RunNo: <b>26197</b>
Client ID: <b>MW-13</b>	Batch ID: <b>R26197</b>		Analysis Date: <b>11/20/2015</b>	SeqNo: <b>494753</b>

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	18.2	1.00	20.00	0	90.9	63.6	130				
1,3,5-Trimethylbenzene	19.1	1.00	20.00	0	95.4	59.9	136				
2-Chlorotoluene	20.8	1.00	20.00	0	104	61.7	134				
4-Chlorotoluene	20.9	1.00	20.00	0	104	58.4	134				
tert-Butylbenzene	19.2	1.00	20.00	0	96.2	66.8	141				
1,2,3-Trichloropropane	15.6	1.00	20.00	0	78.1	62.4	129				
1,2,4-Trichlorobenzene	18.7	2.00	20.00	0	93.4	50.9	133				
sec-Butylbenzene	20.4	1.00	20.00	0	102	56	146				
4-Isopropyltoluene	19.8	1.00	20.00	0	99.1	56.4	136				
1,3-Dichlorobenzene	20.9	1.00	20.00	0	105	58.2	128				
1,4-Dichlorobenzene	20.7	1.00	20.00	0	104	60.1	123				
n-Butylbenzene	21.6	1.00	20.00	0	108	54.6	135				
1,2-Dichlorobenzene	20.1	1.00	20.00	0	100	65.4	133				
1,2-Dibromo-3-chloropropane	14.4	1.00	20.00	0	71.8	51.8	142				
1,2,4-Trimethylbenzene	20.3	1.00	20.00	0	101	63.7	132				
Hexachlorobutadiene	17.5	4.00	20.00	0	87.6	58.1	130				
Naphthalene	17.0	1.00	20.00	0	84.9	54.5	132				
1,2,3-Trichlorobenzene	17.9	4.00	20.00	0	89.5	57	131				
Surr: Dibromofluoromethane	27.1		25.00		108	45.4	152				
Surr: Toluene-d8	27.3		25.00		109	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	24.9		25.00		99.6	64.2	128				

Client Name: **URS**  
 Logged by: **Erica Silva**

Work Order Number: **1511193**  
 Date Received: **11/18/2015 4:25:00 PM**

### Chain of Custody

1. Is Chain of Custody complete? Yes  No  Not Present   
 2. How was the sample delivered? Client

### Log In

3. Coolers are present? Yes  No  NA   
 4. Shipping container/cooler in good condition? Yes  No   
 5. Custody Seals present on shipping container/cooler?  
 (Refer to comments for Custody Seals not intact) Yes  No  Not Required   
 6. Was an attempt made to cool the samples? Yes  No  NA   
 7. Were all items received at a temperature of >0°C to 10.0°C\* Yes  No  NA   
 8. Sample(s) in proper container(s)? Yes  No   
 9. Sufficient sample volume for indicated test(s)? Yes  No   
 10. Are samples properly preserved? Yes  No   
 11. Was preservative added to bottles? Yes  No  NA   
 12. Is there headspace in the VOA vials? Yes  No  NA   
 13. Did all samples containers arrive in good condition(unbroken)? Yes  No   
 14. Does paperwork match bottle labels? Yes  No   
 15. Are matrices correctly identified on Chain of Custody? Yes  No   
 16. Is it clear what analyses were requested? Yes  No   
 17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	1.6
Sample	5.3
Temp Blank	3.7





3600 Fremont Ave. N.

Seattle, WA 98103

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[info@fremontanalytical.com](mailto:info@fremontanalytical.com)

**AECOM (URS)**

Anthony Palmieri  
1501 4th Ave., Suite 1400  
Seattle, WA 98101

**RE: Former Group Health**

**Lab ID: 1602084**

February 15, 2016

**Attention Anthony Palmieri:**

Fremont Analytical, Inc. received 5 sample(s) on 2/9/2016 for the analyses presented in the following report.

***Gasoline by NWTPH-Gx***

***Volatile Organic Compounds by EPA Method 8260***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Ridgeway", written in a cursive style.

Mike Ridgeway  
President



Date: 02/15/2016

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**CLIENT:** AECOM (URS)  
**Project:** Former Group Health  
**Lab Order:** 1602084

## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1602084-001	Trip Blank	02/08/2016 12:19 PM	02/09/2016 4:15 PM
1602084-002	MW-10	02/09/2016 11:00 AM	02/09/2016 4:15 PM
1602084-003	MW-13	02/09/2016 11:32 AM	02/09/2016 4:15 PM
1602084-004	MW-27	02/09/2016 1:15 PM	02/09/2016 4:15 PM
1602084-005	GWE-1	02/09/2016 2:05 PM	02/09/2016 4:15 PM

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Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

## Qualifiers:

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

## Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



# Analytical Report

WO#: 1602084  
Date Reported: 2/15/2016

**Client:** AECOM (URS)

**Collection Date:** 2/8/2016 12:19:00 PM

**Project:** Former Group Health

**Lab ID:** 1602084-001

**Matrix:** Water

**Client Sample ID:** Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R27560      Analyst: BC

Benzene	ND	1.00		µg/L	1	2/12/2016 5:03:54 PM
Toluene	ND	1.00		µg/L	1	2/12/2016 5:03:54 PM
Ethylbenzene	ND	1.00		µg/L	1	2/12/2016 5:03:54 PM
m,p-Xylene	ND	1.00		µg/L	1	2/12/2016 5:03:54 PM
o-Xylene	ND	1.00		µg/L	1	2/12/2016 5:03:54 PM
Surr: Dibromofluoromethane	102	45.4-152		%Rec	1	2/12/2016 5:03:54 PM
Surr: Toluene-d8	96.6	40.1-139		%Rec	1	2/12/2016 5:03:54 PM
Surr: 1-Bromo-4-fluorobenzene	95.8	64.2-128		%Rec	1	2/12/2016 5:03:54 PM



# Analytical Report

WO#: 1602084  
Date Reported: 2/15/2016

**Client:** AECOM (URS)

**Collection Date:** 2/9/2016 11:00:00 AM

**Project:** Former Group Health

**Lab ID:** 1602084-002

**Matrix:** Water

**Client Sample ID:** MW-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R27582      Analyst: BC

Gasoline	ND	50.0		µg/L	1	2/12/2016 5:33:24 PM
Surr: 4-Bromofluorobenzene	96.1	65-135		%Rec	1	2/12/2016 5:33:24 PM
Surr: Toluene-d8	100	65-135		%Rec	1	2/12/2016 5:33:24 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R27560      Analyst: BC

Benzene	ND	1.00		µg/L	1	2/12/2016 5:33:24 PM
Toluene	ND	1.00		µg/L	1	2/12/2016 5:33:24 PM
Ethylbenzene	ND	1.00		µg/L	1	2/12/2016 5:33:24 PM
m,p-Xylene	ND	1.00		µg/L	1	2/12/2016 5:33:24 PM
o-Xylene	ND	1.00		µg/L	1	2/12/2016 5:33:24 PM
Surr: Dibromofluoromethane	102	45.4-152		%Rec	1	2/12/2016 5:33:24 PM
Surr: Toluene-d8	95.5	40.1-139		%Rec	1	2/12/2016 5:33:24 PM
Surr: 1-Bromo-4-fluorobenzene	96.5	64.2-128		%Rec	1	2/12/2016 5:33:24 PM



# Analytical Report

WO#: 1602084

Date Reported: 2/15/2016

**Client:** AECOM (URS)

**Collection Date:** 2/9/2016 11:32:00 AM

**Project:** Former Group Health

**Lab ID:** 1602084-003

**Matrix:** Water

**Client Sample ID:** MW-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R27582      Analyst: BC

Gasoline	ND	50.0		µg/L	1	2/12/2016 6:02:48 PM
Surr: 4-Bromofluorobenzene	96.1	65-135		%Rec	1	2/12/2016 6:02:48 PM
Surr: Toluene-d8	99.6	65-135		%Rec	1	2/12/2016 6:02:48 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R27560      Analyst: BC

Benzene	1.02	1.00		µg/L	1	2/12/2016 6:02:48 PM
Toluene	ND	1.00		µg/L	1	2/12/2016 6:02:48 PM
Ethylbenzene	ND	1.00		µg/L	1	2/12/2016 6:02:48 PM
m,p-Xylene	ND	1.00		µg/L	1	2/12/2016 6:02:48 PM
o-Xylene	ND	1.00		µg/L	1	2/12/2016 6:02:48 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	2/12/2016 6:02:48 PM
Surr: Toluene-d8	96.7	40.1-139		%Rec	1	2/12/2016 6:02:48 PM
Surr: 1-Bromo-4-fluorobenzene	96.8	64.2-128		%Rec	1	2/12/2016 6:02:48 PM



# Analytical Report

WO#: 1602084  
Date Reported: 2/15/2016

**Client:** AECOM (URS)

**Collection Date:** 2/9/2016 1:15:00 PM

**Project:** Former Group Health

**Lab ID:** 1602084-004

**Matrix:** Water

**Client Sample ID:** MW-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R27582      Analyst: BC

Gasoline	ND	50.0		µg/L	1	2/12/2016 6:32:09 PM
Surr: 4-Bromofluorobenzene	96.3	65-135		%Rec	1	2/12/2016 6:32:09 PM
Surr: Toluene-d8	100	65-135		%Rec	1	2/12/2016 6:32:09 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R27560      Analyst: BC

Benzene	ND	1.00		µg/L	1	2/12/2016 6:32:09 PM
Toluene	ND	1.00		µg/L	1	2/12/2016 6:32:09 PM
Ethylbenzene	ND	1.00		µg/L	1	2/12/2016 6:32:09 PM
m,p-Xylene	ND	1.00		µg/L	1	2/12/2016 6:32:09 PM
o-Xylene	ND	1.00		µg/L	1	2/12/2016 6:32:09 PM
Surr: Dibromofluoromethane	103	45.4-152		%Rec	1	2/12/2016 6:32:09 PM
Surr: Toluene-d8	96.6	40.1-139		%Rec	1	2/12/2016 6:32:09 PM
Surr: 1-Bromo-4-fluorobenzene	96.6	64.2-128		%Rec	1	2/12/2016 6:32:09 PM



# Analytical Report

WO#: 1602084  
Date Reported: 2/15/2016

**Client:** AECOM (URS)

**Collection Date:** 2/9/2016 2:05:00 PM

**Project:** Former Group Health

**Lab ID:** 1602084-005

**Matrix:** Water

**Client Sample ID:** GWE-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R27582     Analyst: BC

Gasoline	ND	50.0		µg/L	1	2/12/2016 7:01:29 PM
Surr: 4-Bromofluorobenzene	94.5	65-135		%Rec	1	2/12/2016 7:01:29 PM
Surr: Toluene-d8	101	65-135		%Rec	1	2/12/2016 7:01:29 PM

**Volatile Organic Compounds by EPA Method 8260**

Batch ID: R27560     Analyst: BC

Benzene	ND	1.00		µg/L	1	2/12/2016 7:01:29 PM
Toluene	ND	1.00		µg/L	1	2/12/2016 7:01:29 PM
Ethylbenzene	ND	1.00		µg/L	1	2/12/2016 7:01:29 PM
m,p-Xylene	ND	1.00		µg/L	1	2/12/2016 7:01:29 PM
o-Xylene	ND	1.00		µg/L	1	2/12/2016 7:01:29 PM
Surr: Dibromofluoromethane	102	45.4-152		%Rec	1	2/12/2016 7:01:29 PM
Surr: Toluene-d8	97.2	40.1-139		%Rec	1	2/12/2016 7:01:29 PM
Surr: 1-Bromo-4-fluorobenzene	94.4	64.2-128		%Rec	1	2/12/2016 7:01:29 PM

**Work Order:** 1602084  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID: <b>LCS-R27582</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>			Prep Date: <b>2/12/2016</b>	RunNo: <b>27582</b>					
Client ID: <b>LCSW</b>	Batch ID: <b>R27582</b>				Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520405</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	455	50.0	500.0	0	91.1	65	135				
Surr: Toluene-d8	25.2		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	24.7		25.00		98.7	65	135				

Sample ID: <b>MB-R27582</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>			Prep Date: <b>2/12/2016</b>	RunNo: <b>27582</b>					
Client ID: <b>MBLKW</b>	Batch ID: <b>R27582</b>				Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520406</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	25.4		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	24.5		25.00		97.8	65	135				

Sample ID: <b>1602080-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>			Prep Date: <b>2/12/2016</b>	RunNo: <b>27582</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>R27582</b>				Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520397</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.2		25.00		101	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.0		25.00		96.1	65	135		0	0	

**Work Order:** 1602084  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: <b>LCS-R27560</b> SampType: <b>LCS</b> Units: <b>µg/L</b> Prep Date: <b>2/12/2016</b> RunNo: <b>27560</b> Client ID: <b>LCSW</b> Batch ID: <b>R27560</b> Analysis Date: <b>2/12/2016</b> SeqNo: <b>519965</b>											
Benzene	18.0	1.00	20.00	0	90.1	69.3	132				
Toluene	20.0	1.00	20.00	0	99.8	61.3	145				
Ethylbenzene	17.1	1.00	20.00	0	85.4	72	130				
m,p-Xylene	38.8	1.00	40.00	0	97.1	70.3	134				
o-Xylene	16.1	1.00	20.00	0	80.4	72.1	131				
Surr: Dibromofluoromethane	25.7		25.00		103	45.4	152				
Surr: Toluene-d8	25.2		25.00		101	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.0		25.00		100	64.2	128				

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: <b>MB-R27560</b> SampType: <b>MBLK</b> Units: <b>µg/L</b> Prep Date: <b>2/12/2016</b> RunNo: <b>27560</b> Client ID: <b>MBLKW</b> Batch ID: <b>R27560</b> Analysis Date: <b>2/12/2016</b> SeqNo: <b>519966</b>											
Benzene	ND	1.00									
Toluene	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	24.5		25.00		98.1	45.4	152				
Surr: Toluene-d8	24.9		25.00		99.4	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	24.5		25.00		97.9	64.2	128				

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: <b>1602099-003AMS</b> SampType: <b>MS</b> Units: <b>µg/L</b> Prep Date: <b>2/12/2016</b> RunNo: <b>27560</b> Client ID: <b>BATCH</b> Batch ID: <b>R27560</b> Analysis Date: <b>2/12/2016</b> SeqNo: <b>520070</b>											
Benzene	19.4	1.00	20.00	0	96.9	65.4	138				
Toluene	20.2	1.00	20.00	0	101	64	139				
Ethylbenzene	18.5	1.00	20.00	0	92.6	64.5	136				
m,p-Xylene	42.3	1.00	40.00	0	106	63.3	135				

Work Order: 1602084  
 CLIENT: AECOM (URS)  
 Project: Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1602099-003AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>2/12/2016</b>	RunNo: <b>27560</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R27560</b>		Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520070</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

o-Xylene	17.1	1.00	20.00	0	85.3	65.4	134				
Surr: Dibromofluoromethane	26.4		25.00		106	45.4	152				
Surr: Toluene-d8	24.3		25.00		97.3	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.3		25.00		101	64.2	128				

Sample ID: <b>1602099-003AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>2/12/2016</b>	RunNo: <b>27560</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R27560</b>		Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520071</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	19.7	1.00	20.00	0	98.6	65.4	138	19.37	1.79	30	
Toluene	20.7	1.00	20.00	0	104	64	139	20.25	2.29	30	
Ethylbenzene	19.0	1.00	20.00	0	95.0	64.5	136	18.52	2.51	30	
m,p-Xylene	43.3	1.00	40.00	0	108	63.3	135	42.30	2.43	30	
o-Xylene	17.6	1.00	20.00	0	88.0	65.4	134	17.06	3.12	30	
Surr: Dibromofluoromethane	26.5		25.00		106	45.4	152		0	0	
Surr: Toluene-d8	24.0		25.00		95.9	40.1	139		0	0	
Surr: 1-Bromo-4-fluorobenzene	24.8		25.00		99.3	64.2	128		0	0	

Sample ID: <b>1602080-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>2/12/2016</b>	RunNo: <b>27560</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R27560</b>		Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520375</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Surr: Dibromofluoromethane	25.5		25.00		102	45.4	152		0		
Surr: Toluene-d8	24.0		25.00		96.1	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.1		25.00		96.5	64.2	128		0		



Date: 2/15/2016

**Work Order:** 1602084  
**CLIENT:** AECOM (URS)  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260**

Sample ID: <b>1602080-001ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>2/12/2016</b>	RunNo: <b>27560</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R27560</b>	Analysis Date: <b>2/12/2016</b>	SeqNo: <b>520375</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Client Name: <b>URS</b>	Work Order Number: <b>1602084</b>
Logged by: <b>Erica Silva</b>	Date Received: <b>2/9/2016 4:15:00 PM</b>

**Chain of Custody**

1. Is Chain of Custody complete?      Yes       No       Not Present
2. How was the sample delivered?      Client

**Log In**

3. Coolers are present?      Yes       No       NA
4. Shipping container/cooler in good condition?      Yes       No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact)      Yes       No       Not Required
6. Was an attempt made to cool the samples?      Yes       No       NA
7. Were all items received at a temperature of >0°C to 10.0°C\*      Yes       No       NA
8. Sample(s) in proper container(s)?      Yes       No
9. Sufficient sample volume for indicated test(s)?      Yes       No
10. Are samples properly preserved?      Yes       No
11. Was preservative added to bottles?      Yes       No       NA
12. Is there headspace in the VOA vials?      Yes       No       NA
13. Did all samples containers arrive in good condition(unbroken)?      Yes       No
14. Does paperwork match bottle labels?      Yes       No
15. Are matrices correctly identified on Chain of Custody?      Yes       No
16. Is it clear what analyses were requested?      Yes       No
17. Were all holding times able to be met?      Yes       No

**Special Handling (if applicable)**

18. Was client notified of all discrepancies with this order?      Yes       No       NA

Person Notified:	<input style="width: 95%;" type="text"/>	Date:	<input style="width: 95%;" type="text"/>
By Whom:	<input style="width: 95%;" type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input style="width: 95%;" type="text"/>		
Client Instructions:	<input style="width: 95%;" type="text"/>		

19. Additional remarks:

**Item Information**

Item #	Temp °C
Cooler	5.5
Sample	4.1
Temp Blank	1.0

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



# Fremont

ANALYTICAL

3600 Fremont Ave N. Tel: 206-352-3790  
Seattle, WA 98103 Fax: 206-352-7178

Date: 2/9/16

Page: 1 of 1

Laboratory Project No (Internal):

1602084

## Chain of Custody Record

Client: AECOM

Address: 1501 4th Av. #1400

City, State, zip: SEATTLE, WA

Telephone: 206-438-2700 Fax: \_\_\_\_\_

Project Name: FORMER GRAPE HEATH

Project No: \_\_\_\_\_

Location: RENTON WA

Report To (PM): ANTHONY PALMERI / DAVI RAYVOGEL

PM Email: antony.palmeri@aecom.com davi.rayvogel@aecom.com

Collected by: D LEWIS

\*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, WJ = Water, UW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GY/BTEX	BTEX	Gasoline-Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T)   Dissolved (D)	Anions (Cl)**	EDB (8011)	Comments	
1 TRIP BLANK	2/9/16	1100	W	X														VOCs: BTEX ONLY
2 MW-10	2/9/16	1132	"	X														
3 MW-13	2/9/16	1315	"	X														
4 MW-27	2/9/16	1405	"	X														
5 GWD E-1	2/9/16	1405	"	X														
6																		
7																		
8																		
9																		
10																		

\*\*Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb SD Se Sr Sn Ti U V Zn

\*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal:  Return to Client  Disposal by Lab (A fee may be assessed. Samples are retained after 30 days.)

Turn-around times for samples received after 4:00pm will begin on the following business day.

Special Remarks: VOCs, BTEX ONLY

Relinquished: Barbara Lewis Date/Time: 2/9/16 16:15 Received: Barbara Lewis Date/Time: 02/09/16 16:15

Relinquished: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received: \_\_\_\_\_ Date/Time: \_\_\_\_\_



**AECOM**

David Raubvogel  
1111 3rd Avenue Suite 1600  
Seattle, WA 98101

**RE: Former Group Health**

**Lab ID: 1605052**

May 05, 2016

**Attention David Raubvogel:**

Fremont Analytical, Inc. received 5 sample(s) on 5/3/2016 for the analyses presented in the following report.

***Gasoline by NWTPH-Gx  
Volatile Organic Compounds by EPA Method 8260C***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway  
President

**CC:**  
Anthony Palmieri



---

**CLIENT:** AECOM  
**Project:** Former Group Health  
**Lab Order:** 1605052

**Work Order Sample Summary**

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Date/Time Collected</b>	<b>Date/Time Received</b>
1605052-001	Trip Blank	04/28/2016 2:39 PM	05/03/2016 3:00 PM
1605052-002	MW-27	05/03/2016 10:25 AM	05/03/2016 3:00 PM
1605052-003	MW-13	05/03/2016 11:40 AM	05/03/2016 3:00 PM
1605052-004	MW-10	05/03/2016 12:40 PM	05/03/2016 3:00 PM
1605052-005	GWE-1	05/03/2016 1:50 PM	05/03/2016 3:00 PM

---

**CLIENT:** AECOM  
**Project:** Former Group Health

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

### Qualifiers:

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

### Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



**Client:** AECOM

**Collection Date:** 4/28/2016 2:39:00 PM

**Project:** Former Group Health

**Lab ID:** 1605052-001

**Matrix:** Water

**Client Sample ID:** Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R29146      Analyst: BC

Gasoline	ND	50.0		µg/L	1	5/4/2016 6:31:21 PM
Surr: 4-Bromofluorobenzene	95.6	65-135		%Rec	1	5/4/2016 6:31:21 PM
Surr: Toluene-d8	97.6	65-135		%Rec	1	5/4/2016 6:31:21 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: R29144      Analyst: BC

Benzene	ND	1.00		µg/L	1	5/4/2016 6:31:21 PM
Toluene	ND	1.00		µg/L	1	5/4/2016 6:31:21 PM
Ethylbenzene	ND	1.00		µg/L	1	5/4/2016 6:31:21 PM
m,p-Xylene	ND	1.00		µg/L	1	5/4/2016 6:31:21 PM
o-Xylene	ND	1.00		µg/L	1	5/4/2016 6:31:21 PM
Surr: Dibromofluoromethane	96.3	45.4-152		%Rec	1	5/4/2016 6:31:21 PM
Surr: Toluene-d8	96.1	40.1-139		%Rec	1	5/4/2016 6:31:21 PM
Surr: 1-Bromo-4-fluorobenzene	94.7	64.2-128		%Rec	1	5/4/2016 6:31:21 PM



**Client:** AECOM

**Collection Date:** 5/3/2016 10:25:00 AM

**Project:** Former Group Health

**Lab ID:** 1605052-002

**Matrix:** Water

**Client Sample ID:** MW-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R29146      Analyst: BC

Gasoline	ND	50.0		µg/L	1	5/4/2016 7:00:40 PM
Surr: 4-Bromofluorobenzene	96.8	65-135		%Rec	1	5/4/2016 7:00:40 PM
Surr: Toluene-d8	97.6	65-135		%Rec	1	5/4/2016 7:00:40 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: R29144      Analyst: BC

Benzene	ND	1.00		µg/L	1	5/4/2016 7:00:40 PM
Toluene	ND	1.00		µg/L	1	5/4/2016 7:00:40 PM
Ethylbenzene	ND	1.00		µg/L	1	5/4/2016 7:00:40 PM
m,p-Xylene	ND	1.00		µg/L	1	5/4/2016 7:00:40 PM
o-Xylene	ND	1.00		µg/L	1	5/4/2016 7:00:40 PM
Surr: Dibromofluoromethane	100	45.4-152		%Rec	1	5/4/2016 7:00:40 PM
Surr: Toluene-d8	97.0	40.1-139		%Rec	1	5/4/2016 7:00:40 PM
Surr: 1-Bromo-4-fluorobenzene	96.0	64.2-128		%Rec	1	5/4/2016 7:00:40 PM



**Client:** AECOM

**Collection Date:** 5/3/2016 11:40:00 AM

**Project:** Former Group Health

**Lab ID:** 1605052-003

**Matrix:** Water

**Client Sample ID:** MW-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R29146      Analyst: BC

Gasoline	71.9	50.0		µg/L	1	5/4/2016 7:29:52 PM
Surr: 4-Bromofluorobenzene	96.6	65-135		%Rec	1	5/4/2016 7:29:52 PM
Surr: Toluene-d8	101	65-135		%Rec	1	5/4/2016 7:29:52 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: R29144      Analyst: BC

Benzene	5.27	1.00		µg/L	1	5/4/2016 7:29:52 PM
Toluene	ND	1.00		µg/L	1	5/4/2016 7:29:52 PM
Ethylbenzene	ND	1.00		µg/L	1	5/4/2016 7:29:52 PM
m,p-Xylene	ND	1.00		µg/L	1	5/4/2016 7:29:52 PM
o-Xylene	ND	1.00		µg/L	1	5/4/2016 7:29:52 PM
Surr: Dibromofluoromethane	99.6	45.4-152		%Rec	1	5/4/2016 7:29:52 PM
Surr: Toluene-d8	100	40.1-139		%Rec	1	5/4/2016 7:29:52 PM
Surr: 1-Bromo-4-fluorobenzene	95.4	64.2-128		%Rec	1	5/4/2016 7:29:52 PM



**Client:** AECOM

**Collection Date:** 5/3/2016 12:40:00 PM

**Project:** Former Group Health

**Lab ID:** 1605052-004

**Matrix:** Water

**Client Sample ID:** MW-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R29146      Analyst: BC

Gasoline	ND	50.0		µg/L	1	5/4/2016 7:59:03 PM
Surr: 4-Bromofluorobenzene	96.5	65-135		%Rec	1	5/4/2016 7:59:03 PM
Surr: Toluene-d8	100	65-135		%Rec	1	5/4/2016 7:59:03 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: R29144      Analyst: BC

Benzene	1.60	1.00		µg/L	1	5/4/2016 7:59:03 PM
Toluene	ND	1.00		µg/L	1	5/4/2016 7:59:03 PM
Ethylbenzene	ND	1.00		µg/L	1	5/4/2016 7:59:03 PM
m,p-Xylene	ND	1.00		µg/L	1	5/4/2016 7:59:03 PM
o-Xylene	ND	1.00		µg/L	1	5/4/2016 7:59:03 PM
Surr: Dibromofluoromethane	101	45.4-152		%Rec	1	5/4/2016 7:59:03 PM
Surr: Toluene-d8	100	40.1-139		%Rec	1	5/4/2016 7:59:03 PM
Surr: 1-Bromo-4-fluorobenzene	95.8	64.2-128		%Rec	1	5/4/2016 7:59:03 PM



**Client:** AECOM

**Collection Date:** 5/3/2016 1:50:00 PM

**Project:** Former Group Health

**Lab ID:** 1605052-005

**Matrix:** Water

**Client Sample ID:** GWE-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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**Gasoline by NWTPH-Gx**

Batch ID: R29146      Analyst: BC

Gasoline	ND	50.0		µg/L	1	5/4/2016 8:28:09 PM
Surr: 4-Bromofluorobenzene	97.0	65-135		%Rec	1	5/4/2016 8:28:09 PM
Surr: Toluene-d8	101	65-135		%Rec	1	5/4/2016 8:28:09 PM

**Volatile Organic Compounds by EPA Method 8260C**

Batch ID: R29144      Analyst: BC

Benzene	ND	1.00		µg/L	1	5/4/2016 8:28:09 PM
Toluene	ND	1.00		µg/L	1	5/4/2016 8:28:09 PM
Ethylbenzene	ND	1.00		µg/L	1	5/4/2016 8:28:09 PM
m,p-Xylene	ND	1.00		µg/L	1	5/4/2016 8:28:09 PM
o-Xylene	ND	1.00		µg/L	1	5/4/2016 8:28:09 PM
Surr: Dibromofluoromethane	99.3	45.4-152		%Rec	1	5/4/2016 8:28:09 PM
Surr: Toluene-d8	100	40.1-139		%Rec	1	5/4/2016 8:28:09 PM
Surr: 1-Bromo-4-fluorobenzene	95.9	64.2-128		%Rec	1	5/4/2016 8:28:09 PM

**Work Order:** 1605052  
**CLIENT:** AECOM  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID <b>LCS-R29146</b>	SampType: <b>LCS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29146</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R29146</b>		Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549220</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	515	50.0	500.0	0	103	65	135				
Surr: Toluene-d8	25.2		25.00		101	65	135				
Surr: 4-Bromofluorobenzene	25.1		25.00		100	65	135				

Sample ID <b>MB-R29146</b>	SampType: <b>MBLK</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29146</b>							
Client ID: <b>MBLKW</b>	Batch ID: <b>R29146</b>		Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549221</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0									
Surr: Toluene-d8	24.4		25.00		97.8	65	135				
Surr: 4-Bromofluorobenzene	24.2		25.00		96.9	65	135				

Sample ID <b>1605048-035BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29146</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R29146</b>		Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549218</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	25.5		25.00		102	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.1		25.00		96.4	65	135		0	0	

Sample ID <b>1604055-016AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29146</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R29146</b>		Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549427</b>							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	504	50.0	500.0	62.03	88.5	65	135				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	25.0		25.00		99.8	65	135				

**Work Order:** 1605052  
**CLIENT:** AECOM  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Gasoline by NWTPH-Gx**

Sample ID <b>1604055-016AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>			Prep Date: <b>5/4/2016</b>	RunNo: <b>29146</b>					
Client ID: <b>BATCH</b>	Batch ID: <b>R29146</b>				Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549428</b>					
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	513	50.0	500.0	62.03	90.2	65	135	504.4	1.66	30	
Surr: Toluene-d8	24.9		25.00		99.6	65	135		0	0	
Surr: 4-Bromofluorobenzene	24.9		25.00		99.6	65	135		0	0	

**Work Order:** 1605052  
**CLIENT:** AECOM  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID	<b>LCS-R29144</b>	SampType:	<b>LCS</b>	Units:	<b>µg/L</b>	Prep Date:	<b>5/4/2016</b>	RunNo:	<b>29144</b>		
Client ID:	<b>LCSW</b>	Batch ID:	<b>R29144</b>			Analysis Date:	<b>5/4/2016</b>	SeqNo:	<b>549201</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.2	1.00	20.00	0	90.8	69.3	132				
Toluene	18.5	1.00	20.00	0	92.7	61.3	145				
Ethylbenzene	19.4	1.00	20.00	0	96.8	72	130				
m,p-Xylene	39.1	1.00	40.00	0	97.8	70.3	134				
o-Xylene	16.7	1.00	20.00	0	83.6	72.1	131				
Surr: Dibromofluoromethane	25.7		25.00		103	45.4	152				
Surr: Toluene-d8	24.6		25.00		98.4	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.4		25.00		102	64.2	128				

Sample ID	<b>MB-R29144</b>	SampType:	<b>MBLK</b>	Units:	<b>µg/L</b>	Prep Date:	<b>5/4/2016</b>	RunNo:	<b>29144</b>		
Client ID:	<b>MBLKW</b>	Batch ID:	<b>R29144</b>			Analysis Date:	<b>5/4/2016</b>	SeqNo:	<b>549202</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00									
Toluene	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	24.3		25.00		97.2	45.4	152				
Surr: Toluene-d8	24.1		25.00		96.3	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	24.0		25.00		96.1	64.2	128				

Sample ID	<b>1605048-035BDUP</b>	SampType:	<b>DUP</b>	Units:	<b>µg/L</b>	Prep Date:	<b>5/4/2016</b>	RunNo:	<b>29144</b>		
Client ID:	<b>BATCH</b>	Batch ID:	<b>R29144</b>			Analysis Date:	<b>5/4/2016</b>	SeqNo:	<b>549199</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	

**Work Order:** 1605052  
**CLIENT:** AECOM  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1605048-035BDUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>				Prep Date: <b>5/4/2016</b>	RunNo: <b>29144</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>R29144</b>					Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549199</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	1.00						0		30	
Surr: Dibromofluoromethane	24.4		25.00		97.4	45.4	152		0		
Surr: Toluene-d8	25.0		25.00		99.8	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	23.9		25.00		95.7	64.2	128		0		

Sample ID <b>1604055-016AMS</b>	SampType: <b>MS</b>	Units: <b>µg/L</b>				Prep Date: <b>5/4/2016</b>	RunNo: <b>29144</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>R29144</b>					Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549194</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.2	1.00	20.00	0	111	65.4	138				
Toluene	21.9	1.00	20.00	0	110	64	139				
Ethylbenzene	23.9	1.00	20.00	0.2300	118	64.5	136				
m,p-Xylene	48.5	1.00	40.00	0.9300	119	63.3	135				
o-Xylene	20.6	1.00	20.00	0.3900	101	65.4	134				
Surr: Dibromofluoromethane	25.6		25.00		102	45.4	152				
Surr: Toluene-d8	24.5		25.00		98.0	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	25.6		25.00		102	64.2	128				

Sample ID <b>1604055-016AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>				Prep Date: <b>5/4/2016</b>	RunNo: <b>29144</b>				
Client ID: <b>BATCH</b>	Batch ID: <b>R29144</b>					Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549569</b>				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.5	1.00	20.00	0	113	65.4	138	22.19	1.48	30	
Toluene	22.7	1.00	20.00	0	114	64	139	21.93	3.58	30	
Ethylbenzene	23.9	1.00	20.00	0.2300	118	64.5	136	23.92	0.251	30	
m,p-Xylene	48.3	1.00	40.00	0.9300	119	63.3	135	48.52	0.372	30	
o-Xylene	20.8	1.00	20.00	0.3900	102	65.4	134	20.61	0.966	30	
Surr: Dibromofluoromethane	26.2		25.00		105	45.4	152		0	0	
Surr: Toluene-d8	25.4		25.00		102	40.1	139		0	0	
Surr: 1-Bromo-4-fluorobenzene	25.6		25.00		102	64.2	128		0	0	

**Work Order:** 1605052  
**CLIENT:** AECOM  
**Project:** Former Group Health

**QC SUMMARY REPORT**  
**Volatile Organic Compounds by EPA Method 8260C**

Sample ID <b>1604055-016AMSD</b>	SampType: <b>MSD</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29144</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R29144</b>	Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549569</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID <b>1605040-002ADUP</b>	SampType: <b>DUP</b>	Units: <b>µg/L</b>	Prep Date: <b>5/4/2016</b>	RunNo: <b>29144</b>							
Client ID: <b>BATCH</b>	Batch ID: <b>R29144</b>	Analysis Date: <b>5/4/2016</b>	SeqNo: <b>549573</b>								
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Surr: Dibromofluoromethane	24.6		25.00		98.2	45.4	152		0		
Surr: Toluene-d8	24.0		25.00		95.9	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	24.5		25.00		98.0	64.2	128		0		

Client Name: **URS**

Work Order Number: **1605052**

Logged by: **Clare Griggs**

Date Received: **5/3/2016 3:00:00 PM**

### Chain of Custody

1. Is Chain of Custody complete? Yes  No  Not Present
2. How was the sample delivered? Client

### Log In

3. Coolers are present? Yes  No  NA
4. Shipping container/cooler in good condition? Yes  No
5. Custody Seals present on shipping container/cooler?  
(Refer to comments for Custody Seals not intact) Yes  No  Not Required
6. Was an attempt made to cool the samples? Yes  No  NA
7. Were all items received at a temperature of >0°C to 10.0°C\* Yes  No  NA
8. Sample(s) in proper container(s)? Yes  No
9. Sufficient sample volume for indicated test(s)? Yes  No
10. Are samples properly preserved? Yes  No
11. Was preservative added to bottles? Yes  No  NA
12. Is there headspace in the VOA vials? Yes  No  NA
13. Did all samples containers arrive in good condition(unbroken)? Yes  No
14. Does paperwork match bottle labels? Yes  No
15. Are matrices correctly identified on Chain of Custody? Yes  No
16. Is it clear what analyses were requested? Yes  No
17. Were all holding times able to be met? Yes  No

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

### Item Information

Item #	Temp °C
Cooler	7.0
Sample	5.0
Temp Blank	2.5

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



# Fremont

3600 Fremont Ave N.  
Seattle, WA 98103

Tel: 206-352-3790  
Fax: 206-352-7178

Date: \_\_\_\_\_

Page: \_\_\_\_\_

of: \_\_\_\_\_

Laboratory Project No (Internal):

## Chain of Custody Record

110050052

Client: ATECOM  
Address: Former Group Health  
City, State, zip: SEATTLE  
Telephone: 206-438-2700 Fax: \_\_\_\_\_

Project Name: Former Group Health  
Project No: 60391502-33764955  
Location: Reactor WJF  
Report To (PM): DAVID RAUPHOFER / ANTHONY PRIMEA  
PM Email: David.rauphofer@acorn.com

\*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	Analytes											Comments	
				VOCs (EPA 8260 / 624) GX/BTEX	BTEX 9210	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T)   Dissolved (D)	Anions (IC)**		EDB (8011)
1 FRP BLANK				X	X	X	X	X	X	X	X	X	X	X	X	
2 MW-27	5/3/16	1025	W	X	X	X	X	X	X	X	X	X	X	X	X	
3 MW-13	5/3/16	1140	W	X	X	X	X	X	X	X	X	X	X	X	X	
4 MW-10	5/3/16	1240	W	X	X	X	X	X	X	X	X	X	X	X	X	
5 GWE-1	5/3/16	1350	W	X	X	X	X	X	X	X	X	X	X	X	X	
6																
7																
8																
9																
10																

**VOCs 8260 FOR BTEX ONLY**

\*\*\*Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Sample Disposal:  Return to Client  Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished 5/3/16 1500 Date/Time

Relinquished 5/3/16 1500 Date/Time

Received 5/3/16 1500 Date/Time

Received 5/3/16 1500 Date/Time

TAT → SameDay^ NextDay^ 2 Day 3 Day STD

Please coordinate with the lab in advance