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**Prepared for:**

Neil and May Cotter and  
John and Antoinette Coyle

## Second Quarter 2017 Semiannual Monitoring Report

Grove Street Wash Rack  
Fuel leak Case RO000027 and GeoTracker  
Global ID Number T0600102106  
3884 Martin Luther King Jr. Way  
Oakland, California

13 September 2017

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Neil and Mary Cotter  
John and Antoinette Coyle  
2847 Arguello Drive  
Burlingame, CA94010

8 August 2017

Karel Detterman, PG  
Hazardous Materials Specialist  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, CA 94502

**Re: Second Quarter 2017 Semiannual Monitoring Report  
Fuel leak Case RO0000027 and GeoTracker Global ID Number T0600102106  
Grove Street Wash Rack, 3884 Martin Luther King Jr. Way, Oakland, California**

Dear Ms. Detterman:

Please find attached for your review a copy of the Second Quarter 2017 Monitoring Report for the Grove Street Wash Rack, 3884 Martin Luther King Jr. Way, Oakland, California. This report has been prepared by ERM West Inc. (ERM).

I certify under penalty of perjury that to the best of my knowledge this report is true, complete and correct.

Sincerely

Mary Cotter:

Mary Cotter date 8/8/17

Neil Cotter:

Neil Cotter date 8/8/17

Antoinette Coyle:

Antoinette Coyle date 8/8/2017

John Coyle:

John Coyle date 8-8-17

cc: Alexandra Foote, Law Offices of Alexandra Foote  
Giorgio Molinario, ERM

Cotter and Coyle

# Second Quarter 2017 Semi-annual Monitoring Report

Grove Street Wash Rack  
Fuel leak Case RO0000027 and GeoTracker Global ID Number  
T0600102106  
3884 Martin Luther King Jr. Way  
Oakland, California

13 September 2017

ERM Project No. 0307273



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Shannon Martin, P.G.  
*Senior Geologist*

A handwritten signature in blue ink, appearing to read "Giorgio Molinario".

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Giorgio Molinario  
*Project Manager*

A handwritten signature in black ink, appearing to read "Belinda Butler-Veytia".

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Belinda Butler-Veytia  
*Partner in Charge, Remediation Engineer*

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## 1.0 INTRODUCTION

ERM-West, Inc. (ERM) has prepared this *Second Quarter 2017 Monitoring Report* for Neil and Mary Cotter and John and Antoinette Coyle (Cotter and Coyle) for the former Grove Street Wash Rack (Global ID No. T0600102106) located at 3884 Martin Luther King Junior Way, in Oakland, Alameda County, California (Site). Groundwater monitoring activities were conducted by ERM on 11 July 2017 consistent with procedures presented in the *2013 URS Work Plan for Additional Soil and Groundwater Investigation (Work Plan)* and in accordance with Leaking Underground Storage Tank (LUST) Fund program requirements (CUF Claim No. 13712). The results of the Second Quarter 2017 groundwater monitoring event are presented herein.

## 1.1 PURPOSE

The purpose of the monitoring activities documented in this report is to monitor groundwater conditions and trends as requested by the Alameda County Department of Environmental Health (Case No. RO0000027) and San Francisco Bay Regional Water Quality Control Board (Case No. 01-2290).

## 1.2 SITE LOCATION

The Site is located at 3884 Martin Luther King Junior Way in Oakland, Alameda County, California, and is identified by the Alameda County Assessor's Office Assessor's Parcel Number (APN) 012-0968-31. The site is located in a mixed commercial and residential zoned area, and occupies approximately 10,250 square feet. The adjoining properties and nearby land use include the following:

- North: 39th Street, followed by a commercial property;
- East: the Highway 24 right-of-way, followed by the MacArthur BART station;
- South: a multi-story residential and commercial building; and
- West: Martin Luther King Junior Way (MLK Jr. Way), followed by residential and vacant properties.

The surface water body nearest to the site is the San Francisco Bay, located approximately 1.4 miles west of the site. Groundwater beneath the site is interpreted to flow to the west, towards the San Francisco Bay.

## *SITE BACKGROUND*

The site is the location of the former Grove Street Wash Rack and Lucky's Auto. Historical site usage consisted of a gas station that operated in the 1950's and 1960's and an auto body shop operated on the eastern portion of the site until 2004. Three underground storage tanks (USTs) were removed from the gas station on 5 January 1995.

The neighboring property immediately south of the site was redeveloped into a multi-story residential and commercial building in 2006, as it remains today.

No operations currently take place at the site. The former site buildings have been removed, and only concrete pads, paved, and unpaved areas remain on the site. An advertising billboard is located on the southwest corner of the site. The site is surrounded by a chain-link fence.

Multiple environmental investigations and remedial activities have been performed at the site, including:

- In 1995, Scott Environmental performed an excavation of three USTs. One soil sample was taken at each UST removal location. Detectable concentrations of total petroleum hydrocarbons as gasoline (TPH-g) and volatile organic compounds (VOCs) were discovered in the soil samples collected.
- In 1996, H2O GEOL collected one soil sample from a soil stockpile on the site. No TPH-g or benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in the sample.
- In 2004, URS performed a soil and groundwater investigation at the site under the Department of Toxic Substances Control Brownfield's Program. Elevated concentrations of TPH-g were found in the location of two former USTs and elevated concentrations of benzene were found in the location of all three former USTs.
- In 2006, John Carver Consulting performed a soil and groundwater investigation. Elevated concentrations of TPH-g and benzene were discovered on the northwestern portion of the site adjacent to the former USTs.
- In 2013, URS performed a soil and groundwater investigation and developed a work plan. Initially, five groundwater monitoring wells were installed. Three additional wells were installed downgradient in order to address data gaps regarding the vertical and horizontal extent of contamination. Soil samples collected from the monitoring well borings were found to have elevated concentrations of TPH-g and

BTEX at selected locations. Groundwater samples collected had elevated concentrations of TPH-g and BTEX.

- In 2014, URS prepared a Remedial Design and Implementation Plan (RDIP). The RDIP presented the remedial design including excavation of contaminated soil and in-situ chemical oxidation followed by application of enhanced bioremediation augmentation materials, and was approved by the ACDEH.
- In February 2017, ERM performed an additional soil, groundwater and soil gas investigation to refine the contours of the COCs in groundwater and evaluate their soil vapor concentrations.



## 2.0 *MONITORING PROGRAM*

Consistent with the Work Plan that was approved by the ACDEH, groundwater monitoring was conducted as described below.

### 2.1 *GROUNDWATER MONITORING*

As stated in the Work Plan, groundwater monitoring is required on a semiannual basis. Semiannual monitoring includes the following:

- Depth-to-water measurements at all accessible monitoring wells;
- Collection of groundwater samples from site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, and MW-8); and
- Analysis of all groundwater samples for TPH-g, BTEX, naphthalene, 1,2-dichloroethane (1,2-DCA), and cis-1,2-dichloroethene (cis-1,2-DCE) by United States Environmental Protection Agency (USEPA) Method 8260B.

Second Quarter 2017 semiannual monitoring field activities were performed on 11 July 2017 by BlaineTech Services, under ERM supervision.

Consistent with the Work Plan, water level measurements and groundwater samples for the Second Quarter 2017 semiannual monitoring event were collected from the eight site monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7 and MW-8). A duplicate groundwater sample was collected at monitoring well MW-2.

Groundwater levels were obtained by measuring the depth-to-water using the top of well casings as a reference point. Before measuring groundwater levels at each well, the well cap was removed and the water level in the well was allowed to equilibrate with atmospheric pressure. Depth-to-water and groundwater elevation data for Second Quarter 2017 and previous monitoring events are summarized in Table 1.

Sampling procedures included purging groundwater from the monitoring wells. Groundwater was purged using a peristaltic pump with new tubing placed at the mid-point of the screen interval. During purging, groundwater physical parameters were measured using a multi-parameter meter equipped with a flow cell. The meter was calibrated in accordance with manufacturer guidelines before use. During purging, the following parameters were measured and/or assessed and recorded on the field sampling sheets:

- Purge volume removed;
- Elapsed purging time;
- Flow rate;
- pH;
- Electrical conductivity;
- Temperature;
- Liquid color;
- Oxidation-reduction potential;
- Dissolved oxygen;
- Turbidity; and
- Odor.

Groundwater field sampling sheets for all site wells sampled are included in Appendix A.

Following stabilization of groundwater parameters, samples were collected into laboratory provided, pre-preserved containers. Following groundwater sample collection, sample containers were labeled, placed in zip-top-style plastic bags, packed in an ice-filled cooler, and transported under standard chain-of-custody procedures to TestAmerica, Inc., a California-certified laboratory in Pleasanton, California.

For quality assurance/quality control purposes, duplicate groundwater samples were collected at a rate of one duplicate sample per 10 groundwater samples. Trip blanks were included in each cooler of samples sent to the laboratory. ERM reviewed the analytical results for quality assurance/quality control (QA/QC) purposes in accordance with the *USEPA National Functional Guidelines for Superfund Organic Methods Data Review* (January 2017). Copies of the laboratory data sheets are presented in Appendix B.

### **3.1 GROUNDWATER MONITORING RESULTS**

The groundwater elevations and analytical results for the Second Quarter 2017 semiannual monitoring event were compared to the results of previous monitoring events and to February 2016 RWQCB Environmental Screening Levels (ESLs) for commercial/industrial properties, and the results are discussed below.

#### **3.1.1 Groundwater Elevations and Flow Direction**

Depth-to-water measurements for the Second Quarter 2017 semiannual monitoring event, as shown in Table 1, were used to generate the potentiometric surface map presented as Figure 2. Groundwater was encountered at depths ranging from 12.53 (MW-8) to 15.98 (MW-5) feet-below top of casing (ft-btoc). In addition, depth to water was measured at wells MW-2, MW-3, and MW-4 on 16 June 2017 to evaluate the water level drop from the wet season conditions. During this June water level measurement round groundwater was encountered at depths ranging from 13.85 (MW-2) to 14.93 (MW-4) ft-btoc.

In general, groundwater elevations measured in July 2017 were lower compared to the previous monitoring event in December 2016. Groundwater elevations in site monitoring wells ranged from 58.17 feet above mean sea level (amsl) in MW-1 to 58.93 feet amsl in MW-5 feet above mean sea level (Figure 2). Groundwater elevations were higher than

Third Quarter 2016 levels, but consistent with historical elevations. Groundwater elevations measured at wells MW-5, MW-7 and MW-8 have historically appeared to be anomalous and therefore, these data points were excluded from the potentiometric surface evaluation.

Based on the groundwater elevations measured in July 2017, the estimated groundwater gradient was approximately 0.01 feet/foot (ft/ft) toward the west, which is consistent with the previous monitoring event.

### 3.1.2 *Groundwater Analytical Results*

The groundwater analytical results from the Second Quarter 2017 semiannual monitoring event are presented below.

#### 3.1.2.1 *TPH and VOCs in Groundwater*

Analytical results for TPH and VOCs detected in groundwater collected from the eight Site monitoring wells are presented in Table 3 and on Figure 3. Monitoring results are compared with the Low Threat Closure Policy (LTCP) criteria provided in the tables, where applicable (State Water Resources Control Board, Resolution No. 2012-0062). Because LTCP criteria are not available for all analytes ERM also compared the results to commercial/industrial groundwater ESLs for vapor intrusion concerns for comparison purposes. As shown in Table 3, TPH-g, BTEX, naphthalene and 1,2-DCA were detected in site groundwater.

TPH-g was detected in groundwater in MW-4 at 5,100 µg/L during the July 2017 monitoring event. TPH-g was not detected above the reporting limit at other Site monitoring wells. TPH-g detected in groundwater at MW-4 was generally consistent with historical results. The concentration of TPH-g in MW-2 changed from 170 µg/L in December 2016 to below the reporting limit (2,500 µg/L) in July 2017. The elevated reporting limit was due to the benzene peak in the groundwater sample and the laboratory could not address this by sample dilution. TPH-g concentration at MW-6 has been below 100 µg/L for the last three monitoring events, and dropped below the reporting limit (50 µg/L) during Second Quarter 2017.

Benzene was detected in groundwater at two wells (MW-2 and MW-4) with concentrations of 1,400 µg/L (duplicate, 1,500 µg/L) and 1,100 µg/L, respectively, during the July 2017 monitoring event. The concentrations of benzene in groundwater were well below the LTCP of 3,000 µg/L. Benzene in groundwater at MW-6 dropped from 59 µg/L to below the reporting limit (50 µg/L) between December 2016 and July 2017. The concentrations of benzene in groundwater at MW-4 and MW-6 were consistent with historical results. The concentration of benzene in MW-2

dropped significantly from 2,500 µg/L in May 2016 to 26 µg/L in December 2016 then increased to 1,500 µg/L in July 2017. In general, the benzene concentrations have been decreasing in site groundwater with significant seasonal variation.

Toluene was detected at 35 µg/L in MW-2 (duplicate, 35 µg/L) and 88 µg/L in MW-4 during the Second Quarter 2017 groundwater monitoring event. The concentrations of toluene in groundwater were below the ESL of 100,000 µg/L, with exception of MW-4, which was detected at 88 µg/L.

Ethylbenzene was detected in groundwater at concentrations of 52 µg/L in MW-2 and 920 µg/L in MW-4 during the July 2017 monitoring event. The MW-4 concentration of ethylbenzene in groundwater was above the ESL of 370 µg/L; however, toluene concentrations at MW-4 have been trending down over time. The ethylbenzene concentration of 35 µg/L in MW-2 was below the ESL, and the ethylbenzene concentrations at this location have also shown a downward trend over time.

Xylene was only detected in well MW-2 at a concentration of 52 µg/L (duplicate, 52 µg/L) and from well MW-4 at a concentration of 410 µg/L during the groundwater monitoring event. The results are below the ESL and are generally consistent with the downward trend shown over the previous monitoring events.

Naphthalene was detected in groundwater from well MW-2 at a concentration of 4.2 µg/L (duplicate, 4.0 µg/L) and MW-4 at a concentration of 160 µg/L during the Second Quarter 2017 monitoring event. The concentration of naphthalene in groundwater was below the ESL of 180 µg/L. As shown in Table 3, naphthalene concentrations in groundwater samples collected from MW-2 and MW-4 appear to be generally decreasing over time.

The compound 1,2-DCA was only detected in MW-2 at 0.71 µg/L (duplicate, 0.65 µg/L) during the July 2017 monitoring event. This groundwater concentration was below the ESL of 90 µg/L.

Cis- 1,2-DCE was not detected in any groundwater monitoring wells at the Site during the Second Quarter 2017 monitoring event.

### 3.1.2.1

#### *Data Quality Review*

ERM reviewed analytical data quality including: trip and laboratory blanks, field duplicate results, laboratory control samples (LCS) and duplicates (LCSD), surrogate recoveries, and holding times. All samples were received within temperature limits at the laboratory and were

analyzed within method-specified holding times. No analytes were detected in the trip or method blanks analyzed. Surrogate recoveries were within acceptance criteria. LCS and LCSD sample recoveries were also within acceptance criteria. LCSD samples were within relative percent difference (RPD) criteria of their respective LCS samples. The RPDs of all analytes were within 20 percent RPD criteria. Overall, all data reviewed are considered usable for their intended purpose.

### 3.1.2.3 *Groundwater Physical Parameters*

The following groundwater physical parameters were measured at regular intervals during the purging process: conductivity, temperature, pH, oxidation-reduction potential (ORP), and dissolved oxygen (DO). The final field parameter measurements prior to sampling are summarized in Table 2. The following are ranges of the final parameter readings from all eight monitoring wells at the site prior to sampling:

- Conductivity ranged from 0.823 (MW-8) to 1.232 mS/cm (MW-5);
- Temperature ranged from 18.6 (MW-8) to 21.8 °C (MW-4);
- pH ranged between 6.34 (MW-1) to 6.88 (MW-7);
- ORP ranged from -45.3 (MW-7) to -221.3 millivolts (mV) (MW-2); and
- DO ranged from 0.81 (MW-2) to 4.62 (MW-8) mg/L.

Field sheets in Appendix A present the specific range of parameters in each monitoring well recorded during sampling. DO levels indicate that the groundwater in monitoring wells MW-1, MW-3, MW-6, MW-5, MW-7, and MW-8 generally exhibit oxygenated/oxidizing conditions; although ORP values have decreased from the previous monitoring event. The groundwater in monitoring wells MW-2 and MW-4 appears to show oxygen-limited and reducing conditions. These conditions are consistent with the above concentrations of petroleum hydrocarbons at MW-2 and MW-4.

Based on a comparison of the July 2017 groundwater monitoring event to historical monitoring results, ERM has developed the following conclusions:

- Groundwater elevations have decreased significantly since December 2016, but they are within historical averages.
- Groundwater physical parameters were generally consistent with historical observations.
- TPH-g and BTEX were only detected in wells MW-2 and MW-4. For the first time since monitoring activities began in 2013, no VOCs or TPH-g were detected in well MW-6.
- The concentrations of TPH-g and BTEX were higher in MW-2 and MW-4 than in the December 2016 (wet weather) monitoring event. However, the concentration trends for these compounds continued to decrease.
- All benzene concentrations were well below the LTCP criterion of 3,000 µg/L for plumes less than 250 feet in size.
- Naphthalene was detected in wells MW-2, MW-4, and MW-5 at concentrations of 2.7 to 160 µg/L significantly below the commercial/industrial vapor intrusion ESL.
- The compound 1,2-DCA was only detected in groundwater at MW-2 at 0.71 µg/L, significantly below the commercial/industrial vapor intrusion ESL.
- Cis-1,2-DCE was not detected in any groundwater samples collected.

## *Figures*

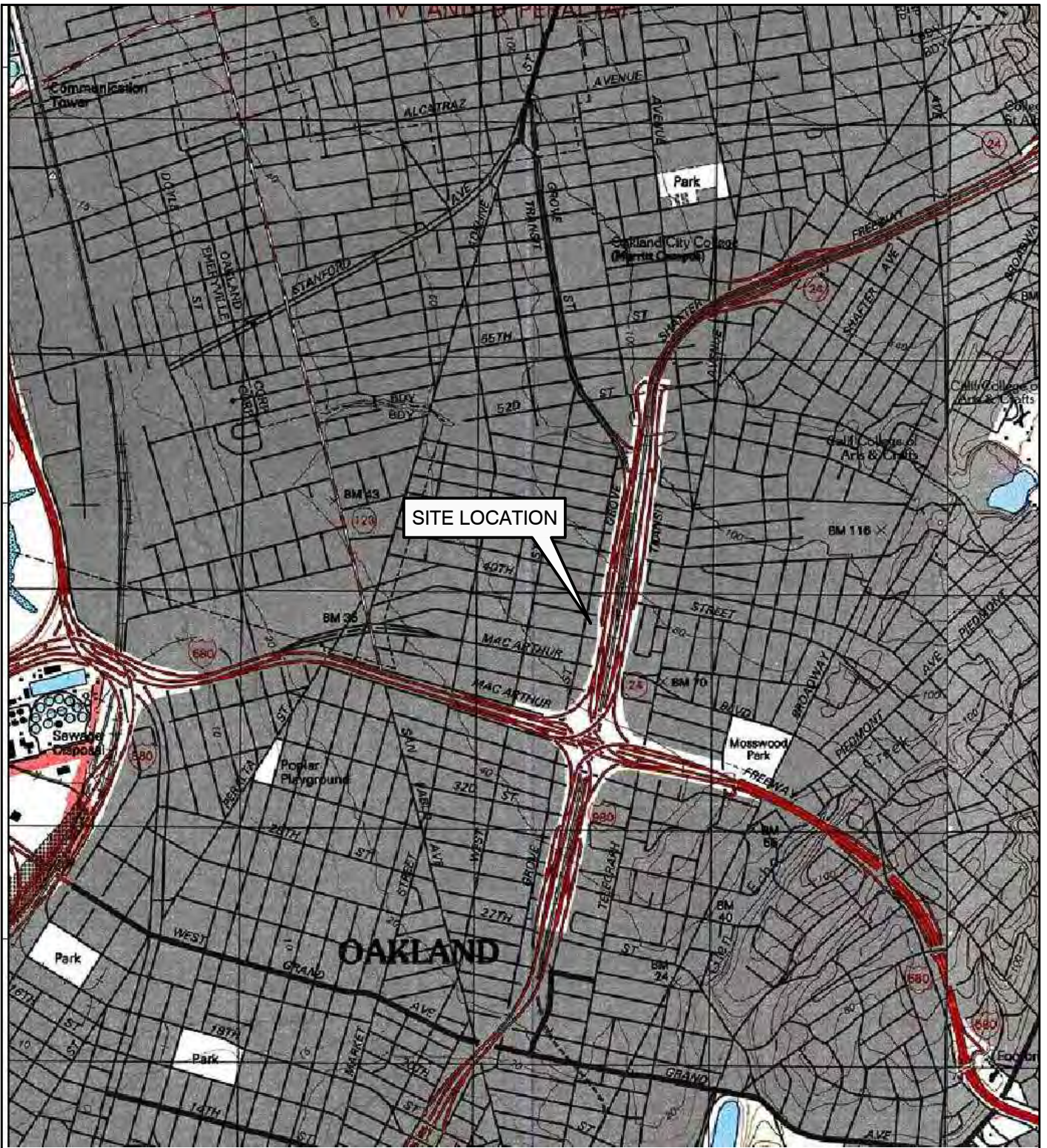


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8/07/2017.

J. Estrada

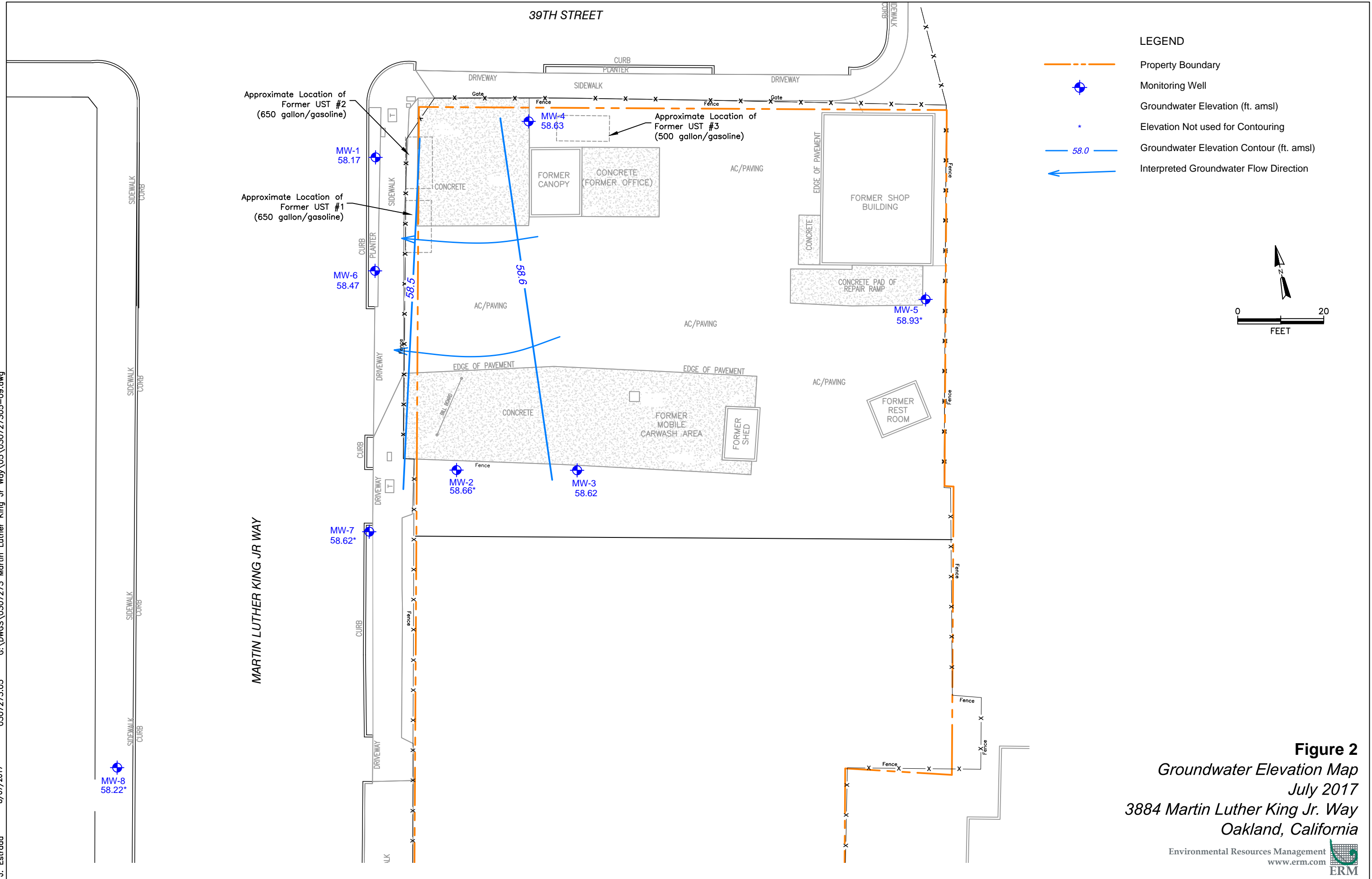


**Figure 1**  
*Site Location Map*  
 3884 Martin Luther King Jr. Way  
 Oakland, California

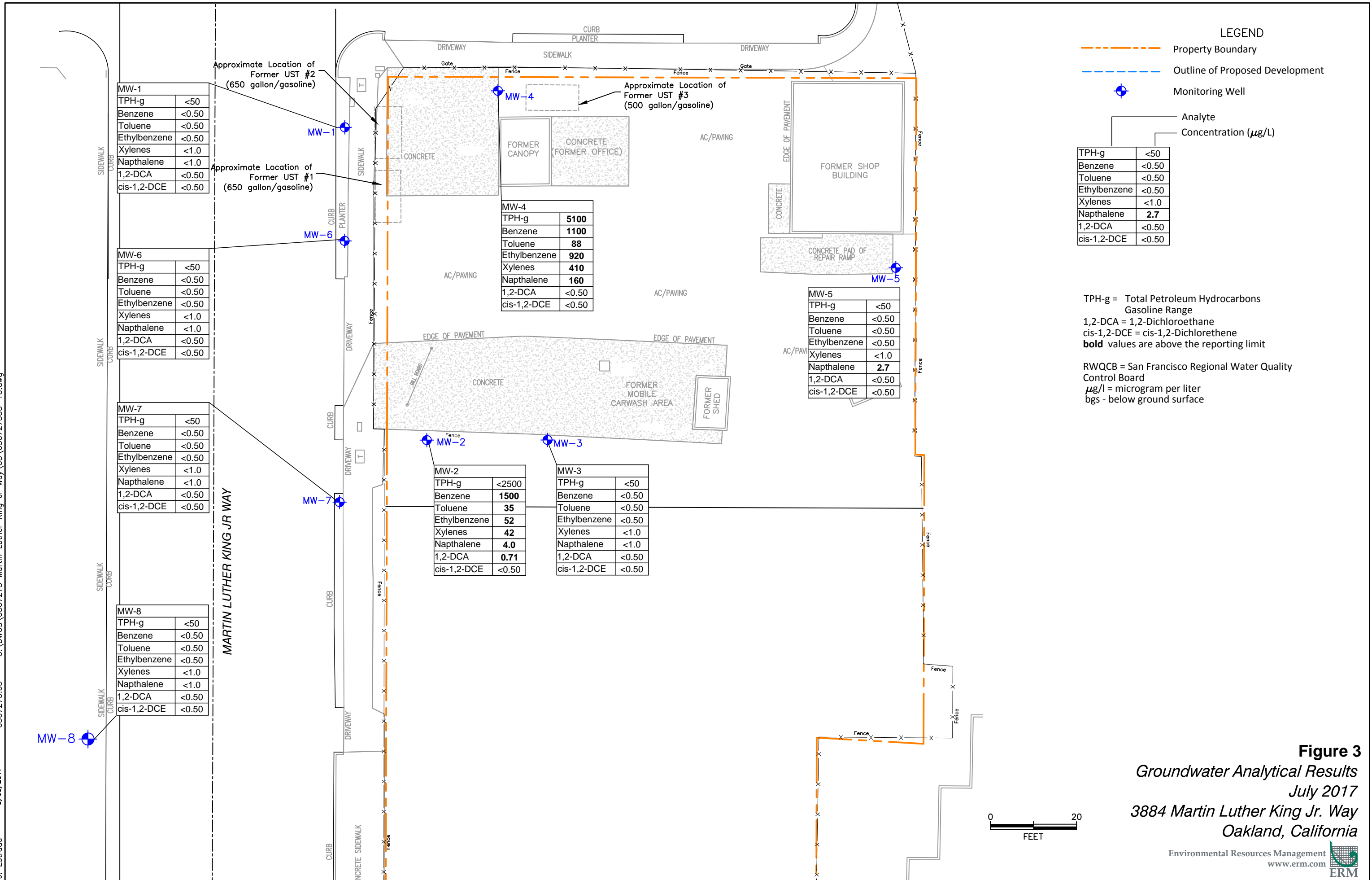
References:  
 U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle,  
 Oakland West, California, 1993

Environmental Resources Management  
 www.erm.com





**Figure 2**  
*Groundwater Elevation Map*  
 July 2017  
 3884 Martin Luther King Jr. Way  
 Oakland, California



**Figure 3**  
 Groundwater Analytical Results  
 July 2017  
 3884 Martin Luther King Jr. Way  
 Oakland, California

## *Tables*

**Table 1**  
**Groundwater Elevation Data**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

<b>Well</b>	<b>Date</b>	<b>Well Screen (ft-bmp)</b>	<b>Depth to Groundwater (ft-bmp)</b>	<b>Measuring Point Elevation (ft-msl)</b>	<b>Water Elevation (ft-amsl)</b>
MW-1	7/18/2013	12-19	14.43	72.83	58.40
MW-1	10/23/2013	12-19	14.99	72.83	57.84
MW-1	7/10/2014	12-19	14.41	72.83	58.42
MW-1	9/15/2014	12-19	15.16	72.83	57.67
MW-1	1/9/2015	12-19	12.14	72.83	60.69
MW-1	3/31/2015	12-19	13.57	72.83	59.26
MW-1	10/14/15	12-19	15.43	72.83	57.40
MW-1	5/3/2016	12-19	14.11	72.83	58.72
MW-1	12/29/2016	12-19	11.07	72.83	61.76
MW-1	07/11/17	12-19	14.66	72.83	58.17
MW-2	7/18/2013	13-20	14.90	73.16	58.26
MW-2	10/23/2013	13-20	15.07	73.16	58.09
MW-2	7/10/2014	13-20	14.69	73.16	58.47
MW-2	9/15/2014	13-20	15.45	73.16	57.71
MW-2	1/9/2015	13-20	13.82	73.16	59.34
MW-2	3/31/2015	13-20	14.08	73.16	59.08
MW-2	10/14/15	13-20	15.75	73.16	57.41
MW-2	5/3/2016	13-20	15.20	73.16	57.96
MW-2	12/29/2016	13-20	11.20	73.16	61.96
MW-2	6/16/2017	13-20	13.85	73.16	59.31
MW-2	07/11/17	13-20	14.50	73.16	58.66
MW-3	7/18/2013	13-20	15.08	73.54	58.46
MW-3	10/23/2013	13-20	15.45	73.54	58.09
MW-3	7/10/2014	13-20	14.68	73.54	58.86
MW-3	9/15/2014	13-20	15.56	73.54	57.98
MW-3	1/9/2015	13-20	13.32	73.54	60.22
MW-3	3/31/2015	13-20	14.25	73.54	59.29
MW-3	10/14/2015	13-20	15.74	73.54	57.80
MW-3	5/3/2016	13-20	12.82	73.54	60.72
MW-3	12/29/2016	13-20	11.59	73.54	61.95
MW-3	6/16/2017	13-20	14.29	73.54	59.25
MW-3	07/11/17	13-20	14.92	73.54	58.62
MW-4	7/18/2013	11-18	14.42	73.18	58.76
MW-4	10/23/2013	11-18	15.15	73.18	58.03
MW-4	7/10/2014	11-18	14.43	73.18	58.75
MW-4	9/15/2014	11-18	15.25	73.18	57.93
MW-4	1/9/2015	11-18	12.91	73.18	60.27
MW-4	3/31/2015	11-18	13.68	73.18	59.50
MW-4	10/14/2015	11-18	15.48	73.18	57.70
MW-4	5/3/2016	11-18	12.50	73.18	60.68
MW-4	12/29/2016	11-18	11.07	73.18	62.11
MW-4	6/16/2017	11-18	14.93	73.18	58.25
MW-4	07/11/17	11-18	14.55	73.18	58.63

**Table 1**  
**Groundwater Elevation Data**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

Well	Date	Well Screen (ft-bmp)	Depth to Groundwater (ft-bmp)	Measuring Point Elevation (ft-msl)	Water Elevation (ft-amsl)
MW-5	7/18/2013	15-21	16.89	74.92	58.03
MW-5	10/23/2013	15-21	17.65	74.92	57.27
MW-5	7/10/2014	15-21	16.79	74.92	58.13
MW-5	9/15/2014	15-21	17.82	74.92	57.10
MW-5	1/9/2015	15-21	14.78	74.91	60.13
MW-5	3/31/2015	15-21	15.48	74.91	59.43
MW-5	10/14/2015	15-21	18.24	74.91	56.67
MW-5	5/3/2016	15-21	14.36	74.91	60.55
MW-5	12/29/2016	15-21	13.94	74.91	60.97
MW-5	07/11/17	15-21	15.98	74.91	58.93
MW-6	9/15/2014	11-19	14.86	72.43	57.57
MW-6	1/9/2015	11-19	11.39	72.43	61.04
MW-6	3/31/2015	11-19	13.26	72.43	59.17
MW-6	10/14/2015	11-19	14.66	72.43	57.77
MW-6	5/3/2016	11-19	12.00	72.43	60.43
MW-6	12/29/2016	11-19	10.75	72.43	61.68
MW-6	07/11/17	11-19	13.96	72.43	58.47
MW-7	9/15/2014	11-19	13.61	71.46	57.85
MW-7	1/9/2015	11-19	11.27	71.46	60.19
MW-7	3/31/2015	11-19	11.93	71.46	59.53
MW-7	10/14/2015	11-19	13.84	71.46	57.62
MW-7	5/3/2016	11-19	10.86	71.46	60.60
MW-7	12/29/2016	11-19	9.34	71.46	62.12
MW-7	07/11/17	11-19	12.84	71.46	58.62
MW-8	9/15/2014	11-18	14.23	70.75	56.52
MW-8	1/9/2015	11-18	10.3	70.75	60.45
MW-8	3/31/2015	11-18	12.31	70.75	58.44
MW-8	10/14/2015	11-18	13.22	70.75	57.53
MW-8	5/3/2016	11-18	10.5	70.75	60.25
MW-8	12/29/2016	11-18	8.6	70.75	62.15
MW-8	07/11/17	11-18	12.53	70.75	58.22

**Abbreviations:**

- ft-msl - Feet relative to mean sea level
- ft-amsl - Feet above mean sea level
- ft-bmp - Feet below measuring point

**Table 2**  
**Groundwater Physical Parameters**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

Well	Date	Temperature (°Celsius)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)
well	Date	Temperature	Conductivity	DO	pH	ORP
MW-1	7/18/2013	20.0	1.129	5.74	6.35	63.4
MW-1	10/23/2013	19.2	1.189	1.45	6.42	-55.4
MW-1	7/10/2014	20.0	1.100	0.81	6.42	33.2
MW-1	9/15/2014	20.5	1.100	0.13	6.15	74.9
MW-1	1/9/2015	20.3	1.077	0.27	6.55	-24.9
MW-1	3/31/2015	19.5	1.021	0.91	6.12	61.9
MW-1	10/14/15	21.5	0.765	0.30	6.20	82.6
MW-1	5/3/2016	18.7	0.945	0.53	6.32	-106.0
MW-1	12/29/2016	15.3	0.897	1.14	6.61	84.8
MW-1	7/11/2017	19.1	0.925	4.53	6.34	-89.8
MW-2	7/18/2013	18.7	0.901	3.63	6.62	51.2
MW-2	10/23/2013	18.3	0.852	0.57	6.59	-93.4
MW-2	7/10/2014	19.3	0.878	0.51	6.72	-160.3
MW-2	9/15/2014	19.0	0.936	0.07	6.35	-49.3
MW-2	1/9/2015	19.1	0.959	0.47	6.79	-59.5
MW-2	3/31/2015	18.2	0.934	0.13	6.38	-113.4
MW-2	10/14/15	19.85	0.673	0.40	6.64	-87.3
MW-2	5/3/2016	18.9	0.888	0.35	6.66	-151.0
MW-2	12/29/2016	15	0.825	0.92	6.87	-19.8
MW-2	7/11/2017	19.5	0.866	0.81	6.66	-221.3
MW-3	7/18/2013	18.7	0.799	5.36	6.52	71.9
MW-3	10/23/2013	18.3	1.133	1.84	6.94	213.6
MW-3	7/10/2014	19.6	1.121	1.99	7.10	54.3
MW-3	9/15/2014	18.9	1.162	0.28	6.73	97.4
MW-3	1/9/2015	18.9	1.147	5.30	7.11	334.8
MW-3	3/31/2015	18.2	1.113	3.48	6.71	435.5
MW-3	10/14/2015	19.76	0.773	0.79	6.80	136.0
MW-3	5/3/2016	17.9	1.033	2.39	6.95	-59.0
MW-3	12/29/2016	15.2	0.798	3.84	7.00	-1.9
MW-3	7/11/2017	20.3	0.927	3.10	6.87	-130.5
MW-4	7/18/2013	20.5	1.438	4.21	6.44	25.1
MW-4	10/23/2013	20.6	1.271	0.92	6.34	-85.3
MW-4	7/10/2014	21.5	1.379	0.65	6.50	-47.9
MW-4	9/15/2014	21.2	1.463	0.05	6.25	-20.0
MW-4	1/9/2015	20.1	1.424	0.17	6.74	-59.3
MW-4	3/31/2015	19.6	1.386	0.14	6.29	-48.5
MW-4	10/14/2015	23.48	1.137	0.31	6.44	-31.1
MW-4	5/3/2016	18.9	1.249	0.58	6.57	-146.0
MW-4	12/29/2016	15.9	1.072	0.94	6.73	-71.1
MW-4	7/11/2017	21.8	1.223	1.06	6.59	-112.8

**Table 2**  
**Groundwater Physical Parameters**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

Well	Date	Temperature (°Celsius)	Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)
MW-5	7/18/2013	17.1	0.845	6.17	6.63	78.2
MW-5	10/23/2013	17.0	0.841	0.81	6.56	205.2
MW-5	7/10/2014	17.5	0.795	0.53	6.48	73.8
MW-5	9/15/2014	17.4	0.861	0.08	6.20	103.5
MW-5	1/9/2015	17.6	0.864	0.30	6.49	256.4
MW-5	3/31/2015	17.3	0.842	0.12	6.12	460.5
MW-5	10/14/2015	18.38	0.611	0.30	6.20	123.1
MW-5	5/3/2016	18.8	0.757	0.37	6.40	-110.0
MW-5	12/29/2016	14.7	0.690	0.96	6.48	-33.2
MW-5	7/11/2017	18.8	1.232	3.01	6.57	-188.2
MW-6	9/15/2014	21.3	1.757	2.56	6.51	98.4
MW-6	1/9/2015	20.1	1.716	0.77	7.01	-7.9
MW-6	3/31/2015	19.8	1.569	0.07	6.47	-72.6
MW-6	10/14/2015	22.94	0.977	0.14	6.56	-18.1
MW-6	5/3/2016	19.9	1.24	0.28	6.79	-143.0
MW-6	12/29/2016	16.3	1.083	1.24	6.88	-35.7
MW-6	7/11/2017	19.0	0.859	3.41	6.70	-159.8
MW-7	9/15/2014	20.5	1.508	4.95	6.66	104.3
MW-7	1/9/2015	19.5	1.377	3.14	7.26	115.5
MW-7	3/31/2015	19.2	1.277	0.85	6.74	118.6
MW-7	10/14/2015	22.04	0.899	0.19	6.74	146.0
MW-7	5/3/2016	17.4	1.035	4.04	7.05	-51.0
MW-7	12/29/2016	15.1	0.834	4.27	7.01	31.9
MW-7	7/11/2017	19.9	0.876	2.58	6.88	-45.3
MW-8	9/15/2014	20.4	1.055	5.87	6.81	106.1
MW-8	1/9/2015	19.9	0.813	2.39	9.20	92.9
MW-8	3/31/2015	19.4	0.723	1.03	6.89	155.7
MW-8	10/14/2015	21.75	0.568	0.18	6.87	136.3
MW-8	5/3/2016	18.4	0.826	2.37	7.12	-74.0
MW-8	12/29/2016	13.2	0.776	3.06	7.11	93.7
MW-8	7/11/2017	18.6	0.823	4.62	6.68	-84.1

**Abbreviations:**

DO = Dissolved Oxygen  
mg/L = milligrams per liter  
mS/cm = milliSiemens per centimeter

mV = millivolt  
ORP = Oxidation-Reduction Potential



**Table 3**  
**Petroleum Hydrocarbons and Volatile Organic Compounds**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

Well	Date	Analyte							
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	cis-1,2-DCE
<i>Commercial/Industrial Groundwater ESL</i>		<i>NE</i>	<i>30</i>	<i>100,000</i>	<i>370</i>	<i>38,000</i>	<i>180</i>	<i>90</i>	<i>15,400</i>
<i>LTCP</i>		<i>NE</i>	<i>3000</i>	<i>NE</i>	<i>NE</i>	<i>NE</i>	<i>NE</i>	<i>NE</i>	<i>NE</i>
MW-1	7/18/2013	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<b>4.5</b>	<0.5
MW-1	10/23/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-10 <sup>1</sup>	10/23/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-1	7/10/2014	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-1	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<b>4.0</b>	<0.5
MW-1	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<b>3.1</b>	<0.5
MW-1	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<b>1.8</b>	<0.5
MW-1	10/14/15	<50 UJ	<0.5 UJ	<0.5	<0.5	<1.0	<1.0	<b>2.1</b>	<0.5
MW-1	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<b>2.1</b>	<0.5
MW-1	12/29/16	<50	<0.5	<0.5	<0.5	<1	<1	<b>1.6</b>	<0.5
MW-1	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-2	7/18/2013	<b>560</b>	<b>220</b>	<b>2.9</b>	<b>4.6</b>	<b>35</b>	<1.0	<b>4.3</b>	<0.5
MW-2	10/23/2013	<b>9,400</b>	<b>8,200</b>	<b>200</b>	<b>120</b>	<b>380</b>	NA	NA	NA
MW-2	7/10/2014	<b>8,800 J</b>	<b>4,800</b>	<b>130</b>	<b>140</b>	<200	NA	NA	NA
MW-2	9/15/2014	<b>11,000</b>	<b>5,600</b>	<b>180</b>	<b>190</b>	<200	<200	<100	<100
MW-2	1/9/2015	<b>7,600</b>	<b>4,200</b>	<b>110</b>	<b>130</b>	<b>98</b>	<b>17</b>	<b>2.2</b>	<0.5
FD-1 <sup>2</sup>	1/9/2015	<b>6,600</b>	<b>3,600</b>	<b>99</b>	<b>110</b>	<b>90</b>	<b>15</b>	<b>2.3</b>	<0.5
MW-2	3/31/2015	<b>10,000</b>	<b>5,900</b>	<b>160</b>	<b>230</b>	<b>150</b>	<100	<50	<0.5
MW-2	10/14/15	<b>6,900 J</b>	<b>3,600 J</b>	<b>130</b>	<b>180</b>	<b>140</b>	<b>7.8</b>	<b>0.74</b>	<0.5
MW-2	05/03/16	<b>4,200</b>	<b>2,500</b>	<b>55</b>	<b>76</b>	<b>44</b>	<20	<10	<10
DUP-05032016	05/03/16	<b>5,100</b>	<b>2,700</b>	<b>57</b>	<b>75</b>	<100	<100	<50	<50
MW-2	12/29/16	<b>170</b>	<b>26</b>	<b>0.59</b>	<b>1.1</b>	<1	<1	<0.5	<0.5
MW-20 <sup>2</sup>	07/11/17	<2500	<b>1,400</b>	<b>35</b>	<b>52</b>	<b>42</b>	<b>4.2</b>	<b>0.65</b>	<0.5
MW-2	07/11/17	<2500	<b>1,500</b>	<b>35</b>	<b>52</b>	<b>42</b>	<b>4.0</b>	<b>0.71</b>	<0.5
MW-3	7/18/2013	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-3	10/23/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-3	7/10/2014	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-3	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
FD-1 <sup>3</sup>	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-3	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-3	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-3	10/14/15	<50 UJ	<0.5 UJ	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-3	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-3	12/29/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-3	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-4	7/18/2013	<b>9,500</b>	<b>980</b>	<b>510</b>	<b>270</b>	<b>2,600</b>	<b>180</b>	<b>0.7</b>	<0.5
MW-40 <sup>4</sup>	7/18/2013	<b>13,000</b>	<b>1,100</b>	<b>930</b>	<b>800</b>	<b>3,500</b>	<b>180</b>	<b>0.6</b>	<0.5
MW-4	10/23/2013	<b>15,000</b>	<b>1,800</b>	<b>480</b>	<b>1,500</b>	<b>3,100</b>	NA	NA	NA
MW-4	7/10/2014	<b>25,000 J</b>	<b>2,500 J</b>	<b>950</b>	<b>1,800 J</b>	<b>6,400</b>	NA	NA	NA
MW-40 <sup>4</sup>	7/10/2014	<b>32,000 J</b>	<b>3,100 J</b>	<b>1,100</b>	<b>2,400 J</b>	<b>6,100</b>	NA	NA	NA
MW-4	9/15/2014	<b>22,000</b>	<b>2,800</b>	<b>470</b>	<b>2,200</b>	<b>3,000</b>	<b>370</b>	<25	<25
MW-4	1/9/2015	<b>21,000</b>	<b>1,900</b>	<b>180</b>	<b>1,800</b>	<b>3,600</b>	<b>290</b>	<b>0.67</b>	<0.5
MW-4	3/31/2015	<b>32,000</b>	<b>3,100</b>	<b>730</b>	<b>2,900</b>	<b>8,100</b>	<b>530</b>	<50	<50
MW-4	10/14/15	<b>14,000 J</b>	<b>2,200 J</b>	<b>170</b>	<b>1,600</b>	<b>1,600</b>	<b>150</b>	<50	<50
MW-4	05/03/16	<b>8,800</b>	<b>720</b>	<b>65</b>	<b>650</b>	<b>1,400</b>	<b>84</b>	<5	<5
MW-4	12/29/16	<b>3,600</b>	<b>360</b>	<b>33</b>	<b>280</b>	<b>560</b>	<b>36</b>	<5	<5
MW-40 <sup>4</sup>	12/29/16	<b>3,800</b>	<b>370</b>	<b>35</b>	<b>290</b>	<b>570</b>	<b>41</b>	<5	<5
MW-4	07/11/17	<b>5,100</b>	<b>1,100</b>	<b>88</b>	<b>920</b>	<b>410</b>	<b>160</b>	<0.5	<0.5
MW-5	7/18/2013	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-5	10/23/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-5	7/10/2014	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
MW-5	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-5	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-5	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-5	10/14/15	<50 UJ	<0.5 UJ	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-5	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-5	12/29/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-5	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<b>2.7</b>	<0.5	<0.5

**Table 3**  
**Petroleum Hydrocarbons and Volatile Organic Compounds**  
**3884 Martin Luther King Jr. Way**  
**Oakland, California**

Well	Date	Analyte							
		TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	1,2-DCA	cis-1,2-DCE
Commercial/Industrial Groundwater ESL		NE	30	100,000	370	38,000	180	90	15,400
LTCP		NE	3000	NE	NE	NE	NE	NE	NE
MW-6	9/15/2014	<b>300</b>	<b>5.6</b>	<0.5	<b>0.6</b>	<b>4.7</b>	<1.0	<0.5	<0.5
MW-6	1/9/2015	<b>160</b>	<b>10</b>	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-6	3/31/2015	<b>2000</b>	<b>150</b>	<b>1.4</b>	<b>48</b>	<b>2.9</b>	<1.0	<0.5	<0.5
MW-6 <sup>5</sup>	3/31/2015	<b>2100</b>	<b>160</b>	<b>1.5</b>	<b>53</b>	<b>3.5</b>	<1.0	<0.5	<0.5
MW-6	10/14/15	<b>1300 J</b>	<b>40 J</b>	<b>0.55</b>	<b>1.1</b>	<b>2.6</b>	<1.0	<0.5	<0.5
MW-6 <sup>5</sup>	10/14/15	<b>1700 J</b>	<b>72 J</b>	<b>0.75</b>	<b>2.7</b>	<b>3.6</b>	<1.0	<0.5	<0.5
MW-6	05/03/16	<b>77</b>	<b>2.6</b>	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-6	12/29/16	<b>59</b>	<b>4.7</b>	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-6	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-7	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-7	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-7	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-7	10/14/15	<50 UJ	<0.5 UJ	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-7	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-7	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-7	12/29/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-7	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-8	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-8	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-8	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-8	10/14/15	<50 UJ	<0.5 UJ	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
MW-8	05/03/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-8	12/29/16	<50	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5
MW-8	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	7/18/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
Trip Blank	10/23/2013	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
Trip Blank	7/10/2014	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA
Trip Blank	9/15/2014	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	1/9/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	3/31/2015	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	10/14/15	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	05/03/16	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	12/29/16	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5
Trip Blank	07/11/17	<50	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5

**Notes:**

Sample concentrations reported in micrograms per liter (µg/L)

Commercial/Industrial Soil Vapor Intrusion Groundwater ESL = Environmental Screening Level in groundwater for commercial/industrial properties (RWQCB ESL Workbook, <sup>2</sup>Shallow Groundwater, Table GW-3 Soil Vapor Intrusion Commercial/Industrial, updated February 2013)

Bold values indicate concentrations detected above the laboratory reporting limit

# Indicates a concentration detected above the LTCP criteria

# Indicates a concentration detected above the Soil Vapor Intrusion Water ESL

< 0.5 Compound not detected at or above the laboratory reporting limit

<sup>1</sup> Field duplicate of MW-1

<sup>2</sup> Field duplicate of MW-2

<sup>3</sup> Field duplicate of MW-3

<sup>4</sup> Field duplicate of MW-4

<sup>5</sup> Field duplicate of MW-6

**Abbreviations:**

TPH = Total Petroleum Hydrocarbons

1,2-DCA = 1,2-Dichloroethane

cis-1,2-DCE = cis-1,2-Dichloroethene

NA Not analyzed

J Value is Estimated

UJ Non-detected, Estimated

*Appendix A*  
*Field Data Sheets*

## WELL GAUGING DATA

Project # 170711-WW1 Date 7/11/17 Client ERM

Site 3884 MLK Way, Oakland, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or <del>TOC</del>	PID Notes
MW-1	0853	2					14.66	19.32		0.0
MW-2	0906	2					14.50	19.90		0.0
MW-3	0901	2					14.92	19.91		0.0
MW-4	1307	2					14.55	18.08		0.0
MW-5	0912	2					15.98	<del>19.80</del> <del>19.06</del>		ROOTS 0.0
MW-6	0852	2					13.96	18.75		0.0
MW-7	0849	2					12.84	18.52		0.0
MW-8	0500	2					<del>12.53</del> <del>12.83</del> 12.82	18.05		0.0

MW-4 GAUGED LATER DUE TO CONCRETE CORING WORK.



LOW-FLOW GROUNDWATER SAMPLING FORM  
3884 MLK Way, Oakland CA

Well ID: MW-1	Start Purge Time: 1023
Sampling Date: 7-11-17	Stop Purge Time: 1050
Field Person: WW LD	Purge Rate (ml/min): 100
Laboratory Analyses: VOCs	Purge Volume (gal) (ml) 2400
Well Diameter (in): 2	Begin Sampling Time: 1050
Well Material: PVC	End Sampling Time: 1050
Depth to Water (ft): 14.66	Sampling Rate (lpm) (ml/min) 100
Depth to Bottom (ft): 19.32	Sample Description: water
Screen Interval (ft): 12-19	
Well Volume (gal): ~	
Pump Type: per	Sample Filtered? <input type="checkbox"/>
Tubing Material: (1/4") PE	If Yes, Filter Type: _____
Pump Intake Depth (ft): 16.83	

Time (min)	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
1026	19.2	882	3.70	6.46	-36.9	4	14.72	100	clear
1029	19.3	885	3.65	6.41	-55.5	5	14.78	100	"
1032	19.4	889	3.61	6.40	-58.4	5	14.89	100	"
1035	19.0	894	5.16	6.40	-46.4	5	14.88	100	"
1038	19.0	898	5.28	6.41	-41.0	5	14.96	100	"
1041	18.8	920	4.69	6.35	-79.9	9	14.94	100	"
1044	19.0	924	4.72	6.34	-83.2	8	14.98	100	"
1047	19.1	925	4.53	6.34	-89.8	9	14.98	100	"

- SIDEWALK



LOW-FLOW GROUNDWATER SAMPLING FORM  
3884 MLK Way, Oakland CA

Well ID: MW-2 Start Purge Time: 1229  
Sampling Date: 7-11-17 Stop Purge Time: 1300  
Field Person: WV LD Purge Rate (ml/min): 100  
Laboratory Analyses: VOCs Purge Volume (gal): (mL)  
Well Diameter (in): 2 Begin Sampling Time: 1255  
Well Material: PVC End Sampling Time: 1300  
Depth to Water (ft): 14.50 Sampling Rate (lpm): (ml/min) 100  
Depth to Bottom (ft): 19.90 Sample Description: DUP → MW-20 @ 1300  
Screen Interval (ft): 13-20  
Well Volume (gal): —  
Pump Type: PERI Sample Filtered?: —  
Tubing Material: 1/4" PE If Yes, Filter Type: —  
Pump Intake Depth (ft): 17.20

Time (min)	Temp (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
1232	19.3	858	0.97	6.76	-197.0	10	14.71	100	Odor
1235	19.5	854	0.99	6.68	-210.1	9	14.75	100	
1238	19.5	859	1.65	6.68	-214	8	14.77	100	
1241	19.7	862	1.35	6.69	-215.4	7	14.78	100	
1244	19.5	863	1.01	6.68	-222.5	7	14.81	100	
1247	19.3	865	0.90	6.67	-223.5	6	14.84	100	
1250	19.4	867	0.85	6.66	-219.9	6	14.83	100	
1253	19.5	866	0.81	6.66	-221.3	5	14.87	100	



**LOW-FLOW GROUNDWATER SAMPLING FORM**  
 3884 MLK Way, Oakland CA

Well ID: MW-3      Start Purge Time: 1208  
 Sampling Date: 7-14-17      Stop Purge Time: 1225  
 Field Person: WVLD      Purge Rate (ml/min): 100  
 Laboratory Analyses: VOCS      Purge Volume (gal): 1200

Well Diameter (in): 2      Begin Sampling Time: 1225  
 Well Material: PVC      End Sampling Time: 1225  
 Depth to Water (ft): 14.92      Sampling Rate (~~lpm~~) ml/min 100  
 Depth to Bottom (ft): 19.91      Sample Description: WATER  
 Screen Interval (ft): 13-20  
 Well Volume (gal):       
 Pump Type: Peri      Sample Filtered?       
 Tubing Material: (1/4") PE      If Yes, Filter Type:       
 Pump Intake Depth (ft): 17.42

Time (min)	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
1211	19.8	919	3.30	6.97	-120.9	5	15.04	100	clear
1214	20.6	920	3.27	6.89	-122.1	4	15.07	100	"
1217	20.9	923	3.14	6.90	-124.1	4	15.10	100	"
1220	20.3	927	3.10	6.87	-130.5	3	15.20	100	"



**LOW-FLOW GROUNDWATER SAMPLING FORM**  
 3884 MLK Way, Oakland CA

Well ID: MW-4 Start Purge Time: 1308  
 Sampling Date: 7-11-17 Stop Purge Time: 1325  
 Field Person: LW LD Purge Rate (ml/min): 100  
 Laboratory Analyses: VOCS Purge Volume (gal): 1500  
 (ml)  
 Well Diameter (in): 2 Begin Sampling Time: 1325  
 Well Material: PVC End Sampling Time: 1325  
 Depth to Water (ft): 14.55 Sampling Rate (lpm): ml/min 100  
 Depth to Bottom (ft): 18.08 Sample Description: WATER  
 Screen Interval (ft): 11-18  
 Well Volume (gal): \_\_\_\_\_  
 Pump Type: PERI Sample Filtered? —  
 Tubing Material: 1/4" PE If Yes, Filter Type: \_\_\_\_\_  
 Pump Intake Depth (ft): 16.03

Time (min)	Temp (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
1311	21.0	1224	1.73	6.55	-105.4	12	14.70	100	odor
1314	21.3	1223	1.63	6.56	-107.5	13	14.79	100	"
1317	21.5	1225	1.17	6.58	-108.3	11	14.83	100	"
1320	21.8	1229	1.11	6.58	-108.9	12	14.83	100	"
1323	21.8	1223	1.06	6.59	-112.8	11	14.88	100	"





LOW-FLOW GROUNDWATER SAMPLING FORM  
3884 MLK Way, Oakland CA

Well ID: MW-5      Start Purge Time: 1103  
Sampling Date: 7-11-17      Stop Purge Time: 1125  
Field Person: LW LD      Purge Rate (ml/min): 100  
Laboratory Analyses: VOCs      Purge Volume (gal): (mL) 1800  
Well Diameter (in): 2      Begin Sampling Time: 1125  
Well Material: PVC      End Sampling Time: 1125  
Depth to Water (ft): 15.98      Sampling Rate (lpm): (ml/min) 100  
Depth to Bottom (ft): 19.06 19.80      Sample Description: water  
Screen Interval (ft): 15-21  
Well Volume (gal): —  
Pump Type: Peri      Sample Filtered? —  
Tubing Material: PE (1/4")      If Yes, Filter Type: —  
Pump Intake Depth (ft): 17.89

Time (min)	Temp (°C)	Specific Conductivity (µmS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
1106	6.80	1207	1.17	6.58	-146.4	226	16.22	100	cloudy
1109	6.84	1221	2.69	6.54	-165.4	218	16.25	100	"
1112	6.85	1229	2.77	6.54	-175.0	191	16.30	100	"
1115	18.2	1233	2.98	6.56	-179.7	187	16.31	100	"
1118	18.5	1230	3.08	6.56	-184.9	175	16.31	100	"
1121	18.8	1232	3.01	6.57	-188.2	169	16.31	100	"

\* ROOTS REMOVED WITH <sup>TELEON</sup> BALLER



LOW-FLOW GROUNDWATER SAMPLING FORM  
3884 MLK Way, Oakland CA

Well ID: MW-6 Start Purge Time: 0949  
Sampling Date: 7-11-17 Stop Purge Time: 1016  
Field Person: WW LD Purge Rate (ml/min): 100  
Laboratory Analyses: VOCs Purge Volume (gal): ~~2000~~ 2100  
ML  
Well Diameter (in): 2 Begin Sampling Time: 1015  
Well Material: PVC End Sampling Time: 1016  
Depth to Water (ft): 13.96 Sampling Rate (lpm): 100 ml/min  
Depth to Bottom (ft): 18.75 Sample Description: Water  
Screen Interval (ft): 11-19  
Well Volume (gal):       
Pump Type: Peri Sample Filtered?       
Tubing Material: PE (1/4") If Yes, Filter Type:       
Pump Intake Depth (ft): 16.36

Time (min)	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
0956	19.3	856	1.07	6.78	-132.9	13	14.10	100	clear
0959	19.4	856	1.21	6.74	-136.7	13	14.15	100	"
1002	19.2	851	2.39	6.73	-140.2	11	14.29	100	"
1005	19.0	850	2.51	6.72	-144.5	12	14.29	100	"
1008	18.9	854	3.18	6.71	-152.4	6	14.29	100	"
1011	19.1	855	3.27	6.70	-155.3	5	14.29	100	"
1014	19.0	859	3.41	6.70	-159.8	5	14.29	100	"

- Sidewalk



**LOW-FLOW GROUNDWATER SAMPLING FORM**  
 3884 MLK Way, Oakland CA

Well ID: <u>MW-7</u>	Start Purge Time: <u>0922</u>
Sampling Date: <u>7-1-17</u>	Stop Purge Time: <u>0940</u>
Field Person: <u>WW LD</u>	Purge Rate (ml/min): <u>150</u>
Laboratory Analyses: <u>VOCS</u>	Purge Volume (gal): <u>2250</u> ml
Well Diameter (in): <u>2</u>	Begin Sampling Time: <u>0940</u>
Well Material: <u>PVC</u>	End Sampling Time: <u>0940</u>
Depth to Water (ft): <u>12.84</u>	Sampling Rate (lpm): <u>150 ml/min</u>
Depth to Bottom (ft): <u>18.52</u>	Sample Description: <u>clear water</u>
Screen Interval (ft): <u>11-19</u>	
Well Volume (gal): <u>—</u>	
Pump Type: <u>Peri</u>	Sample Filtered? <u>—</u>
Tubing Material: <u>PE (1/4")</u>	If Yes, Filter Type: <u>—</u>
Pump Intake Depth (ft): <u>15.68</u>	

Time (min)	Temp (°C)	Specific Conductivity (µmS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
0925	19.3	810	2.12	7.01	-46.4	13	12.91	150	clear
0928	19.2	834	2.27	6.96	-52.4	12	12.94	150	"
0931	19.3	837	2.51	6.92	-47.3	12	13.05	150	"
0934	19.5	835	2.62	6.89	-44.6	12	13.09	150	"
0937	19.9	836	2.58	6.88	-45.3	11	13.18	150	"

— SIDEWALK



LOW-FLOW GROUNDWATER SAMPLING FORM  
3884 MLK Way, Oakland CA

Well ID: MW-8	Start Purge Time: 0812
Sampling Date: 7/11/17	Stop Purge Time: 0830
Field Person: WDW DL	Purge Rate (ml/min): 100
Laboratory Analyses: VOCs	Purge Volume (gal): 1800 ml
Well Diameter (in): 2	Begin Sampling Time: 0830
Well Material: PVC	End Sampling Time: 0830
Depth to Water (ft): <del>12.83</del> 12.53	Sampling Rate (lpm): 100 ml/min
Depth to Bottom (ft): 18.05	Sample Description: clear water
Screen Interval (ft): 11-18	
Well Volume (gal):	
Pump Type: Peri	Sample Filtered? NO
Tubing Material: PE (1/4")	If Yes, Filter Type: -
Pump Intake Depth (ft): 15.83	TB-1 @ 0715

Time (min)	Temp (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/l)	pH	ORP (mV)	Turbidity (NTUs)	Depth to Water (ft)	Flow rate (ml/min)	Notes (color, odor, etc.)
0812	18.7	838	1.45	6.81	-70.8	28	12.53	100	Clear
0815	18.6	840	1.82	6.74	-78.3	20	12.54	100	↓
0818	18.6	838	3.41	6.70	-76.7	23	12.62	100	
0821	18.5	838	4.67	6.67	-82.0	23	12.63	100	
0824	18.5	827	4.70	6.67	-82.1	22	12.66	100	
0827	18.6	823	4.62	6.68	-84.1	21	12.70	100	

\* PUSH CART USED FOR SAMPLE EQUIP.  
-SIDEWALK.

WELLHEAD INSPECTION CHECKLIST

Date 7-11-17 Client ERM

Site Address 3884 MLK Hwy, Oakland, CA

Job Number 170711-WWJ Technician JW

Table with 9 columns: Well ID, Well Inspected - No Corrective Action Required, Water Bailed From Wellbox, Wellbox Components Cleaned, Cap Replaced, Debris Removed From Wellbox, Lock Replaced, Other Action Taken (explain below), Well Not Inspected (explain below). Rows include MW-1 to MW-8 with handwritten 'X' marks in various columns.

NOTES: MW-1: -1/2 tabs broken, MW-4, MW-5: -1/2 BOLTS (9/16")



*Appendix B*  
*Analytical Results*  
*and QA/QC Review*

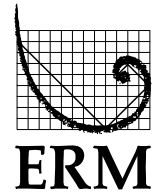
# Memorandum

Environmental  
Resources  
Management

**To:** Kevin Almestad  
**From:** Rachel James  
**Date:** July 28, 2017  
**Subject:** Data Review of Grove St. Wash Rack Groundwater  
Monitoring Data, July 2017  
**Project Number:** 0307273  
**Data Package:** Test America Data Package 720-80612-1

---

1001 SW 5<sup>th</sup> Avenue,  
Suite 1010  
Portland, OR 97204  
(503) 488-5282  
(503) 488-5124 (fax)



The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017.

## ***HOLDING TIME AND PRESERVATION EVALUATION***

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature and preservation requirements. None of the data were qualified based on holding time or preservation exceedances.

## ***BLANK EVALUATION***

The method and trip blank sample results were nondetected for each of the target analytes. No data were qualified on the basis of the blank evaluation. The blank results indicate that no contaminants were introduced to the samples during processing or analysis in the laboratory or during shipment, handling, and storage.

## ***BLANK SPIKE EVALUATION***

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and RPDs were within the laboratory's limits of acceptance. The LCS recoveries and RPDs indicate acceptable laboratory accuracy and precision.



***MATRIX SPIKE EVALUATION***

No matrix spike (MS) recoveries were presented in the laboratory report.

***SURROGATE SPIKE EVALUATION***

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

***FIELD DUPLICATE EVALUATION***

No field duplicates were submitted.

***OVERALL ASSESSMENT***

No results were qualified or rejected. All of the data can be used for decision-making purposes. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Pleasanton  
1220 Quarry Lane  
Pleasanton, CA 94566  
Tel: (925)484-1919

TestAmerica Job ID: 720-80612-1  
Client Project/Site: Grove St Wash Rack

For:  
ERM-West  
1277 Treat Blvd., Suite 500  
Walnut Creek, California 94597

Attn: Giorgio Molinaro



Authorized for release by:  
7/24/2017 4:38:00 PM

Afsaneh Salimpour, Senior Project Manager  
(925)484-1919  
[afsaneh.salimpour@testamericainc.com](mailto:afsaneh.salimpour@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Definitions/Glossary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

### Glossary

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

# Case Narrative

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

---

**Job ID: 720-80612-1**

---

**Laboratory: TestAmerica Pleasanton**

---

**Narrative**

**Job Narrative**  
**720-80612-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 7/12/2017 11:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

**GC/MS VOA**

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

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# Detection Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Client Sample ID: MW-1

Lab Sample ID: 720-80612-1

No Detections.

## Client Sample ID: MW-2

Lab Sample ID: 720-80612-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1500		25		ug/L	50		8260B/CA_LUFT MS	Total/NA
1,2-Dichloroethane	0.71		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	52		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	4.0		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Toluene	35		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	42		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA

## Client Sample ID: MW-3

Lab Sample ID: 720-80612-3

No Detections.

## Client Sample ID: MW-4

Lab Sample ID: 720-80612-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1100		25		ug/L	50		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	920		25		ug/L	50		8260B/CA_LUFT MS	Total/NA
Naphthalene	160		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Toluene	88		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	410		50		ug/L	50		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	5100		2500		ug/L	50		8260B/CA_LUFT MS	Total/NA

## Client Sample ID: MW-5

Lab Sample ID: 720-80612-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	2.7		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA

## Client Sample ID: MW-6

Lab Sample ID: 720-80612-6

No Detections.

## Client Sample ID: MW-7

Lab Sample ID: 720-80612-7

No Detections.

## Client Sample ID: MW-8

Lab Sample ID: 720-80612-8

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

# Detection Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Client Sample ID: MW-20

## Lab Sample ID: 720-80612-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1400		25		ug/L	50		8260B/CA_LUFT MS	Total/NA
1,2-Dichloroethane	0.65		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	52		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	4.2		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Toluene	35		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	42		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA

## Client Sample ID: TB-1

## Lab Sample ID: 720-80612-10

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-1**  
**Date Collected: 07/11/17 10:50**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-1**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 01:05	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 01:05	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 01:05	1
Ethylbenzene	ND		0.50		ug/L			07/20/17 01:05	1
Naphthalene	ND		1.0		ug/L			07/20/17 01:05	1
Toluene	ND		0.50		ug/L			07/20/17 01:05	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 01:05	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 01:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	94		67 - 130					07/20/17 01:05	1
1,2-Dichloroethane-d4 (Surr)	99		72 - 130					07/20/17 01:05	1
Toluene-d8 (Surr)	98		70 - 130					07/20/17 01:05	1





# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-2**  
**Date Collected: 07/11/17 12:55**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-2**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>1500</b>		25		ug/L			07/22/17 14:52	50
<b>1,2-Dichloroethane</b>	<b>0.71</b>		0.50		ug/L			07/20/17 04:24	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 04:24	1
<b>Ethylbenzene</b>	<b>52</b>		0.50		ug/L			07/20/17 04:24	1
<b>Naphthalene</b>	<b>4.0</b>		1.0		ug/L			07/20/17 04:24	1
<b>Toluene</b>	<b>35</b>		0.50		ug/L			07/20/17 04:24	1
<b>Xylenes, Total</b>	<b>42</b>		1.0		ug/L			07/20/17 04:24	1
Gasoline Range Organics (GRO) -C5-C12	ND		2500		ug/L			07/22/17 14:52	50
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	103		67 - 130					07/20/17 04:24	1
4-Bromofluorobenzene	89		67 - 130					07/22/17 14:52	50
1,2-Dichloroethane-d4 (Surr)	97		72 - 130					07/20/17 04:24	1
1,2-Dichloroethane-d4 (Surr)	83		72 - 130					07/22/17 14:52	50
Toluene-d8 (Surr)	102		70 - 130					07/20/17 04:24	1
Toluene-d8 (Surr)	94		70 - 130					07/22/17 14:52	50

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-3**  
**Date Collected: 07/11/17 12:25**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-3**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 01:33	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 01:33	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 01:33	1
Ethylbenzene	ND		0.50		ug/L			07/20/17 01:33	1
Naphthalene	ND		1.0		ug/L			07/20/17 01:33	1
Toluene	ND		0.50		ug/L			07/20/17 01:33	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 01:33	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 01:33	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	93		67 - 130					07/20/17 01:33	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 130					07/20/17 01:33	1
Toluene-d8 (Surr)	99		70 - 130					07/20/17 01:33	1

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-4**  
**Date Collected: 07/11/17 13:25**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-4**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>1100</b>		25		ug/L			07/22/17 15:20	50
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 02:02	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 02:02	1
<b>Ethylbenzene</b>	<b>920</b>		25		ug/L			07/22/17 15:20	50
<b>Naphthalene</b>	<b>160</b>		1.0		ug/L			07/20/17 02:02	1
<b>Toluene</b>	<b>88</b>		0.50		ug/L			07/20/17 02:02	1
<b>Xylenes, Total</b>	<b>410</b>		50		ug/L			07/22/17 15:20	50
<b>Gasoline Range Organics (GRO) -C5-C12</b>	<b>5100</b>		2500		ug/L			07/22/17 15:20	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	104		67 - 130					07/20/17 02:02	1
4-Bromofluorobenzene	100		67 - 130					07/22/17 15:20	50
1,2-Dichloroethane-d4 (Surr)	95		72 - 130					07/20/17 02:02	1
1,2-Dichloroethane-d4 (Surr)	82		72 - 130					07/22/17 15:20	50
Toluene-d8 (Surr)	101		70 - 130					07/20/17 02:02	1
Toluene-d8 (Surr)	97		70 - 130					07/22/17 15:20	50

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-5**  
**Date Collected: 07/11/17 11:25**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-5**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 02:30	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 02:30	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 02:30	1
Ethylbenzene	ND		0.50		ug/L			07/22/17 14:23	1
<b>Naphthalene</b>	<b>2.7</b>		1.0		ug/L			07/20/17 02:30	1
Toluene	ND		0.50		ug/L			07/20/17 02:30	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 02:30	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 02:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		67 - 130					07/20/17 02:30	1
4-Bromofluorobenzene	103		67 - 130					07/22/17 14:23	1
1,2-Dichloroethane-d4 (Surr)	95		72 - 130					07/20/17 02:30	1
1,2-Dichloroethane-d4 (Surr)	98		72 - 130					07/22/17 14:23	1
Toluene-d8 (Surr)	99		70 - 130					07/20/17 02:30	1
Toluene-d8 (Surr)	99		70 - 130					07/22/17 14:23	1

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-6**  
**Date Collected: 07/11/17 10:15**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-6**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 02:59	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 02:59	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 02:59	1
Ethylbenzene	ND		0.50		ug/L			07/20/17 02:59	1
Naphthalene	ND		1.0		ug/L			07/20/17 02:59	1
Toluene	ND		0.50		ug/L			07/20/17 02:59	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 02:59	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 02:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	98		67 - 130					07/20/17 02:59	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 130					07/20/17 02:59	1
Toluene-d8 (Surr)	100		70 - 130					07/20/17 02:59	1

# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-7**  
**Date Collected: 07/11/17 09:40**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-7**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 03:27	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 03:27	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 03:27	1
Ethylbenzene	ND		0.50		ug/L			07/20/17 03:27	1
Naphthalene	ND		1.0		ug/L			07/20/17 03:27	1
Toluene	ND		0.50		ug/L			07/20/17 03:27	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 03:27	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		67 - 130					07/20/17 03:27	1
1,2-Dichloroethane-d4 (Surr)	92		72 - 130					07/20/17 03:27	1
Toluene-d8 (Surr)	98		70 - 130					07/20/17 03:27	1



# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-8**  
**Date Collected: 07/11/17 08:30**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-8**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/20/17 03:55	1
1,2-Dichloroethane	ND		0.50		ug/L			07/20/17 03:55	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 03:55	1
Ethylbenzene	ND		0.50		ug/L			07/20/17 03:55	1
Naphthalene	ND		1.0		ug/L			07/20/17 03:55	1
Toluene	ND		0.50		ug/L			07/20/17 03:55	1
Xylenes, Total	ND		1.0		ug/L			07/20/17 03:55	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/20/17 03:55	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	96		67 - 130					07/20/17 03:55	1
1,2-Dichloroethane-d4 (Surr)	97		72 - 130					07/20/17 03:55	1
Toluene-d8 (Surr)	98		70 - 130					07/20/17 03:55	1



# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: MW-20**

**Lab Sample ID: 720-80612-9**

**Date Collected: 07/11/17 13:00**

**Matrix: Water**

**Date Received: 07/12/17 11:40**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>1400</b>		25		ug/L			07/22/17 15:49	50
<b>1,2-Dichloroethane</b>	<b>0.65</b>		0.50		ug/L			07/20/17 04:52	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/20/17 04:52	1
<b>Ethylbenzene</b>	<b>52</b>		0.50		ug/L			07/20/17 04:52	1
<b>Naphthalene</b>	<b>4.2</b>		1.0		ug/L			07/20/17 04:52	1
<b>Toluene</b>	<b>35</b>		0.50		ug/L			07/20/17 04:52	1
<b>Xylenes, Total</b>	<b>42</b>		1.0		ug/L			07/20/17 04:52	1
Gasoline Range Organics (GRO) -C5-C12	ND		2500		ug/L			07/22/17 15:49	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	102		67 - 130		07/20/17 04:52	1
4-Bromofluorobenzene	97		67 - 130		07/22/17 15:49	50
1,2-Dichloroethane-d4 (Surr)	96		72 - 130		07/20/17 04:52	1
1,2-Dichloroethane-d4 (Surr)	88		72 - 130		07/22/17 15:49	50
Toluene-d8 (Surr)	101		70 - 130		07/20/17 04:52	1
Toluene-d8 (Surr)	86		70 - 130		07/22/17 15:49	50



# Client Sample Results

Client: ERM-West  
 Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Client Sample ID: TB-1**  
**Date Collected: 07/11/17 07:15**  
**Date Received: 07/12/17 11:40**

**Lab Sample ID: 720-80612-10**  
**Matrix: Water**

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/19/17 12:35	1
1,2-Dichloroethane	ND		0.50		ug/L			07/19/17 12:35	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/19/17 12:35	1
Ethylbenzene	ND		0.50		ug/L			07/19/17 12:35	1
Naphthalene	ND		1.0		ug/L			07/19/17 12:35	1
Toluene	ND		0.50		ug/L			07/19/17 12:35	1
Xylenes, Total	ND		1.0		ug/L			07/19/17 12:35	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/19/17 12:35	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene	97		67 - 130					07/19/17 12:35	1
1,2-Dichloroethane-d4 (Surr)	95		72 - 130					07/19/17 12:35	1
Toluene-d8 (Surr)	99		70 - 130					07/19/17 12:35	1

# Surrogate Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

**Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS**

**Matrix: Water**

**Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (67-130)	12DCE (72-130)	TOL (70-130)
720-80612-1	MW-1	94	99	98
720-80612-2	MW-2	103	97	102
720-80612-2	MW-2	89	83	94
720-80612-3	MW-3	93	97	99
720-80612-4	MW-4	104	95	101
720-80612-4	MW-4	100	82	97
720-80612-5	MW-5	98	95	99
720-80612-5	MW-5	103	98	99
720-80612-6	MW-6	98	97	100
720-80612-7	MW-7	95	92	98
720-80612-8	MW-8	96	97	98
720-80612-9	MW-20	102	96	101
720-80612-9	MW-20	97	88	86
720-80612-10	TB-1	97	95	99
LCS 720-226819/5	Lab Control Sample	100	100	101
LCS 720-226819/7	Lab Control Sample	100	98	100
LCS 720-226870/5	Lab Control Sample	97	97	101
LCS 720-226870/7	Lab Control Sample	102	95	101
LCS 720-227034/5	Lab Control Sample	104	92	97
LCS 720-227034/7	Lab Control Sample	99	89	95
LCSD 720-226819/6	Lab Control Sample Dup	103	97	101
LCSD 720-226819/8	Lab Control Sample Dup	101	99	102
LCSD 720-226870/6	Lab Control Sample Dup	103	99	103
LCSD 720-226870/8	Lab Control Sample Dup	100	96	102
LCSD 720-227034/6	Lab Control Sample Dup	96	81	98
LCSD 720-227034/8	Lab Control Sample Dup	97	89	92
MB 720-226819/4	Method Blank	100	99	100
MB 720-226870/4	Method Blank	95	96	100
MB 720-227034/4	Method Blank	94	93	94

### Surrogate Legend

BFB = 4-Bromofluorobenzene  
12DCE = 1,2-Dichloroethane-d4 (Surr)  
TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS

**Lab Sample ID: MB 720-226819/4**

**Matrix: Water**

**Analysis Batch: 226819**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/19/17 10:13	1
1,2-Dichloroethane	ND		0.50		ug/L			07/19/17 10:13	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/19/17 10:13	1
Ethylbenzene	ND		0.50		ug/L			07/19/17 10:13	1
Naphthalene	ND		1.0		ug/L			07/19/17 10:13	1
Toluene	ND		0.50		ug/L			07/19/17 10:13	1
Xylenes, Total	ND		1.0		ug/L			07/19/17 10:13	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/19/17 10:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		67 - 130		07/19/17 10:13	1
1,2-Dichloroethane-d4 (Surr)	99		72 - 130		07/19/17 10:13	1
Toluene-d8 (Surr)	100		70 - 130		07/19/17 10:13	1

**Lab Sample ID: LCS 720-226819/5**

**Matrix: Water**

**Analysis Batch: 226819**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	27.5		ug/L		110	79 - 130
1,2-Dichloroethane	25.0	26.7		ug/L		107	61 - 132
cis-1,2-Dichloroethene	25.0	26.3		ug/L		105	70 - 130
Ethylbenzene	25.0	27.7		ug/L		111	80 - 120
Naphthalene	25.0	26.9		ug/L		108	50 - 130
Toluene	25.0	27.2		ug/L		109	78 - 120
m-Xylene & p-Xylene	25.0	27.5		ug/L		110	70 - 142
o-Xylene	25.0	27.5		ug/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	100		72 - 130
Toluene-d8 (Surr)	101		70 - 130

**Lab Sample ID: LCS 720-226819/7**

**Matrix: Water**

**Analysis Batch: 226819**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	480		ug/L		96	71 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	98		72 - 130
Toluene-d8 (Surr)	100		70 - 130

TestAmerica Pleasanton

# QC Sample Results

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

**Lab Sample ID: LCSD 720-226819/6**

**Matrix: Water**

**Analysis Batch: 226819**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	25.0	26.8		ug/L		107	79 - 130	3	20
1,2-Dichloroethane	25.0	25.5		ug/L		102	61 - 132	5	20
cis-1,2-Dichloroethene	25.0	25.5		ug/L		102	70 - 130	3	20
Ethylbenzene	25.0	27.2		ug/L		109	80 - 120	1	20
Naphthalene	25.0	27.4		ug/L		110	50 - 130	2	20
Toluene	25.0	27.2		ug/L		109	78 - 120	0	20
m-Xylene & p-Xylene	25.0	27.0		ug/L		108	70 - 142	2	20
o-Xylene	25.0	27.2		ug/L		109	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	103		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		72 - 130
Toluene-d8 (Surr)	101		70 - 130

**Lab Sample ID: LCSD 720-226819/8**

**Matrix: Water**

**Analysis Batch: 226819**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12	500	468		ug/L		94	71 - 125	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	101		67 - 130
1,2-Dichloroethane-d4 (Surr)	99		72 - 130
Toluene-d8 (Surr)	102		70 - 130

**Lab Sample ID: MB 720-226870/4**

**Matrix: Water**

**Analysis Batch: 226870**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/19/17 19:23	1
1,2-Dichloroethane	ND		0.50		ug/L			07/19/17 19:23	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/19/17 19:23	1
Ethylbenzene	ND		0.50		ug/L			07/19/17 19:23	1
Naphthalene	ND		1.0		ug/L			07/19/17 19:23	1
Toluene	ND		0.50		ug/L			07/19/17 19:23	1
Xylenes, Total	ND		1.0		ug/L			07/19/17 19:23	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/19/17 19:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		67 - 130		07/19/17 19:23	1
1,2-Dichloroethane-d4 (Surr)	96		72 - 130		07/19/17 19:23	1
Toluene-d8 (Surr)	100		70 - 130		07/19/17 19:23	1

TestAmerica Pleasanton

# QC Sample Results

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

**Lab Sample ID: LCS 720-226870/5**

**Matrix: Water**

**Analysis Batch: 226870**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	28.4		ug/L		114	79 - 130
1,2-Dichloroethane	25.0	27.0		ug/L		108	61 - 132
cis-1,2-Dichloroethene	25.0	27.3		ug/L		109	70 - 130
Ethylbenzene	25.0	27.5		ug/L		110	80 - 120
Naphthalene	25.0	27.7		ug/L		111	50 - 130
Toluene	25.0	27.6		ug/L		110	78 - 120
m-Xylene & p-Xylene	25.0	27.4		ug/L		110	70 - 142
o-Xylene	25.0	27.4		ug/L		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	97		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		72 - 130
Toluene-d8 (Surr)	101		70 - 130

**Lab Sample ID: LCS 720-226870/7**

**Matrix: Water**

**Analysis Batch: 226870**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	471		ug/L		94	71 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	102		67 - 130
1,2-Dichloroethane-d4 (Surr)	95		72 - 130
Toluene-d8 (Surr)	101		70 - 130

**Lab Sample ID: LCSD 720-226870/6**

**Matrix: Water**

**Analysis Batch: 226870**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	25.0	28.9		ug/L		116	79 - 130	2	20
1,2-Dichloroethane	25.0	27.7		ug/L		111	61 - 132	3	20
cis-1,2-Dichloroethene	25.0	27.3		ug/L		109	70 - 130	0	20
Ethylbenzene	25.0	28.8		ug/L		115	80 - 120	5	20
Naphthalene	25.0	30.2		ug/L		121	50 - 130	9	20
Toluene	25.0	28.8		ug/L		115	78 - 120	4	20
m-Xylene & p-Xylene	25.0	28.6		ug/L		114	70 - 142	4	20
o-Xylene	25.0	28.6		ug/L		115	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	103		67 - 130
1,2-Dichloroethane-d4 (Surr)	99		72 - 130
Toluene-d8 (Surr)	103		70 - 130

TestAmerica Pleasanton

# QC Sample Results

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

**Lab Sample ID: LCSD 720-226870/8**

**Matrix: Water**

**Analysis Batch: 226870**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12	500	471		ug/L		94	71 - 125	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	96		72 - 130
Toluene-d8 (Surr)	102		70 - 130

**Lab Sample ID: MB 720-227034/4**

**Matrix: Water**

**Analysis Batch: 227034**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			07/22/17 11:32	1
1,2-Dichloroethane	ND		0.50		ug/L			07/22/17 11:32	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			07/22/17 11:32	1
Ethylbenzene	ND		0.50		ug/L			07/22/17 11:32	1
Naphthalene	ND		1.0		ug/L			07/22/17 11:32	1
Toluene	ND		0.50		ug/L			07/22/17 11:32	1
Xylenes, Total	ND		1.0		ug/L			07/22/17 11:32	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/22/17 11:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		67 - 130		07/22/17 11:32	1
1,2-Dichloroethane-d4 (Surr)	93		72 - 130		07/22/17 11:32	1
Toluene-d8 (Surr)	94		70 - 130		07/22/17 11:32	1

**Lab Sample ID: LCS 720-227034/5**

**Matrix: Water**

**Analysis Batch: 227034**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	27.4		ug/L		110	79 - 130
1,2-Dichloroethane	25.0	24.8		ug/L		99	61 - 132
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	70 - 130
Ethylbenzene	25.0	28.1		ug/L		112	80 - 120
Naphthalene	25.0	25.7		ug/L		103	50 - 130
Toluene	25.0	27.8		ug/L		111	78 - 120
m-Xylene & p-Xylene	25.0	27.8		ug/L		111	70 - 142
o-Xylene	25.0	28.5		ug/L		114	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	104		67 - 130
1,2-Dichloroethane-d4 (Surr)	92		72 - 130
Toluene-d8 (Surr)	97		70 - 130

TestAmerica Pleasanton

# QC Sample Results

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

**Lab Sample ID: LCS 720-227034/7**

**Matrix: Water**

**Analysis Batch: 227034**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	465		ug/L		93	71 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	89		72 - 130
Toluene-d8 (Surr)	95		70 - 130

**Lab Sample ID: LCSD 720-227034/6**

**Matrix: Water**

**Analysis Batch: 227034**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	25.0	24.7		ug/L		99	79 - 130	10	20
1,2-Dichloroethane	25.0	21.7		ug/L		87	61 - 132	13	20
cis-1,2-Dichloroethene	25.0	22.6		ug/L		90	70 - 130	11	20
Ethylbenzene	25.0	27.3		ug/L		109	80 - 120	3	20
Naphthalene	25.0	26.1		ug/L		104	50 - 130	2	20
Toluene	25.0	28.9		ug/L		116	78 - 120	4	20
m-Xylene & p-Xylene	25.0	26.5		ug/L		106	70 - 142	5	20
o-Xylene	25.0	26.3		ug/L		105	70 - 130	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	81		72 - 130
Toluene-d8 (Surr)	98		70 - 130

**Lab Sample ID: LCSD 720-227034/8**

**Matrix: Water**

**Analysis Batch: 227034**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12	500	427		ug/L		85	71 - 125	8	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	97		67 - 130
1,2-Dichloroethane-d4 (Surr)	89		72 - 130
Toluene-d8 (Surr)	92		70 - 130

# QC Association Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## GC/MS VOA

### Analysis Batch: 226819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-80612-10	TB-1	Total/NA	Water	8260B/CA_LUFT	
MB 720-226819/4	Method Blank	Total/NA	Water	MS	
LCS 720-226819/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
LCS 720-226819/7	Lab Control Sample	Total/NA	Water	MS	
LCSD 720-226819/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
LCSD 720-226819/8	Lab Control Sample Dup	Total/NA	Water	MS	

### Analysis Batch: 226870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-80612-1	MW-1	Total/NA	Water	8260B/CA_LUFT	
720-80612-2	MW-2	Total/NA	Water	MS	
720-80612-3	MW-3	Total/NA	Water	8260B/CA_LUFT	
720-80612-4	MW-4	Total/NA	Water	MS	
720-80612-5	MW-5	Total/NA	Water	8260B/CA_LUFT	
720-80612-6	MW-6	Total/NA	Water	MS	
720-80612-7	MW-7	Total/NA	Water	8260B/CA_LUFT	
720-80612-8	MW-8	Total/NA	Water	MS	
720-80612-9	MW-20	Total/NA	Water	8260B/CA_LUFT	
MB 720-226870/4	Method Blank	Total/NA	Water	MS	
LCS 720-226870/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
LCS 720-226870/7	Lab Control Sample	Total/NA	Water	MS	
LCSD 720-226870/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
LCSD 720-226870/8	Lab Control Sample Dup	Total/NA	Water	MS	

### Analysis Batch: 227034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-80612-2	MW-2	Total/NA	Water	8260B/CA_LUFT	
720-80612-4	MW-4	Total/NA	Water	MS	
720-80612-5	MW-5	Total/NA	Water	8260B/CA_LUFT	
720-80612-9	MW-20	Total/NA	Water	MS	
MB 720-227034/4	Method Blank	Total/NA	Water	8260B/CA_LUFT	

TestAmerica Pleasanton



# QC Association Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## GC/MS VOA (Continued)

### Analysis Batch: 227034 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-227034/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-227034/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-227034/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-227034/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	

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# Lab Chronicle

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Client Sample ID: MW-1

Lab Sample ID: 720-80612-1

Date Collected: 07/11/17 10:50

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 01:05	BAJ	TAL PLS

## Client Sample ID: MW-2

Lab Sample ID: 720-80612-2

Date Collected: 07/11/17 12:55

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 04:24	BAJ	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		50	227034	07/22/17 14:52	AP1	TAL PLS

## Client Sample ID: MW-3

Lab Sample ID: 720-80612-3

Date Collected: 07/11/17 12:25

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 01:33	BAJ	TAL PLS

## Client Sample ID: MW-4

Lab Sample ID: 720-80612-4

Date Collected: 07/11/17 13:25

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 02:02	BAJ	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		50	227034	07/22/17 15:20	AP1	TAL PLS

## Client Sample ID: MW-5

Lab Sample ID: 720-80612-5

Date Collected: 07/11/17 11:25

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 02:30	BAJ	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	227034	07/22/17 14:23	AP1	TAL PLS

## Client Sample ID: MW-6

Lab Sample ID: 720-80612-6

Date Collected: 07/11/17 10:15

Matrix: Water

Date Received: 07/12/17 11:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 02:59	BAJ	TAL PLS

TestAmerica Pleasanton

# Lab Chronicle

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Client Sample ID: MW-7

Date Collected: 07/11/17 09:40

Date Received: 07/12/17 11:40

## Lab Sample ID: 720-80612-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 03:27	BAJ	TAL PLS

## Client Sample ID: MW-8

Date Collected: 07/11/17 08:30

Date Received: 07/12/17 11:40

## Lab Sample ID: 720-80612-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 03:55	BAJ	TAL PLS

## Client Sample ID: MW-20

Date Collected: 07/11/17 13:00

Date Received: 07/12/17 11:40

## Lab Sample ID: 720-80612-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226870	07/20/17 04:52	BAJ	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		50	227034	07/22/17 15:49	AP1	TAL PLS

## Client Sample ID: TB-1

Date Collected: 07/11/17 07:15

Date Received: 07/12/17 11:40

## Lab Sample ID: 720-80612-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	226819	07/19/17 12:35	BAJ	TAL PLS

### Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

# Accreditation/Certification Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

## Laboratory: TestAmerica Pleasanton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2496	01-31-18

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# Method Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTM S	8260B / CA LUFT MS	SW846	TAL PLS

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

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# Sample Summary

Client: ERM-West  
Project/Site: Grove St Wash Rack

TestAmerica Job ID: 720-80612-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-80612-1	MW-1	Water	07/11/17 10:50	07/12/17 11:40
720-80612-2	MW-2	Water	07/11/17 12:55	07/12/17 11:40
720-80612-3	MW-3	Water	07/11/17 12:25	07/12/17 11:40
720-80612-4	MW-4	Water	07/11/17 13:25	07/12/17 11:40
720-80612-5	MW-5	Water	07/11/17 11:25	07/12/17 11:40
720-80612-6	MW-6	Water	07/11/17 10:15	07/12/17 11:40
720-80612-7	MW-7	Water	07/11/17 09:40	07/12/17 11:40
720-80612-8	MW-8	Water	07/11/17 08:30	07/12/17 11:40
720-80612-9	MW-20	Water	07/11/17 13:00	07/12/17 11:40
720-80612-10	TB-1	Water	07/11/17 07:15	07/12/17 11:40





## Login Sample Receipt Checklist

Client: ERM-West

Job Number: 720-80612-1

**Login Number: 80612**

**List Source: TestAmerica Pleasanton**

**List Number: 1**

**Creator: Arauz, Dennis**

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

