



January 31, 2012

Roya C. Kambin  
Project Manager  
Marketing Business Unit

Chevron Environmental  
Management Company  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
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Ms. Barbara Jakub  
Alameda County Health Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**RE: Second Semi-Annual 2011 Monitoring Report**  
Former Unocal Service Station 0746  
3943 Broadway Avenue  
Oakland, California 94611  
Fuel Leak Case No.: RO000203

**RECEIVED**

**7:39 am, Mar 27, 2012**

Alameda County  
Environmental Health

Dear Ms. Jakub,

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact me at (925) 790-6270.

Sincerely,

Roya Kambin  
Union Oil of California – Project Manager

Attachment  
Second Semi-Annual 2011 Monitoring Report

Ms. Barbara Jakub  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502-6577

Subject:  
Second Semi-Annual 2011 Monitoring Report Submittal

ENVIRONMENT

Dear Ms. Jakub:

On behalf of Chevron Environmental Management Company, for itself and as Attorney-in-Fact for Union Oil Company of California (hereinafter "EMC"), ARCADIS is submitting the enclosed Semi-Annual Groundwater Monitoring Report for the following facility:

Date:  
January 31, 2012

Contact:  
Katherine Brandt

Phone:  
510.596.9675

Email:  
Katherine.Brandt@  
arcadis-us.com

<u>Facility No.</u>	<u>Case No.</u>	<u>Location</u>
0746	RO0000203	3943 Broadway Avenue Oakland, California 94611

If you have any questions, please contact Katherine Brandt at 510.596.9675.  
Sincerely,

Our ref:  
B0047338.0001

ARCADIS



Katherine Brandt  
Certified Project Manager



David W. Lay, P.G., C.P.G.  
Principal Geologist



Copies:

Ms. Roya Kambin, EMC  
Ms. Cherie McCaulou, CRWQCB – San Francisco Bay Region, 1515 Clay Street, Suite  
1400, Oakland, California 94612 (CD)

**UNION OIL OF CALIFORNIA  
SEMI-ANNUALLY MONITORING REPORT  
FOURTH QUARTER 2011  
January 31, 2012**

Facility No.: 0746 Address: 3943 Broadway Avenue, Oakland, California 94611

Consulting Company/Contact Person/Phone No.: ARCADIS / Katherine Brandt / 510.596.9675

Primary Agency/Contact Person/Regulatory ID No.: Alameda County Department of Environmental Health / Ms. Barbara Jakub / Case No. RO0000203

**WORK PERFORMED DURING THIS REPORTING PERIOD (Fourth Quarter – 2011) :**

- TRC Solutions (TRC) conducted groundwater monitoring and sampling on December 9, 2011. Field data sheets and general procedures are included as **Attachment A**. Eleven (11) groundwater monitoring wells were gauged this monitoring event (MW-1 through MW-7, MW-10, MW-11, MW-12, and RW-1). Ten (10) of those wells were sampled during this monitoring event (MW-1 through MW-4, MW-6, MW-7, MW-10, MW-11, MW-12, and RW-1). Well MW-5 was not sampled due to the presence of liquid-phase hydrocarbons (LPH) in the well

All groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g; C<sub>6</sub>-C<sub>12</sub>) by Luft GC/MS; and benzene, toluene, ethylbenzene, and total xylenes (BTEX, collectively), methyl tertiary butyl ether [MTBE], 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), and ethanol by United States Environmental Protection Agency (EPA) Method 8260B.

Additionally, the samples collected from groundwater monitoring wells MW-1, MW-4, MW-11, and MW-12 were analyzed for total alkalinity as CaCO<sub>3</sub> by EPA Method 310.1; nitrate as NO<sub>3</sub> and sulfate by EPA Method 300.0; total sulfide by EPA Method 376.2, and total iron by EPA Method 6010B.

The site location map, the site plan, and the groundwater contour map are presented on **Figures 1** through **3**. Concentration maps for TPH-g, benzene, and MTBE are on **Figures 4** through **6**. Current Groundwater Gauging and Analytical Results are summarized in **Table 1**, Current Additional Groundwater Analytical Results are summarized in **Table 1a**, LPH Recovery Data are summarized in **Table 2**, and Historical Groundwater Results from TRC are included as **Attachment B**. A copy of the laboratory analytical report and chain-of-custody documentation is included as **Attachment C**.

**WORK PROPOSED FOR THE NEXT REPORTING PERIOD (Second Quarter – 2012):**

- Perform groundwater monitoring and related reporting during second quarter 2012.

Current Phase of Project:	<u>Groundwater Monitoring</u>
Site Use:	<u>Active gasoline retail station</u>
Frequency of Sampling:	<u>Groundwater – Semi-Annually</u>
Frequency of Monitoring:	<u>Groundwater – Semi-Annually</u>
LPH Present On-Site:	<u>0.21feet (MW-5)</u>
Cumulative LPH Recovered to Date:	<u>3.919 gallons</u>
LPH Recovered This Quarter:	<u>0.210 gallons</u>
Bulk Soil Removed to Date:	<u>350 cubic yards during UST removal activities (1989)</u>
Bulk Soil Removed this Quarter:	<u>None</u>
Water Wells or Surface Waters within a 2,000' Radius and Their Respective Directions:	<u>Two irrigation wells located 1,330 feet east and 1,450 feet north of the site; the only surface water body (Glen Echo Creek) was located 1,630 feet southeast of the site</u>
Groundwater Use Designation:	<u>Irrigation</u>
Current Remediation Techniques:	<u>None</u>
Permits for Discharge (No.):	<u>None</u>
Approximate Depth to Groundwater:	<u>6.75 (MW-6) – 14.41 (MW-10) feet below top of casing</u> Measured <input checked="" type="checkbox"/> Estimated

**UNION OIL OF CALIFORNIA  
SEMI-ANNUALLY MONITORING REPORT  
FOURTH QUARTER 2011  
January 31, 2012**

Facility No.: 0746 Address: 3943 Broadway Avenue, Oakland, California 94611

Approximate Groundwater Elevation: 64.91 (MW-11) – 73.19 (MW-6) feet relative to mean sea level

Measured  Estimated

Groundwater Gradient: 0.033 ft/ft (Magnitude) South-southwest (Direction)

**DISCUSSION:**

Groundwater conditions during the fourth quarter 2011 remained generally consistent with previous quarters. The maximum dissolved concentrations of TPH-g (9,900 micrograms per liter [ $\mu\text{g/L}$ ]), total xylenes (47  $\mu\text{g/L}$ ), and MTBE (9.3  $\mu\text{g/L}$ ) were detected in the samples collected from MW-3. The maximum dissolved concentrations of benzene (240  $\mu\text{g/L}$ ), toluene (1.2  $\mu\text{g/L}$ ), and ethylbenzene (180  $\mu\text{g/L}$ ) were detected in the samples collected from RW-1. EDB, EDC, and ethanol were not detected above the laboratory reporting limits for all wells sampled.

Additionally, the maximum concentration of alkalinity as  $\text{CaCO}_3$  (390 milligrams per liter [ $\text{mg/L}$ ]) was detected in the samples collected from MW-12. Maximum concentrations of nitrate as  $\text{NO}_3$  (9.8  $\text{mg/L}$ ) and sulfate (69  $\text{mg/L}$ ) were detected in the samples collected from MW-11. The maximum concentration of total iron (12,000  $\mu\text{g/L}$ ) was detected in the sample collected from MW-4. Total iron was not detected above the laboratory reporting limits for all wells sampled.

Groundwater elevations at the site vary by approximately eight feet, creating a hydraulic gradient of 0.033 foot per foot in the south-southwest direction.

**CONCLUSIONS AND RECOMMENDATIONS:**

Dissolved hydrocarbon constituent concentrations have remained relatively consistent with previous quarters. ARCADIS recommends continued groundwater monitoring and monthly product gauging and bail down.

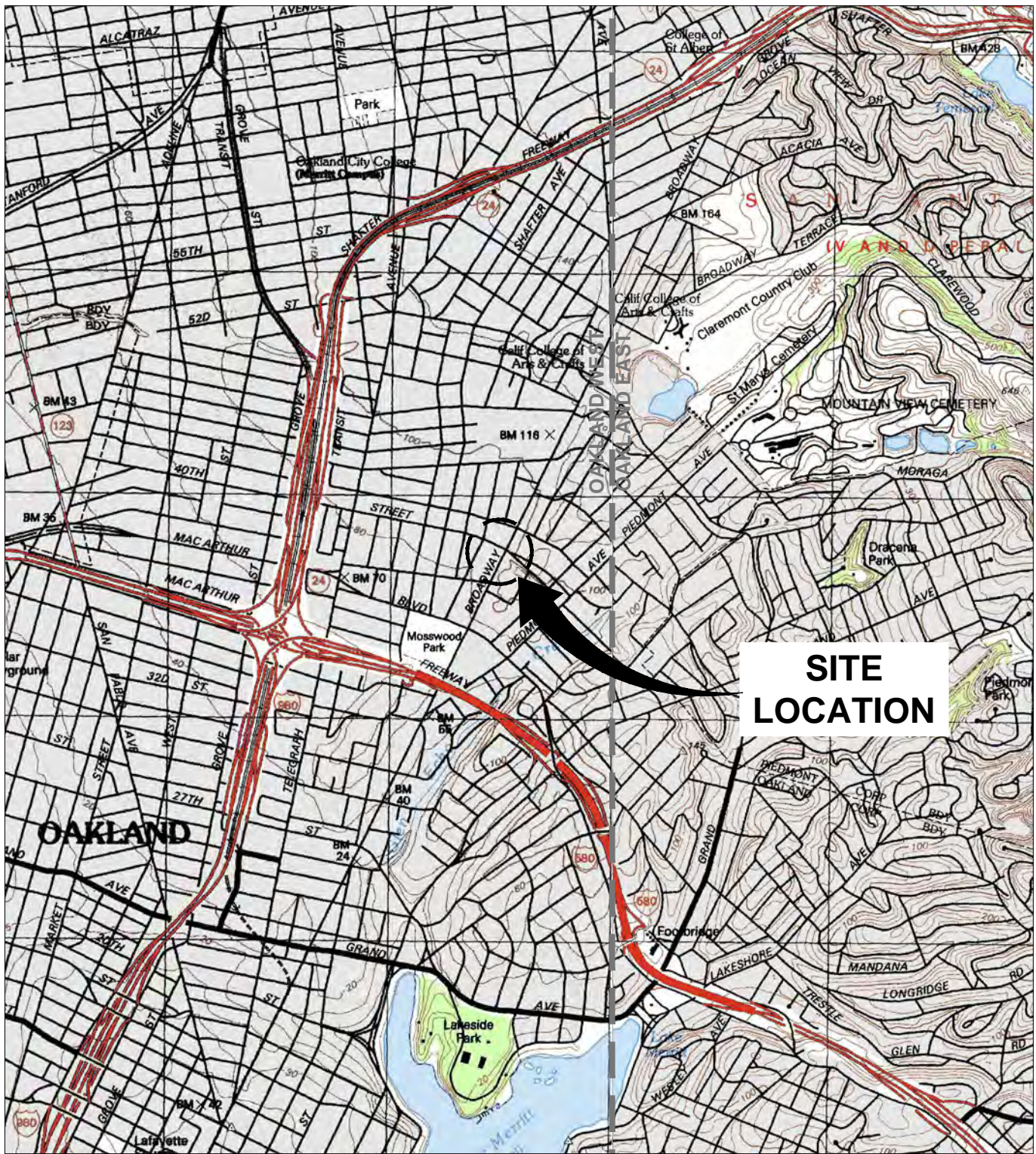
**ATTACHMENTS:**

- Figure 1: Site Location Map
- Figure 2: Site Plan
- Figure 3: Groundwater Contour Map
- Figure 4: TPH-g Concentration Map
- Figure 5: Benzene Concentration Map
- Figure 6: MTBE Concentration Map
  
- Table 1: Current Groundwater Gauging and Analytical Results
- Table 1a: Current Additional Groundwater Analytical Results
- Table 2: Liquid Phase Hydrocarbon Recovery Data
  
- Attachment A: Field Data Sheets and General Procedures
- Attachment B: Historical Groundwater Results from TRC
- Attachment C: Laboratory Report and Chain-of-Custody Documentation

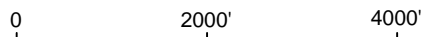




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 Oakland West.jpg



REFERENCE: BASE MAP USGS 7.5 MIN. TOPO. QUAD., OAKLAND WEST, CALIFORNIA, 1993, AND OAKLAND EAST, CALIFORNIA, 1997.



Approximate Scale: 1 in. = 2000 ft.



UNION OIL  
 STATION NO. 746  
 3943 BROADWAY  
 OAKLAND, CALIFORNIA

**SITE LOCATION MAP**

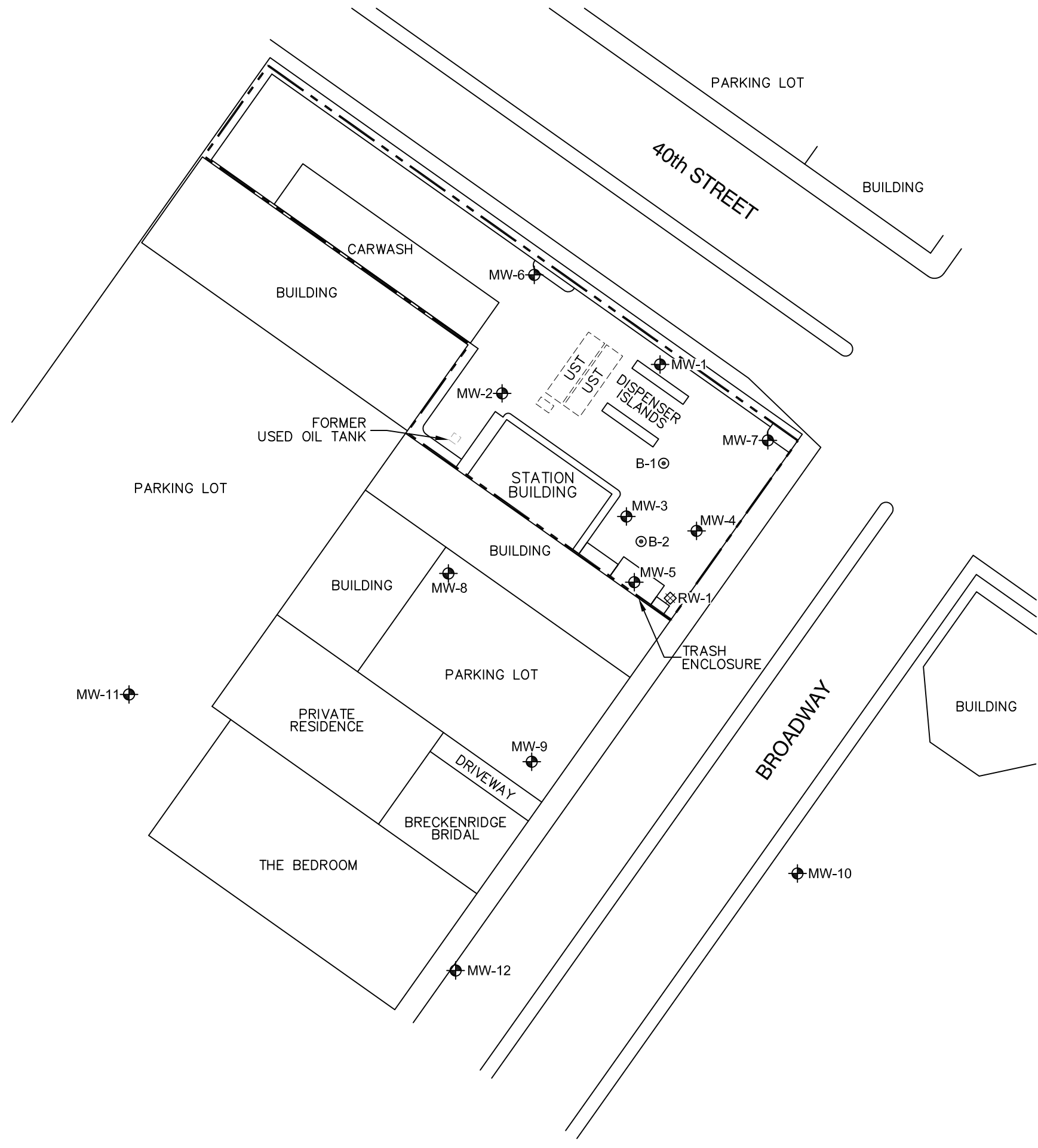


FIGURE

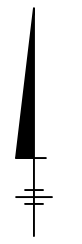
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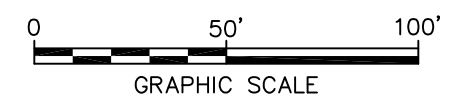
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- LEGEND**
- PROPERTY BOUNDARY
  - MW-1 MONITORING WELL
  - RW-1 RECOVERY WELL
  - B-1 CPT BORING

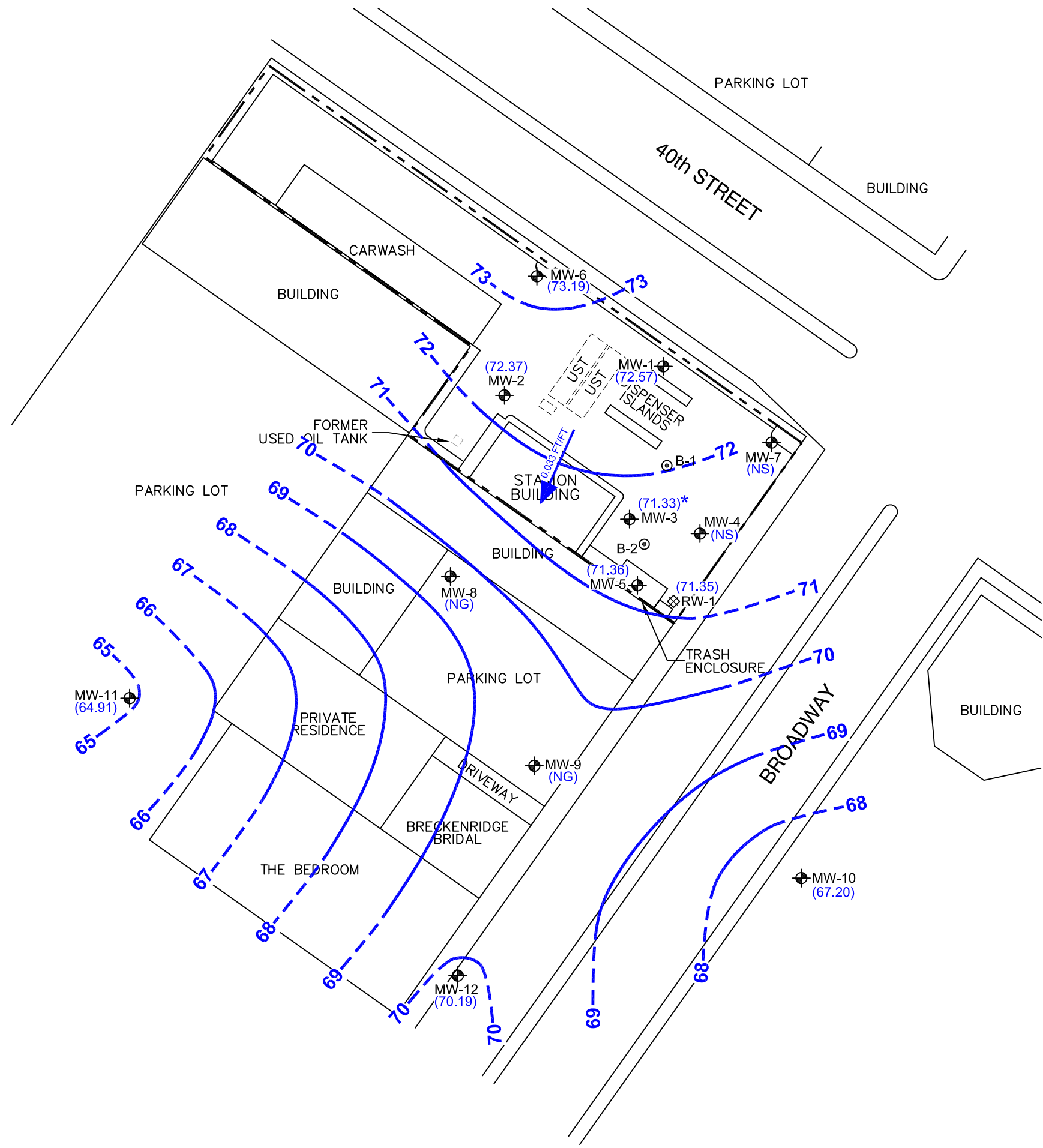


- NOTES:**
1. BASE MAP DIGITIZED FROM A FIGURE PDF PROVIDED BY DELTA, DATED 09/14/09, AT A SCALE OF 1"=50'.
  2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



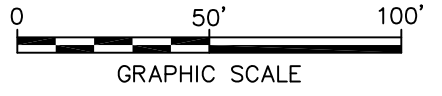
UNION OIL STATION NO. 746 3943 BROADWAY OAKLAND, CALIFORNIA	
<b>SITE PLAN WITH SOIL BORING AND MONITORING WELL LOCATIONS</b>	
	FIGURE <b>2</b>

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- LEGEND**
- PROPERTY BOUNDARY
  - MW-1 MONITORING WELL
  - RW-1 RECOVERY WELL
  - B-1 CPT BORING
  - (72.57) GROUNDWATER ELEVATION IN FEET RELATIVE TO MEAN SEA LEVEL (FT MSL)
  - 72- - - GROUNDWATER ELEVATION CONTOUR (FT MSL; DASHED WHERE INFERRED)
  - 0.033 FT/FT GROUNDWATER FLOW DIRECTION AND GRADIENT (FOOT PER FOOT)
  - (NG) NOT GAUGED
  - (NS) NOT SAMPLED
  - \* NOT USED IN CONTOURING

- NOTES:**
1. BASE MAP DIGITIZED FROM A FIGURE PDF PROVIDED BY DELTA, DATED 09/14/09, AT A SCALE OF 1"=50'.
  2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



UNION OIL  
 STATION NO. 746  
 3943 BROADWAY  
 OAKLAND, CALIFORNIA

**GROUNDWATER ELEVATION  
 CONTOUR MAP**

**ARCADIS**

FIGURE  
**3**













**Table 1**  
**Current Groundwater Gauging and Analytical Results**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

Well ID	Date Sampled	TOC (feet MSL)	DTW (feet BTOC)	LPH Thickness (feet)	GW Elevation (feet MSL)	Previous Quarter GWE (feet MSL)	Change in Elevation (feet)	TPH-g (GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDB	EDC	Ethanol	Comments
MW-1	12/9/2011	80.54	7.97	0.00	72.57	74.29	-1.72	<50	<0.50	<0.50	<0.50	<1.0	4.2	<0.50	<0.50	<250	
MW-2	12/9/2011	81.32	8.95	0.00	72.37	73.57	-1.20	<50	<0.50	<0.50	<0.50	<1.0	7.9	<0.50	<0.50	<250	
MW-3	12/9/2011	81.41	10.08	0.00	71.33	75.31	-3.98	9,900	11	<2.5	98	47	9.3	<2.5	<2.5	<1,200	A01
MW-4	12/9/2011	--	9.04	0.00	--	--	--	1,900	<0.50	<0.50	1.4	<1.0	<0.50	<0.50	<0.50	<250	
MW-5	12/9/2011	81.38	10.02	0.21	71.36	74.66	-3.30	--	--	--	--	--	--	--	--	--	
MW-6	12/9/2011	79.94	6.75	0.00	73.19	73.70	-0.51	<50	<0.50	<0.50	<0.50	<1.0	2.0	<0.50	<0.50	<250	
MW-7	12/9/2011	--	8.54	0.00	--	--	--	120	<0.50	<0.50	<0.50	<1.0	4.5	<0.50	<0.50	<250	
MW-8	12/9/2011	81.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	12/9/2011	80.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	12/9/2011	81.61	14.41	0.00	67.20	69.25	-2.05	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-11	12/9/2011	78.18	13.27	0.00	64.91	62.39	2.52	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
MW-12	12/9/2011	79.61	9.42	0.00	70.19	72.28	-2.09	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<250	
RW-1	12/9/2011	80.63	9.28	0.00	71.35	75.18	-3.83	2,900	240	1.2	180	30	<0.50	<0.50	<0.50	<250	A01

**Table 1**  
**Current Groundwater Gauging and Analytical Results**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

Well ID	Date Sampled	TOC (feet MSL)	DTW (feet BTOC)	LPH Thickness (feet)	GW Elevation (feet MSL)	Previous Quarter GWE (feet MSL)	Change in Elevation (feet)	TPH-g (GC/MS)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDB	EDC	Ethanol	Comments
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**Note**

Analytical results given in micrograms per liter (µg/l) unless otherwise stated

**Standard Abbreviations**

- not analyzed, measured, or collected
- < not detected at or above laboratory detection limit
- TOC top of casing (surveyed reference elevation)
- feet MSL feet relative to mean sea level
- DTW depth to water
- BTOC below top of casing
- LPH liquid-phase hydrocarbons
- GW groundwater
- GWE groundwater elevation

**Analytes**

- TPH-g total petroleum hydrocarbons with gasoline (C6-C12)
- MTBE methyl tertiary butyl ether
- EDB 1,2-dibromoethane (same as ethylene dibromide)
- EDC 1,2-dichloroethane (same as ethylene dichloride)
- Luft-GC/MS Luft Method GC/MS for TPH-g
- GC/MS gas chromatography–mass spectrometry
- 8260B EPA Method 8260B for Volatile Organic Compounds

**Laboratory Qualifiers**

- A01 PQL's and MDL's are raised due to sample dilution.
- PQL practical quantitation limit
- MDL method detection limit

**Table 1a**  
**Current Additional Groundwater Analytical Results**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

<b>Well ID</b>	<b>Date Sampled</b>	<b>Total Alkalinity as CaCO3 (mg/L)</b>	<b>Nitrate as NO3 (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Total Sulfide (mg/L)</b>	<b>Total Iron</b>	<b>Comments</b>
MW-1	12/9/2011	230	2.4	21	<0.050	6,200	
MW-2	12/9/2011	--	--	--	--	--	
MW-3	12/9/2011	--	--	--	--	--	
MW-4	12/9/2011	130	<0.090	<0.12	<0.20	12,000	A10
MW-5	12/9/2011	--	--	--	--	--	
MW-6	12/9/2011	--	--	--	--	--	
MW-7	12/9/2011	--	--	--	--	--	
MW-8	12/9/2011	--	--	--	--	--	
MW-9	12/9/2011	--	--	--	--	--	
MW-10	12/9/2011	--	--	--	--	--	
MW-11	12/9/2011	270	9.8	69	<0.050	600	
MW-12	12/9/2011	390	0.77	9.9	<0.050	1,000	
RW-1	12/9/2011	--	--	--	--	--	

**Note**

Analytical results given in micrograms per liter (µg/l) unless otherwise stated

**Standard Abbreviations**

- not analyzed, measured, or collected
- < not detected at or above laboratory detection limit
- mg/L milligram per liter

**Analytes**

- CaCO3 calcium carbonate
- NO3 nitrate
- 310.1 EPA Method 310.1 for total alkalinity as CaCO3
- 300.0 EPA Method 300.0 for nitrate as NO3 and sulfate
- 376.2 EPA Method 376.2 for total sulfide
- 6010B EPA Method 6010B for total iron

**Laboratory Qualifiers**

- A10 PQL's and MDL's were raised due to matrix interference. •
- PQL practical quantitation limit
- MDL method detection limit

**Table 2**  
**Liquid Phase Hydrocarbon Recovery Data**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

<u>DATE</u>	<u>MW-5</u>	<u>RW-1</u>
11/11/1998	0.00	0.00
2/22/1999	0.040	0.00
4/2/1999	0.070	0.00
5/4/1999	0.00	0.00
5/20/1999	0.00	0.00
6/29/1999	0.00	0.00
0729/99	0.00	0.00
8/24/1999	0.00	0.00
9/27/1999	0.00	0.00
10/28/1999	0.00	0.00
11/15/1999	0.00	0.00
12/20/1999	0.00	0.00
1/20/2000	0.00	0.00
2/26/2000	0.00	0.00
3/31/2000	0.00	0.00
4/13/2000	0.000	0.00
5/22/2000	0.00	0.00
11/22/2000	0.020	0.00
2/14/2001	0.060	0.00
3/28/2001	0.00	0.00
4/28/2001	0.00	0.00
5/15/2001	0.00	0.00
6/29/2001	0.00	0.00
7/17/2001	0.00	0.00
8/30/2001	0.000	0.00
9/24/2001	0.00	0.00
10/15/2001	0.030	0.00
11/23/2001	0.00	0.00
12/10/2001	0.000	0.00
1/14/2002	0.00	0.00
2/22/2002	0.00	0.00
3/11/2002	0.000	0.00
4/15/2002	0.00	0.00
5/24/2002	0.040	0.00
6/17/2002	0.040	0.00
7/15/2002	0.020	0.00
8/19/2002	0.050	0.00
9/5/2002	0.030	0.00
10/7/2002	0.020	0.00
11/29/2002	0.020	0.00
12/12/2002	0.010	0.00
1/6/2003	0.010	0.00
2/12/2003	0.020	0.00
3/13/2003	0.020	0.00
4/7/2003	0.010	0.00
5/15/2003	0.030	0.00
6/12/2003	0.020	0.00
7/7/2003	0.010	0.00
8/14/2003	0.020	0.00
9/12/2003	0.020	0.00
10/15/2003	0.087	0.000
11/4/2003	0.043	0.000
11/21/2003	0.032	0.000



**Table 2**  
**Liquid Phase Hydrocarbon Recovery Data**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

<u>DATE</u>	<u>MW-5</u>	<u>RW-1</u>
12/18/2003	0.024	0.000
1/7/2004	0.009	0.000
2/9/2004	0.010	0.010
3/24/2004	0.031	0.000
4/16/2004	0.000	0.000
5/24/2004	0.050	0.000
6/8/2004	0.049	0.000
7/2/2004	0.046	0.000
8/20/2004	0.080	0.000
9/17/2004	0.048	0.000
10/22/2004	0.024	0.000
11/29/2004	0.036	0.000
12/21/2004	0.010	0.000
1/24/2005	0.027	0.000
2/18/2005	0.020	0.000
3/18/2005	0.024	0.000
4/14/2005	0.010	0.000
5/17/2005	0.010	0.000
6/24/2005	0.000	0.000
7/14/2005	0.020	0.000
8/5/2005	0.050	0.000
9/16/2005	0.009	0.000
10/21/2005	0.000	0.000
11/22/2005	0.000	0.000
12/15/2005	0.000	0.000
1/19/2006	0.000	0.000
2/15/2006	0.000	0.000
3/25/2006	0.000	0.000
4/27/2006	0.000	0.000
5/25/2006	0.000	0.000
6/14/2006	0.000	0.000
7/3/2006	0.000	0.000
8/10/2006	0.000	0.000
9/15/2006	0.027	0.000
10/27/2006	0.009	0.000
11/22/2006	0.017	0.000
12/21/2006	0.000	0.000
2/5/2007	0.010	0.000
2/20/2007	0.000	0.000
3/28/2007	0.000	0.000
4/30/2007	0.000	0.000
5/23/2007	0.073	0.000
6/28/2007	0.049	0.000
8/1/2007	0.000	0.000
8/27/2007	0.000	0.000
9/12/2007	0.040	0.000
10/16/2007	0.000	0.000
12/13/2007	0.029	0.000
1/29/2008	0.010	0.000
2/28/2008	0.020	0.000
3/21/2008	0.000	0.000
4/11/2008	0.058	0.000
5/21/2008	0.044	0.000
6/9/2008	0.029	0.000

**Table 2**  
**Liquid Phase Hydrocarbon Recovery Data**  
**76 Station 0746**  
**3943 Broadway Avenue, Oakland California**

<u>DATE</u>	<u>MW-5</u>	<u>RW-1</u>
7/18/2008	0.032	0.000
8/15/2008	0.024	0.000
9/24/2008	0.051	0.000
10/22/2008	0.044	0.000
11/26/2008	0.034	0.000
12/30/2008	0.022	0.000
1/23/2009	NA	0.000
3/27/2009	0.000	0.000
4/28/2009	0.102	0.000
5/28/2009	NA	NA
7/31/2009	0.034	0.000
8/21/2009	0.102	0.000
9/28/2009	0.017	0.000
10/26/2009	0.063	0.000
11/30/2009	0.075	0.000
12/15/2009	0.010	0.000
1/25/2010	0.003	0.000
2/26/2010	0.000	0.000
3/23/2010	0.010	0.000
4/22/2010	0.009	0.000
5/21/2010	0.117	0.000
6/28/2010	0.085	0.000
7/21/2010	0.040	0.000
8/18/2010	0.070	0.000
9/29/2010	0.030	0.000
10/18/2010	0.046	0.000
11/30/2010	0.058	0.000
12/29/2010	0.250	0.000
1/6/2011	0.138	0.000
1/20/2011	0.231	0.000
2/1/2011	0.230	0.000
2/14/2011	0.000	0.000
3/3/2011	0.000	0.000
3/22/2011	0.000	0.000
4/25/2011	0.000	0.000
5/27/2011	0.000	0.000
9/13/2011	0.000	0.000
10/20/2011	0.000	0.000
11/4/2011	0.000	0.000
12/23/2011	0.210	0.000
12/30/2011	0.000	0.000

**Total LPH Removed**  
**(gallons):      3.909      0.010**

LPH removed for 2" casing well = (feet of product)(0.17 gallon/foot)

4" casing well = (feet of product)(0.67 gallon/foot)

6" casing well = (feet of product)(1.5 gallon/foot)

ARCADIS

**Attachment A**

Field Data Sheets and General Procedures



123 Technology Drive West  
Irvine, CA 92618

949.727.9336 PHONE  
949.727.7399 FAX

[www.TRCSolutions.com](http://www.TRCSolutions.com)

DATE: December 15, 2011

TO: Katherine Brandt  
ARCADIS U.S., Inc.  
1900 Powell Street, 12<sup>th</sup> Floor  
Emeryville, California 94608

SITE: Unocal Site 0746  
Facility 351647  
3943 Broadway, Oakland, CA

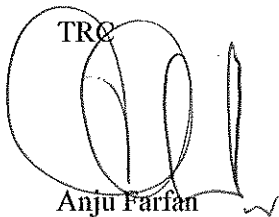
RE: Transmittal of Groundwater Monitoring Data

Dear Ms. Brandt,

Please find attached the field data sheets, chain of custody (COC) forms, and technical services request (TSR) form for the monitoring event that was completed on December 9, 2011. Field measurements and collection of samples submitted to the laboratory were completed in general accordance with our usual groundwater monitoring protocol which is also attached for your reference.

Please call me at 949-341-7440 if you have questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Anju Farfan". The signature is written over a circular stamp that contains the letters "TRC".

Anju Farfan  
Groundwater Program Operations Manager



# GENERAL FIELD PROCEDURES

## Groundwater Gauging and Sampling Assignments

For each site, TRC technicians are provided with a Technical Service Request (TSR) that specifies activities required to complete the groundwater gauging and sampling assignment for the site. TSRs are based on client directives, instructions from the primary environmental consultant for the site, regulatory requirements, and TRC's previous experience with the site.

## Fluid Level Measurements (Gauging)

Initial site activities include determination of well locations based on a site map provided with the TSR. Well boxes are opened and caps are removed. Indications of well or well box damage or of pressure buildup in the well are noted.

Fluid levels in each well are measured using a coated cloth tape equipped with an electronic interface probe, which distinguishes between liquid phase hydrocarbon (LPH) and water. The depth to LPH (if it is present), to water, and to the bottom of the well are measured from the top of the well casing (surveyors mark or notch if present) to the nearest 0.01 foot. Unless otherwise instructed, a well with less than 0.67 foot between the measured top of water and the measured bottom of the well casing is considered dry, and is not sampled. If the well contains 0.67 foot or more of water, an attempt is made to bail and/or sample as specified on the TSR.

Unless otherwise instructed, a well that is found to contain a measureable amount of LPH (0.01 foot) is not purged or sampled. Instead, one casing volume of fluid is bailed from the well and the well is re-sealed.

## Purging and Groundwater Parameter Measurement

TSR instructions may specify that a well not be purged (no-purge sampling), be purged using low-flow methods, or be purged using conventional pump and/or bail methods. Conventional purging generally consists of pumping or bailing until a minimum of three casing volumes of water have been removed or until the well has been pumped dry. Pumping is generally accomplished using submersible electric or pneumatic diaphragm pumps. The pump intake is initially set at about 5 feet below the level of water in the casing, and is lowered as needed to compensate for falling water level. Pump depths are recorded in Field Notes.

During conventional purging, three groundwater parameters (temperature, pH, and conductivity) are measured after removal of each casing volume. Stabilization of these parameters, to within 10 percent, confirm that sufficient purging has been completed. In some cases, the TSR indicates that other parameters are also to be measured during purging. TRC commonly measures dissolved oxygen (DO), oxidation-reduction potential (ORP), and/or turbidity. Instruments used for groundwater parameter measurements are calibrated daily according to manufacturer's instructions.

Low-flow purging utilizes a bladder or peristaltic pump to remove water from the well at a low rate. Groundwater parameters specified by the TSR are measured continuously, using a flow cell, until they become stable in general accordance with EPA guidelines.

## Groundwater Sample Collection

After wells are purged, or not purged, according to TSR instructions, samples are collected for laboratory analysis. For wells that have been purged using conventional pump or bail methods, sampling is conducted after the well has recovered to 80 percent of its original volume or after two hours if the well does not recover to at least 80 percent. If there is insufficient recharge of water in the well after two hours, the well is not sampled.

## **GENERAL FIELD PROCEDURES**

Samples are collected by lowering a new, disposable polyethylene bottom-fill bailer to just below the water level in the well. The bailer is retrieved and the water sample is carefully transferred to containers specified for the laboratory analytical methods indicated by the TSR. Particular care is given to containers for volatile organic analysis (VOAs) which require filling to zero headspace and fitting with Teflon-sealed caps.

Sample containers are labeled with project number (or site number), well designation, sample date, sample time, and the sampler's initials, and placed in an insulated chest with ice. Samples remain chilled prior to and during transport to a state-certified laboratory for analysis. Sample container descriptions and requested analyses are entered onto a chain-of-custody form in order to provide instructions to the laboratory. The chain-of-custody form accompanies the samples during transportation to provide a continuous record of possession from the field to the laboratory. If a freight or overnight carrier transports the samples, the carrier is noted on the form.

For wells that have been purged using low-flow methods, sample containers are filled from the effluent stream of the bladder or peristaltic pump. In some cases, if so specified by the TSR, samples are taken from the sample ports of actively pumping remediation wells.

### **Sequence of Gauging, Purging and Sampling**

The sequence in which monitoring activities are conducted is specified on the TSR. In general, wells are gauged beginning with the least affected well and ending with the well that has the highest concentration based on previous analytic results. After all gauging for the site is completed, wells are purged and/or sampled from the least-affected to the most-affected well. If wells must be gauged or sampled out of order, alternate interface probes and/or pumps are utilized and are noted in field documentation.

### **Decontamination**

In order to reduce the possibility of cross contamination between wells, strict isolation and decontamination procedures are observed. Portable pumps are not used in wells with LPH. Technicians wear nitrile gloves during all gauging, purging, and sampling activities. Gloves are changed between wells and more often if warranted. Any equipment that could come in contact with fluids are either dedicated a particular well, decontaminated prior to each use, or discarded after a single use. Decontamination consists of washing in a solution of Liquinox and water and rinsing twice. The final rinse is in deionized water.

### **Purge Water Disposal**

Purge water is generally collected in labeled drums for disposal as non-hazardous waste. Drums may be left on site for disposal by others, or transported to a collection location at a TRC field office, in either Fullerton, California or Concord, California, for eventual transfer to a licensed treatment or recycling facility. Alternatively, purge water may be collected directly from the site by a licensed vacuum truck company, or may be treated on site by an active remediation system, if so directed.

### **Exceptions**

Additional tasks or non-standard procedures, if any, that may be requested or required for a particular site, are documented in field notes on the following pages.

# FIELD MONITORING DATA SHEET

Technician: JOE

Job #/Task #: 183487.0035.1647

Date: 12/09/11

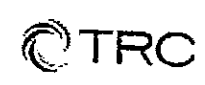
Site # 0746

Project Manager A. Fafan

Page 1 of 2

Well #	TOC	Time Gauged	Total Depth	Depth to Water	Depth to Product	Product Thickness (feet)	Time Sampled	Misc. Well Notes
MW-11	X	0620	19.10	13.27	—	—	1042	2"
MW-10	X	0627	21.67	14.41	—	—	0843	2"
MW-5	X	0640	19.75	10.02	9.81	0.21	NS	2"
MW-12	X	0702	17.56	9.42	—	—	1025	2"
RW-1	X	0710	16.10	9.28	—	—	1050	6"
MW-9	X						NS	
MW-8	X						NS	

FIELD DATA COMPLETE	<input checked="" type="checkbox"/> QA/QC	<input checked="" type="checkbox"/> COC	WELL BOX CONDITION SHEETS
MANIFEST	<input checked="" type="checkbox"/> DRUM INVENTORY	<input checked="" type="checkbox"/> TRAFFIC CONTROL	





# GROUNDWATER SAMPLING FIELD NOTES

Technician: JOE

Site: 0746

Project No.: 183487.0035.1647

Date: 12/09/11

Well No. MW-11

Purge Method: HB

Depth to Water (feet): 13.27

Depth to Product (feet):           

Total Depth (feet): 19.10

LPH & Water Recovered (gallons):           

Water Column (feet): 5.83

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 14.43

1 Well Volume (gallons): 1

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
0818			1	905.2	18.1	7.06			
			2	909.7	18.8	6.74			
	0820		3	926.0	18.6	6.57			
Static at Time Sampled			Total Gallons Purged			Sample Time			
16.18			3			1042			
Comments: <u>Did NOT recharge in 2 hrs.</u>									

Well No. MW-10

Purge Method: HB

Depth to Water (feet): 14.41

Depth to Product (feet):           

Total Depth (feet): 21.67

LPH & Water Recovered (gallons):           

Water Column (feet): 7.26

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 15.86

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
0829			2	525.1	17.3	7.19			
			4	534.8	18.2	6.89			
	0833		6	544.9	18.0	6.80			
Static at Time Sampled			Total Gallons Purged			Sample Time			
15.86			6			0843			
Comments:									

# GROUNDWATER SAMPLING FIELD NOTES

Technician: JOE

Site: 0746

Project No.: 183487.0035.1647

Date: 12/09/11

Well No. MW-12

Purge Method: HB

Depth to Water (feet): 9.42

Depth to Product (feet):                     

Total Depth (feet) 17.56

LPH & Water Recovered (gallons):                     

Water Column (feet): 8.14

Casing Diameter (Inches): 2"

80% Recharge Depth(feet): 11.04

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
0749			2	775.0	17.9	7.32			
			4	774.2	18.5	7.08			
	0758		6	782.7	18.4	6.97			
Static at Time Sampled			Total Gallons Purged			Sample Time			
14.08			6			1025			
Comments: <del>was</del> Did NOT recharge in 2 HRS.									

Well No. RW-1

Purge Method: SUB

Depth to Water (feet): 9.28

Depth to Product (feet):                     

Total Depth (feet) 16.10

LPH & Water Recovered (gallons):                     

Water Column (feet): 6.82

Casing Diameter (Inches): 6"

80% Recharge Depth(feet): 10.64

1 Well Volume (gallons): 10

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, C)	pH	D.O. (mg/L)	ORP	Turbidity
<b>Pre-Purge</b>									
0941			10	139.9	14.4	7.37			
	0951		20	144.2	15.5	6.91			
1004	1009		30	177.8	15.9	6.69			
Static at Time Sampled			Total Gallons Purged			Sample Time			
10.36			30			1050			
Comments: Approx. Pump Depth 14.28 At 10 Gals. 16.00, Dry At 20 Gals. Well Recharged with in 45 mins. Dry At 30 Gals. Sampled by Basilio									

# GROUNDWATER SAMPLING FIELD NOTES

Technician: Basilio

Site: 0746

Project No.: 183487.0035.1647

Date: 12/9/11

Well No. MW-1

Purge Method: Sub

Depth to Water (feet): 7.97

Depth to Product (feet): —

Total Depth (feet): 19.59

LPH & Water Recovered (gallons): —

Water Column (feet): 11.62

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 10.29

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0815			2	611.0	15.2	6.92			
			4	613.2	17.6	6.86			
	0818		6	618.3	18.4	6.77			
Static at Time Sampled		Total Gallons Purged			Sample Time				
7.99		6			0826				
Comments:									

Well No. MW-2

Purge Method: Sub

Depth to Water (feet): 8.95

Depth to Product (feet): —

Total Depth (feet): 19.82

LPH & Water Recovered (gallons): —

Water Column (feet): 10.87

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 11.12

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0835			2	474.8	14.7	6.83			
			4	432.1	16.6	6.71			
	0838		6	426.9	17.4	6.69			
Static at Time Sampled		Total Gallons Purged			Sample Time				
11.12		6			0847				
Comments:									

# GROUNDWATER SAMPLING FIELD NOTES

Technician: B. Lewis

Site: 0746

Project No.: 183487.0035.1647

Date: 12/6/11

Well No. MW-4  
 Depth to Water (feet): 9.04  
 Total Depth (feet) 19.80  
 Water Column (feet): 10.76  
 80% Recharge Depth(feet): 11.19

Purge Method: Jub  
 Depth to Product (feet): -  
 LPH & Water Recovered (gallons): -  
 Casing Diameter (Inches): 2  
 1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0740			2	212.3	11.2	7.04			
			4	231.1	13.6	6.98			
	0743		6	245.2	15.1	6.92			
Static at Time Sampled		Total Gallons Purged			Sample Time				
14.43		6			0953				
Comments: <u>Did not recover 2 hrs.</u>									

Well No. MW-6  
 Depth to Water (feet): 6.75  
 Total Depth (feet) 19.60  
 Water Column (feet): 12.85  
 80% Recharge Depth(feet): 9.32

Purge Method: Jub  
 Depth to Product (feet): -  
 LPH & Water Recovered (gallons): -  
 Casing Diameter (Inches): 2  
 1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0753			3	633.3	15.9	7.52			
			6	646.7	18.6	7.36			
	0758		9	652.3	19.5	7.32			
Static at Time Sampled		Total Gallons Purged			Sample Time				
9.32		9			0805				
Comments:									



# GROUNDWATER SAMPLING FIELD NOTES

Technician: Basilio

Site: 0746

Project No.: 183487.0035.1647

Date: 12/9/11

Well No. MW-7

Purge Method: Sub

Depth to Water (feet): 8.54

Depth to Product (feet): —

Total Depth (feet): 19.67

LPH & Water Recovered (gallons): —

Water Column (feet): 11.13

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 10.76

1 Well Volume (gallons): 2

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0918			2	468.5	15.7	6.92			
			4	480.1	17.9	6.88			
	0921		6	481.5	18.1	6.81			
Static at Time Sampled		Total Gallons Purged			Sample Time				
9.60		6			0930				
Comments:									

Well No. MW-3

Purge Method: Sub

Depth to Water (feet): 10.08

Depth to Product (feet): —

Total Depth (feet): 22.52

LPH & Water Recovered (gallons): —

Water Column (feet): 12.44

Casing Diameter (Inches): 2

80% Recharge Depth(feet): 12.56

1 Well Volume (gallons): 3

Time Start	Time Stop	Depth to Water (feet)	Volume Purged (gallons)	Conductivity (µS/cm)	Temperature (F, °C)	pH	D.O. (mg/L)	ORP	Turbidity
Pre-Purge									
0943			3	310.3	17.1	6.93			
	0946		6	290.7	18.4	6.77			
0959	1002		9	287.1	19.3	6.56			
Static at Time Sampled		Total Gallons Purged			Sample Time				
10.87		9			1012				
Comments:									

# MANUAL PUMP/BAIL OUT SHEET

Site #: 0746 Project #: 183487.0035.1647 Date: 12/09/11

Technician: JOE Page #: 1 of 1

### Monitoring Data Before Pump/Bail Out

Well Number MW-5  
 Depth to Product 9.81  
 Depth to Water 10.02  
 Total Depth of Well 19.75  
 Feet of Total Fluid in Well 9.94  
 Thickness of Product (ft.) 0.21  
 Well Diameter (in.) 2"  
 One Well Volume (gal.) 2

#### Pump/Bail One Well Volume

Water Recovered (gal.) 1.79  
 Product Recovered (gal.) 0.21  
THICKNESS OF PRODUCT x (0.67 FOR 4" CASING) OR  
 (0.17 FOR 2" CASING) OR (1.5 FOR 6" CASING)  
 Time Required for Purge 5 mins.  
 Comments: color of the LPH was Brown

### Monitoring Data Before Pump/Bail Out

Well Number \_\_\_\_\_  
 Depth to Product \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Total Depth of Well \_\_\_\_\_  
 Feet of Total Fluid in Well \_\_\_\_\_  
 Thickness of Product (ft.) \_\_\_\_\_  
 Well Diameter (in.) \_\_\_\_\_  
 One Well Volume (gal.) \_\_\_\_\_

#### Pump/Bail One Well Volume

Water Recovered (gal.) \_\_\_\_\_  
 Product Recovered (gal.) \_\_\_\_\_  
THICKNESS OF PRODUCT x (0.67 FOR 4" CASING) OR  
 (0.17 FOR 2" CASING) OR (1.5 FOR 6" CASING)  
 Time Required for Purge \_\_\_\_\_  
 Comments: \_\_\_\_\_

### Monitoring Data Before Pump/Bail Out

Well Number \_\_\_\_\_  
 Depth to Product \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Total Depth of Well \_\_\_\_\_  
 Feet of Total Fluid in Well \_\_\_\_\_  
 Thickness of Product (ft.) \_\_\_\_\_  
 Well Diameter (in.) \_\_\_\_\_  
 One Well Volume (gal.) \_\_\_\_\_

#### Pump/Bail One Well Volume

Water Recovered (gal.) \_\_\_\_\_  
 Product Recovered (gal.) \_\_\_\_\_  
THICKNESS OF PRODUCT x (0.67 FOR 4" CASING) OR  
 (0.17 FOR 2" CASING) OR (1.5 FOR 6" CASING)  
 Time Required for Purge \_\_\_\_\_  
 Comments: \_\_\_\_\_

### Monitoring Data Before Pump/Bail Out

Well Number \_\_\_\_\_  
 Depth to Product \_\_\_\_\_  
 Depth to Water \_\_\_\_\_  
 Total Depth of Well \_\_\_\_\_  
 Feet of Total Fluid in Well \_\_\_\_\_  
 Thickness of Product (ft.) \_\_\_\_\_  
 Well Diameter (in.) \_\_\_\_\_  
 One Well Volume (gal.) \_\_\_\_\_

#### Pump/Bail One Well Volume

Water Recovered (gal.) \_\_\_\_\_  
 Product Recovered (gal.) \_\_\_\_\_  
THICKNESS OF PRODUCT x (0.67 FOR 4" CASING) OR  
 (0.17 FOR 2" CASING) OR (1.5 FOR 6" CASING)  
 Time Required for Purge \_\_\_\_\_  
 Comments: \_\_\_\_\_

Fluids from all of today's Manual Pump/Bail Outs were pumped into:

- 1) Vac Truck  2) Properly Labeled Drums  3) Other  \_\_\_\_\_



STATEMENT OF NON-COMPLETION OF JOB

DATE OF EVENT: 12/09/11 SITE ID: 0746

TECH: JOE CALLED SUPERVISOR: YES / NO

CALLED PM: YES / NO NAME OF PM: \_\_\_\_\_

WELL ID: MW-5 Product present in well

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

WELL ID: MW-8 & MW-9 No Access agreement

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

WELL ID: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# WELL BOX CONDITION REPORT

SITE NO. 0746

ADDRESS 3943 Broadway

DATE 12/09/11

PERFORMED BY: JOE

PAGE 1 OF 2

Well Name	Current Well Box Size	# of Ears	# of Stripped Ears	# of Broken Ears	# of Broken Bolts	# of Missing Bolts	Seal Damaged	Missing Lid	Broken Lid	Well Box is Exposed	Well Box is Below Grade	Unable to Access	Unable to Locate	Foundation Damaged	Paved Over	Street Well	Saw Cut Needed	System Well	USA Marked Well	Comments
MW-11	8"	2																		
MW-10	8"	2																		
MW-12	8"	3		2															✓	
MW-5	12"	2																		
RW-1																				
MW-9												✓								
MW-8												✓								



# WELL BOX CONDITION REPORT

SITE NO. 0746  
 ADDRESS 3943 Broadway  
 DATE 12/9/11

PERFORMED BY: Baird  
 PAGE 2 OF 2

Well Name	Current Well Box Size	# of Ears	# of Stripped Ears	# of Broken Ears	# of Broken Bolts	# of Missing Bolts	Seal Damaged	Missing Lid	Broken Lid	Well Box is Exposed	Well Box is Below Grade	Unable to Access	Unable to Locate	Foundation Damaged	Paved Over	Street Well	Saw Cut Needed	System Well	USA Marked Well	Comments	
MW 4	12"	2																			
MW 6	12"	2																			
MW 1	12"	2																			
MW 2	12"	2																			
MW 7	12"	2																			
MW 3	12"	2																			



CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 1 of 1

Union Oil Site ID: <u>70600101471</u>				Union Oil Consultant: <u>HICADIS</u>				ANALYSES REQUIRED											
Site Global ID: <u>70600101471</u>				Consultant Contact: <u>Rutha Krawitz</u>				TPH - Diesel by EPA 8015	TPH - G by GC/MS (16.110)	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B (16.110)	EPA 8260B Full List with OXYS	Include Sample Matrix	Total 1 can	Substrate	Turnaround Time (TAT): Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/>			
Site Address: <u>3143 Rosalind way</u>				Consultant Phone No.: <u>510-506-2075</u>												Special Instructions <u>Run POXYS - 5000 in all NOT BE NITS!</u>			
Union Oil PM: <u>NOLA Krawitz</u>				Sampling Company: <u>TRC</u>															
Union Oil PM Phone No.: <u>925-740-6270</u>				Sampled By (PRINT): <u>MS/10 / JDE</u>				BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911											
Charge Code: <u>NWRB-0 351677-0-LAB</u>				Sampler Signature: <u>[Signature]</u>															
This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY.																			
SAMPLE ID				Sample Time	# of Containers	ANALYSES REQUIRED										Notes / Comments			
Field Point Name	Matrix	DTW	Date (yyymmdd)			TPH - Diesel by EPA 8015	TPH - G by GC/MS (16.110)	BTEX/MTBE/OXYS by EPA 8260B	Ethanol by EPA 8260B (16.110)	EPA 8260B Full List with OXYS	Include Sample Matrix	Total 1 can	Substrate						
<del>2110-1</del>	W-S-A		<del>12/9/11</del>	<del>0953</del>	<del>6</del>														
2110-7	W-S-A		12/9/11	0953	6	X	X	X	X	X	X								
2110-11	W-S-A			1042	6				X	X	X								
2110-10	W-S-A			0943	2														
2110-12	W-S-A			1025	6				X	X	X								
2110-6	W-S-A			0905	3														
2110-1	W-S-A			0926	6				X	X	X								
2110-2	W-S-A			0947	2														
2110-1	W-S-A			1050	3														
2110-7	W-S-A			0930	3														
2110-3	W-S-A			1012	2														
	W-S-A																		
Relinquished By: <u>[Signature]</u> Company: <u>TRC</u> Date / Time: <u>12/9/11 1400</u>				Relinquished By: _____ Company: _____ Date / Time: _____				Relinquished By: _____ Company: _____ Date / Time: _____											
Received By: <u>[Signature]</u> Company: <u>Delabs</u> Date / Time: <u>12/9/11 1300</u>				Received By: _____ Company: _____ Date / Time: _____				Received By: _____ Company: _____ Date / Time: _____											

**TRC SOLUTIONS**  
**TECHNICAL SERVICES REQUEST FORM**

08-Dec-11

**Site ID:** 0746  
**Address:** 3943 Broadway  
**City:** Oakland  
**Cross Street:** 40th Street

**Project No.:** 183487.0035.1647 / 00TA01  
**Client:** Roya Kambin  
**Contact #:** 925-790-6270  
**PM:** Kathy Brandt      Arcadis  
**PM Contact #:** 510-596-9675

**Total number of wells:** 13      **Min. Well Diameter (in.):** 2      **# of Techs, # of Hrs:** 2, 5  
**Depth to Water (ft.):** 7      **Max. Well Diameter (in.):** 6      **Travel Time (hrs):**  
**Max. Well Depth (ft):** 22

<b>ACTIVITIES:</b>	<b>Frequency</b>	<b>Notes</b>
Gauging:	<input checked="" type="checkbox"/> Semi Q2/Q4	
Purge/Sampling:	<input checked="" type="checkbox"/> Semi Q2/Q4	
No Purge/Sample	<input type="checkbox"/>	

<b>RELATED ACTIVITIES</b>	<b>Note</b>
Drums:	<input checked="" type="checkbox"/>
Other Activities:	<input checked="" type="checkbox"/> No parking signs
Traffic Control:	<input type="checkbox"/>

**PERMIT INFORMATION:**

Post no parking signs at least 48 hours before event.

**NOTIFICATIONS:**

Broadway 76: 510-655-7662

MW-11: Oakland Masonic Temple, 510-653-3353

Red Cross on Broadway. Need to call to make sure the blood mobiles are not parked over the wells: 510-595-4400

Ohgane Korean BBQ: (510) 594-8300. MW-8 & MW-9 are on restaurant property. Restaurant does not open until 10:00am.  
\*\*\*\*\* 4Q11 Check w/ PM if we have access to these wells \*\*\*\*\*

**SITE INFORMATION:**

Check skimmer in MW-5 and bail product (if any)

MW-11 is located in the Red Cross parking lot. They open at 8:30am.

4Q11 Additional Field Measurement for All Wells:  
Pre-purge DO  
Pre-purge ORP

NO ACCESS AGREEMENT FOR WELLS MW-8 & MW-9. DO NOT DO WELLS AND FILL OUT NON-COMPLETION FORM.

**TRC SOLUTIONS**  
**TECHNICAL SERVICES REQUEST FORM**

08-Dec-11

**Site ID:** 0746  
**Address** 3943 Broadway  
**City:** Oakland  
**Cross Street** 40th Street

**Project No.:** 183487.0035.1647 / 00TA01  
**Client:** Roya Kambin  
**Contact #:** 925-790-6270  
**PM:** Kathy Brandt          Arcadis  
**PM Contact #:** 510-596-9675

**LAB INFORMATION:**

**Global ID:** T0600101471  
**Lab WO:** 351647

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**Lab Used:** BC

**Lab Notes:** Lab Analyses:  
TPH-G by GC/MS (C6 - C12), BTEX/MTBE by 8260B, Ethanol by 8260B, EDB/EDC by 8260B [Containers: 3 voas w/HCl]

4Q11 Additional Analyses for wells MW-1, MW-5, MW-11, MW-12 (Note: if LPH in MW-5 collect the samples from MW-4)  
Nitrate, Sulfate, Alkalinity [Container: one 1L poly unpreserved]  
Total Iron [Container: one 500 mL poly w/ HNO3]  
Sulfide [Container: one 500 mL poly w/ Zn acetate]

Note on COC "Run 8 OXYS by 8260 on all 8260 MTBE hits."



**TRC SOLUTIONS**  
**TECHNICAL SERVICES REQUEST FORM**

08-Dec-11

Site ID.: 0746  
 Address 3943 Broadway  
 City: Oakland  
 Cross Street 40th Street

Well IDs	Benz.	MTBE	Gauging				Sampling				Field Measurements			Comments
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Pre-Purge	Post-Purge	Type	
MW-9	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-5	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing/ Inside trash enclosure
MW-4	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-11	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-10	0	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-12	0	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-8	0	2.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-6	0	12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-1	0	22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-2	0.97	14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
RW-1	4.1	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6" casing
MW-7	11	19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing
MW-3	170	5.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2" casing

# FIELD MONITORING DATA SHEET

Technician: Pike Pennell Job #/Task #: 183487.0035.1647

Date: 9/13/11

Site # 0746 Project Manager A. FARSON

Page 1 of 1

Well #	TOC	Time Gauged	Total Depth	Depth to Water	Depth to Product	Product Thickness (feet)	Time Sampled	Misc. Well Notes
RW-1	✓	1157	16.13	5.49	—	—	N/S	6"
MW-5	✓	1206	19.70	6.70	—	—	N/S	2" SKIMMER CLEAR

FIELD DATA COMPLETE	QA/QC	COC	WELL BOX CONDITION SHEETS
MANIFEST	DRUM INVENTORY	TRAFFIC CONTROL	



# FIELD MONITORING DATA SHEET

Technician: Basilio

Job #/Task #: 183487-0035-1647

Date: 10/20/11

Site # 0746

Project Manager Anjin F.

Page 1 of 1

Well #	TOC	Time Gauged	Total Depth	Depth to Water	Depth to Product	Product Thickness (feet)	Time Sampled	Misc. Well Notes
RW-1	✓	1131	16.10	5.45	—	—	N/S	8"
MW-5	✓	1141	19.70	6.72	—	—	N/S	2"

FIELD DATA COMPLETE	QA/QC	COC	WELL BOX CONDITION SHEETS
MANIFEST	DRUM INVENTORY	TRAFFIC CONTROL	



# FIELD MONITORING DATA SHEET

Technician: Baird

Job #/Task #: 183487.0035.1647

Date: 11/2/11

Site # 0746

Project Manager A. F.

Page 1 of 1

Well #	TOC	Time Gauged	Total Depth	Depth to Water	Depth to Product	Product Thickness (feet)	Time Sampled	Misc. Well Notes
RW-1	✓	1310	16.10	5.22	—	—	n/s	8"
MW-5	✓	1320	19.72	6.64	—	—	n/s	2"

FIELD DATA COMPLETE	QA/QC	COC	WELL BOX CONDITION SHEETS
MANIFEST	DRUM INVENTORY	TRAFFIC CONTROL	

ARCADIS

**Attachment B**

Historical Groundwater Results from TRC

**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
<b>MW-1</b>														
11/1/1989	--	--	--	--	--	ND	--	ND	ND	ND	0.3	--	--	
2/15/1990	--	--	--	--	--	170	--	7.9	ND	2.2	2.8	--	--	
8/16/1990	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/7/1990	--	--	--	--	--	45	--	ND	ND	ND	ND	--	--	
2/25/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/19/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/6/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/23/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/26/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/20/1992	--	--	--	--	--	ND	--	0.75	ND	ND	ND	--	--	
12/21/1992	81.07	8.12	0	72.95	--	--	--	--	--	--	--	--	--	
1/30/1993	81.07	7.63	0	73.44	0.49	--	--	--	--	--	--	--	--	
2/24/1993	81.07	7.16	0	73.91	0.47	1100	--	280	4.9	120	140	--	--	
3/22/1993	81.07	6.26	0	74.81	0.90	--	--	--	--	--	--	--	--	
4/28/1993	81.07	7.91	0	73.16	-1.65	--	--	--	--	--	--	--	--	
5/25/1993	81.07	7.87	0	73.20	0.04	260	--	27	4.9	2.6	54	--	--	
6/23/1993	80.54	7.66	0	72.88	-0.32	--	--	--	--	--	--	--	--	
7/22/1993	80.54	7.87	0	72.67	-0.21	--	--	--	--	--	--	--	--	
8/25/1993	80.54	8.00	0	72.54	-0.13	ND	--	ND	ND	ND	ND	--	--	
9/22/1993	80.54	8.10	0	72.44	-0.10	--	--	--	--	--	--	--	--	
10/28/1993	80.54	8.15	0	72.39	-0.05	--	--	--	--	--	--	--	--	
11/30/1993	80.54	7.65	0	72.89	0.50	--	--	--	--	--	--	--	--	Sampled semi-annually
2/16/1994	80.54	7.46	0	73.08	0.19	ND	--	0.84	ND	ND	0.59	--	--	
5/31/1994	80.54	7.80	0	72.74	-0.34	--	--	--	--	--	--	--	--	
8/31/1994	80.54	8.27	0	72.27	-0.47	ND	--	ND	0.98	ND	0.84	--	--	
9/27/1994	80.54	8.37	0	72.17	-0.10	--	--	--	--	--	--	--	--	
10/11/1994	80.54	8.36	0	72.18	0.01	--	--	--	--	--	--	--	--	
11/10/1994	80.54	6.43	0	74.11	1.93	--	--	--	--	--	--	--	--	
2/7/1995	80.54	7.06	0	73.48	-0.63	6100	--	670	ND	120	60	--	--	
5/3/1995	80.54	6.85	0	73.69	0.21	260	--	21	39	17	24	--	--	
8/3/1995	80.54	7.69	0	72.85	-0.84	--	--	--	--	--	--	--	--	
11/7/1995	80.54	8.15	0	72.39	-0.46	ND	--	ND	ND	ND	ND	--	--	
5/6/1996	80.54	7.40	0	73.14	0.75	170	--	1.0	20	2.3	17	55	--	
11/5/1996	80.54	7.90	0	72.64	-0.50	ND	--	ND	ND	ND	ND	5.2	--	
5/15/1997	80.54	7.77	0	72.77	0.13	ND	--	ND	ND	ND	ND	16	--	

**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
11/12/1997	80.54	7.48	0	73.06	0.29	ND	--	ND	ND	ND	ND	11	--	
5/4/1998	80.54	7.39	0	73.15	0.09	ND	--	ND	ND	ND	ND	320	--	
11/11/1998	80.54	7.37	0	73.17	0.02	ND	--	ND	ND	ND	ND	200	--	
5/20/1999	80.54	7.41	0	73.13	-0.04	ND	--	ND	ND	ND	ND	89	47	
11/15/1999	80.54	7.84	0	72.70	-0.43	ND	--	ND	ND	ND	ND	8.12	7.19	
5/22/2000	80.54	7.53	0	73.01	0.31	ND	--	0.89	ND	ND	ND	220	290	
11/22/2000	80.54	7.35	0	73.19	0.18	ND	--	ND	ND	ND	ND	105	142	
5/15/2001	80.54	7.48	0	73.06	-0.13	345	--	ND	3.41	2.77	25.2	178	374	
11/23/2001	80.54	7.57	0	72.97	-0.09	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	350	350	
5/24/2002	80.54	7.10	0	73.44	0.47	70	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	200	240	
11/29/2002	80.54	7.96	0	72.58	-0.86	ND<250	--	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	330	
5/15/2003	80.54	7.22	0	73.32	0.74	ND<250	--	ND<2.5	ND<2.5	ND<2.5	ND<5.0	--	210	
11/4/2003	80.54	7.94	0	72.60	-0.72	--	120	ND<1.0	ND<1.0	ND<1.0	ND<2.0	--	140	
5/24/2004	80.54	7.54	0	73.00	0.40	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	26	
11/29/2004	80.54	7.27	0	73.27	0.27	--	58	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	44	
6/24/2005	80.54	7.06	0	73.48	0.21	--	87	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	80	
12/15/2005	80.54	7.35	0	73.19	-0.29	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	32	
6/14/2006	80.54	7.06	0	73.48	0.29	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	44	
12/21/2006	80.54	7.12	0	73.42	-0.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	16	
6/28/2007	80.54	7.79	0	72.75	-0.67	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	5.6	
12/13/2007	80.54	7.94	0	72.60	-0.15	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	10	
6/9/2008	80.54	8.00	0	72.54	-0.06	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	29	
12/30/2008	80.54	7.51	0	73.03	0.49	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.2	
9/28/2009	80.54	8.10	0	72.44	-0.59	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.98	
12/15/2009	80.54	7.32	0	73.22	0.78	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
6/28/2010	80.54	7.80	0	72.74	-0.48	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	8.1	
12/29/2010	80.54	6.22	0	74.32	1.58	--	99	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	1.6	
<b>MW-2</b>														
11/1/1989	--	--	--	--	--	200	--	ND	ND	3.0	1.2	--	--	
2/15/1990	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/16/1990	--	--	--	--	--	ND	--	ND	6.7	ND	ND	--	--	
11/7/1990	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/25/1991	--	--	--	--	--	ND	--	0.68	0.42	ND	0.86	--	--	
5/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/19/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/6/1992	--	--	--	--	--	ND	--	0.36	0.66	ND	0.62	--	--	
5/23/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	







**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	Ground- LPH Thickness (feet)	Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl- benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
4/8/1993	82.01	9.14	0.02	72.89	-0.33	--	--	--	--	--	--	--	--	LPH in well
4/28/1993	82.01	9.44	0.03	72.59	-0.29	--	--	--	--	--	--	--	--	LPH in well
5/12/1993	82.01	9.57	0.03	72.46	-0.13	--	--	--	--	--	--	--	--	LPH in well
5/25/1993	82.01	9.45	0.03	72.58	0.12	--	--	--	--	--	--	--	--	LPH in well
6/7/1993	81.41	8.94	0	72.47	-0.11	--	--	--	--	--	--	--	--	
6/23/1993	81.41	9.20	0.02	72.23	-0.24	--	--	--	--	--	--	--	--	LPH in well
7/8/1993	81.41	9.31	0.03	72.12	-0.10	--	--	--	--	--	--	--	--	LPH in well
7/22/1993	81.41	9.47	0	71.94	-0.18	--	--	--	--	--	--	--	--	
8/11/1993	81.41	9.59	0	71.82	-0.12	--	--	--	--	--	--	--	--	
8/25/1993	81.41	9.67	0.03	71.76	-0.06	--	--	--	--	--	--	--	--	LPH in well
9/8/1993	81.41	10.34	0	71.07	-0.69	--	--	--	--	--	--	--	--	
9/22/1993	81.41	9.84	0.02	71.59	0.51	--	--	--	--	--	--	--	--	LPH in well
10/7/1993	81.41	9.87	0	71.54	-0.05	--	--	--	--	--	--	--	--	
10/28/1993	81.41	10.03	0	71.38	-0.16	--	--	--	--	--	--	--	--	
11/12/1993	81.41	9.76	0	71.65	0.27	--	--	--	--	--	--	--	--	
11/30/1993	81.41	9.66	0.02	71.76	0.11	--	--	--	--	--	--	--	--	LPH in well
2/16/1994	81.41	8.87	0	72.54	0.78	57000	--	910	2500	2100	9000	--	--	Sheen
5/31/1994	81.41	9.48	0	71.93	-0.61	39000	--	670	630	1500	6200	--	--	
8/31/1994	81.41	10.08	0	71.33	-0.60	44000	--	500	240	1400	5700	--	--	
9/24/1994	81.41	10.22	0	71.19	-0.14	--	--	--	--	--	--	--	--	
10/11/1994	81.41	10.41	0.01	71.01	-0.18	--	--	--	--	--	--	--	--	LPH in well
11/10/1994	81.41	7.47	0	73.94	2.93	86000	--	3300	3800	1800	8300	--	--	Sheen
2/7/1995	81.41	8.05	0	73.36	-0.58	45000	--	1400	1300	1500	5600	--	--	
3/14/1995	81.41	7.05	0	74.36	1.00	--	--	--	--	--	--	--	--	
5/3/1995	81.41	7.91	0	73.50	-0.86	26000	--	740	990	1100	4400	--	--	
8/3/1995	81.41	9.28	0	72.13	-1.37	18000	--	59	ND	530	1900	--	--	
8/19/1995	81.41	--	0	--	--	--	--	--	--	--	--	--	--	
11/7/1995	81.41	10.79	0	70.62	--	17000	--	110	26	400	1500	880	--	
5/6/1996	81.41	9.44	0	71.97	1.35	5100	--	48	ND	87	210	370	--	Sheen
11/5/1996	81.41	10.64	0	70.77	-1.20	35000	--	2200	ND	1200	2800	460	--	
5/15/1997	81.41	9.61	0	71.80	1.03	2400	--	110	ND	ND	140	100	--	
11/12/1997	81.41	9.18	0	72.23	0.43	29000	--	2000	ND	1800	3000	ND	--	
5/4/1998	81.41	9.50	0	71.91	-0.32	8200	--	430	ND	310	320	ND	--	
11/11/1998	81.41	9.25	0	72.16	0.25	8700	--	500	ND	330	310	ND	--	
5/20/1999	81.41	8.95	0	72.46	0.30	4300	--	250	ND	ND	86	ND	--	
11/15/1999	81.41	10.35	0	71.06	-1.40	6720	--	326	ND	398	226	120	45.1	
5/22/2000	81.41	9.14	0	72.27	1.21	4000	--	99	4.5	190	75	100	94	
11/22/2000	81.41	9.33	0	72.08	-0.19	6130	--	93.7	6.71	174	47.8	212	131	



**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
7/22/1993	81.29	9.26	0	72.03	-0.36	--	--	--	--	--	--	--	--	
8/25/1993	81.29	9.45	0	71.84	-0.19	640	--	100	1.1	100	22	--	--	
9/22/1993	81.29	9.63	0	71.66	-0.18	--	--	--	--	--	--	--	--	
10/28/1993	81.29	9.62	0	71.67	0.01	--	--	--	--	--	--	--	--	
11/30/1993	81.29	9.40	0	71.89	0.22	200	--	28	ND	17	8.1	--	--	
12/21/1993	81.48	9.10	0	72.38	0.49	--	--	--	--	--	--	--	--	
2/16/1994	81.29	9.21	0	72.08	-0.30	190	--	11	0.98	21	6.6	--	--	
5/31/1994	81.29	9.11	0	72.18	0.10	1100	--	190	ND	100	58	--	--	
8/31/1994	81.29	10.01	0	71.28	-0.90	400	--	17	0.94	14	5.2	--	--	
9/27/1994	81.29	10.09	0	71.20	-0.08	--	--	--	--	--	--	--	--	
10/11/1994	81.29	11.50	0	69.79	-1.41	--	--	--	--	--	--	--	--	
11/10/1994	81.29	9.21	0	72.08	2.29	7700	--	1800	280	460	1300	--	--	
2/7/1995	81.29	7.66	0	73.63	1.55	540	--	47	ND	17	2.5	--	--	
5/3/1995	81.29	8.29	0	73.00	-0.63	160	--	8.3	0.52	1.5	3.7	--	--	
8/3/1995	81.29	8.60	0	72.69	-0.31	57	--	2.0	ND	ND	ND	--	--	
8/19/1995	81.29	--	0	--	--	--	--	--	--	--	--	--	--	
11/7/1995	81.29	10.28	0	71.01	--	ND	--	0.71	ND	ND	ND	0.86	--	
5/6/1996	81.29	8.70	0	72.59	1.58	1200	--	12	11	15	36	ND	--	
11/5/1996	81.29	10.00	0	71.29	-1.30	700	--	32	0.71	1.8	1.3	6.5	--	
5/15/1997	81.29	9.37	0	71.92	0.63	51	--	ND	ND	ND	ND	ND	ND	
11/12/1997	81.29	8.92	0	72.37	0.45	74	--	1.7	ND	ND	ND	ND	ND	
5/4/1998	81.29	9.48	0	71.81	-0.56	ND	--	ND	ND	ND	ND	ND	ND	
11/11/1998	81.29	9.13	0	72.16	0.35	ND	--	0.63	ND	ND	ND	ND	ND	
5/20/1999	81.29	8.41	0	72.88	0.72	ND	--	ND	ND	ND	ND	ND	ND	
11/15/1999	81.29	9.68	0	71.61	-1.27	ND	--	ND	ND	ND	ND	ND	ND	
5/22/2000	81.29	8.60	0	72.69	1.08	ND	--	ND	ND	ND	ND	ND	ND	
11/22/2000	81.29	8.91	0	72.38	-0.31	ND	--	ND	ND	ND	ND	ND	ND	
5/15/2001	81.29	8.66	0	72.63	0.25	ND	--	ND	1.10	ND	1.16	ND	ND	
11/23/2001	81.29	8.84	0	72.45	-0.18	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
5/24/2002	81.29	7.93	0	73.36	0.91	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	9.6	3.5	
11/29/2002	81.29	9.34	0	71.95	-1.41	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.6	
5/15/2003	81.29	7.87	0	73.42	1.47	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
11/4/2003	81.48	9.45	0	72.03	-1.39	--	61	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
5/24/2004	81.48	8.49	0	72.99	0.96	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
11/29/2004	81.48	9.01	0	72.47	-0.52	--	120	ND<0.50	ND<0.50	0.52	ND<1.0	--	0.55	
6/24/2005	81.48	7.81	0	73.67	1.20	--	90	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
12/15/2005	81.48	8.73	0	72.75	-0.92	--	170	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.65	
6/14/2006	81.48	7.43	0	74.05	1.30	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	







**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	Ground- LPH Thickness (feet)	Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
11/29/2004	81.38	9.16	0.21	72.38	0.14	--	--	--	--	--	--	--	--	LPH in well
6/24/2005	81.38	8.41	0	72.97	0.59	--	53000	560	230	1600	5100	--	82	
12/15/2005	81.38	8.96	0	72.42	-0.55	--	27000	130	ND<25	560	1800	--	120	
6/14/2006	81.38	8.41	0	72.97	0.55	--	11000	110	ND<12	360	640	--	48	
12/21/2006	81.38	9.65	0	71.73	-1.24	--	78000	490	43	1400	4300	--	96	
6/28/2007	81.38	9.99	0.29	71.61	-0.12	--	--	--	--	--	--	--	--	LPH in well
12/13/2007	81.38	10.12	0.17	71.39	-0.22	--	--	--	--	--	--	--	--	LPH in well
6/9/2008	81.38	10.12	0.17	71.39	0.00	--	--	--	--	--	--	--	--	LPH in well
12/30/2008	81.38	9.33	0.13	72.15	0.76	--	--	--	--	--	--	--	--	LPH in well
9/28/2009	81.38	9.77	0.01	71.62	-0.53	--	--	--	--	--	--	--	--	LPH in well
12/15/2009	81.38	8.87	0.01	72.52	0.90	--	--	--	--	--	--	--	--	LPH in well
6/28/2010	81.38	9.82	0.5	71.93	-0.58	--	--	--	--	--	--	--	--	LPH in well
12/29/2010	81.38	8.69	1.49	73.81	1.87	--	--	--	--	--	--	--	--	LPH in well
<b>MW-6</b>														
11/7/1990	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/25/1991	--	--	--	--	--	ND	--	0.37	0.4	0.35	1.5	--	--	
5/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	0.42	--	--	
8/28/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/19/1991	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
2/6/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
5/23/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
8/26/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
11/20/1992	--	--	--	--	--	ND	--	ND	ND	ND	ND	--	--	
12/21/1992	80.47	7.71	0	72.76	--	--	--	--	--	--	--	--	--	
1/30/1993	80.47	7.25	0	73.22	0.46	--	--	--	--	--	--	--	--	
2/24/1993	80.47	6.74	0	73.73	0.51	ND	--	ND	ND	ND	ND	--	--	
3/22/1993	80.47	5.85	0	74.62	0.89	--	--	--	--	--	--	--	--	
4/28/1993	80.47	7.58	0	72.89	-1.73	--	--	--	--	--	--	--	--	
5/25/1993	80.47	7.48	0	72.99	0.10	ND	--	ND	ND	ND	ND	--	--	
6/23/1993	79.94	7.34	0	72.60	-0.39	--	--	--	--	--	--	--	--	
7/22/1993	79.94	7.53	0	72.41	-0.19	--	--	--	--	--	--	--	--	
8/25/1993	79.94	7.66	0	72.28	-0.13	ND	--	ND	ND	ND	ND	--	--	
9/22/1993	79.94	7.76	0	72.18	-0.10	--	--	--	--	--	--	--	--	
10/28/1993	79.94	8.30	0	71.64	-0.54	--	--	--	--	--	--	--	--	
11/30/1993	79.94	7.40	0	72.54	0.90	--	--	--	--	--	--	--	--	
2/16/1994	79.94	7.13	0	72.81	0.27	ND	--	ND	ND	ND	ND	--	--	
5/31/1994	79.94	7.49	0	72.45	-0.36	--	--	--	--	--	--	--	--	
8/31/1994	79.94	7.93	0	72.01	-0.44	ND	--	ND	1.5	ND	1.6	--	--	



**Table 2  
CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
9/27/1994	79.94	8.03	0	71.91	-0.10	--	--	--	--	--	--	--	--	
10/11/1994	79.94	8.05	0	71.89	-0.02	--	--	--	--	--	--	--	--	
11/10/1994	79.94	6.12	0	73.82	1.93	--	--	--	--	--	--	--	--	
2/7/1995	79.94	6.65	0	73.29	-0.53	ND	--	ND	ND	ND	ND	--	--	
5/3/1995	79.94	6.47	0	73.47	0.18	ND	--	ND	ND	ND	1.0	--	--	
8/3/1995	79.94	7.28	0	72.66	-0.81	--	--	--	--	--	--	--	--	
11/7/1995	79.94	7.98	0	71.96	-0.70	ND	--	ND	ND	ND	ND	--	--	
5/6/1996	79.94	7.80	0	72.14	0.18	--	--	--	--	--	--	--	--	
11/5/1996	79.94	7.63	0	72.31	0.17	--	--	--	--	--	--	--	--	
5/15/1997	79.94	7.41	0	72.53	0.22	--	--	--	--	--	--	--	--	
11/12/1997	79.94	7.51	0	72.43	-0.10	--	--	--	--	--	--	--	--	
5/4/1998	79.94	7.15	0	72.79	0.36	--	--	--	--	--	--	--	--	
11/11/1998	79.94	7.04	0	72.90	0.11	--	--	--	--	--	--	--	--	
5/20/1999	79.94	7.00	0	72.94	0.04	--	--	--	--	--	--	--	--	
11/15/1999	79.94	7.42	0	72.52	-0.42	--	--	--	--	--	--	--	--	
5/22/2000	79.94	7.24	0	72.70	0.18	--	--	--	--	--	--	--	--	
11/22/2000	79.94	7.40	0	72.54	-0.16	--	--	--	--	--	--	--	--	
5/15/2001	79.94	7.12	0	72.82	0.28	--	--	--	--	--	--	--	--	
11/23/2001	79.94	7.19	0	72.75	-0.07	--	--	--	--	--	--	--	--	
5/24/2002	79.94	6.54	0	73.40	0.65	--	--	--	--	--	--	--	--	
11/29/2002	79.94	7.26	0	72.68	-0.72	--	--	--	--	--	--	--	--	
5/15/2003	79.94	6.26	0	73.68	1.00	--	--	--	--	--	--	--	--	
11/4/2003	79.94	7.80	0	72.14	-1.54	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.4	
5/24/2004	79.94	7.54	0	72.40	0.26	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	2.8	
11/29/2004	79.94	7.01	0	72.93	0.53	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	4.8	
6/24/2005	79.94	7.68	0	72.26	-0.67	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.47	
12/15/2005	79.94	7.49	0	72.45	0.19	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.88	
6/14/2006	79.94	6.45	0	73.49	1.04	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	3.0	
12/21/2006	79.94	6.91	0	73.03	-0.46	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.0	
6/28/2007	79.94	7.46	0	72.48	-0.55	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	1.2	
12/13/2007	79.94	7.41	0	72.53	0.05	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.64	
6/9/2008	79.94	8.20	0	71.74	-0.79	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.65	
12/30/2008	79.94	7.47	0	72.47	0.73	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
9/28/2009	79.94	7.96	0	71.98	-0.49	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	0.67	
12/15/2009	79.94	7.22	0	72.72	0.74	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
6/28/2010	79.94	7.68	0	72.26	-0.46	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
12/29/2010	79.94	5.93	0	74.01	1.75	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	

MW-7





**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
3/9/1993	81.71	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
3/22/1993	81.71	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
4/8/1993	81.71	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
4/28/1993	81.71	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
5/12/1993	81.71	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
5/25/1993	81.71	10.12	0	71.59	--	1200	--	5.4	ND	9.0	21	--	--	
6/7/1993	81.41	9.98	0	71.43	-0.16	--	--	--	--	--	--	--	--	
6/23/1993	81.41	10.36	0	71.05	-0.38	--	--	--	--	--	--	--	--	
7/8/1993	81.41	10.52	0	70.89	-0.16	--	--	--	--	--	--	--	--	
7/22/1993	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
8/11/1993	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
8/25/1993	81.41	10.95	0	70.46	--	1800	--	11	17	8.9	29	--	--	
9/8/1993	81.41	11.34	0	70.07	-0.39	--	--	--	--	--	--	--	--	
9/22/1993	81.41	11.13	0	70.28	0.21	--	--	--	--	--	--	--	--	
10/7/1993	81.41	10.96	0	70.45	0.17	--	--	--	--	--	--	--	--	
10/28/1993	81.41	11.19	0	70.22	-0.23	--	--	--	--	--	--	--	--	
11/12/1993	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible
11/30/1993	81.41	10.42	0	70.99	--	3500	--	18	ND	ND	ND	--	--	
2/16/1994	81.41	9.86	0	71.55	0.56	990	--	4.9	1.8	2.4	4.5	--	--	
5/31/1994	81.41	10.61	0	70.80	-0.75	350	--	3.0	1.0	0.73	1.7	--	--	
8/31/1994	81.41	11.37	0	70.04	-0.76	1800	--	ND	ND	ND	ND	--	--	
9/27/1994	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
10/11/1994	81.41	11.50	0	69.91	--	--	--	--	--	--	--	--	--	
11/10/1994	81.41	7.81	0	73.60	3.69	940	--	6.7	6.3	ND	16	--	--	
2/7/1995	81.41	8.69	0	72.72	-0.88	230	--	1.4	0.95	0.9	1.1	--	--	
5/3/1995	81.41	8.60	0	72.81	0.09	75	--	ND	ND	ND	1.0	--	--	
8/3/1995	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
11/7/1995	81.41	11.05	0	70.36	--	210	--	1.3	1.2	ND	ND	--	--	
5/6/1996	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
11/5/1996	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
5/15/1997	81.41	10.46	0	70.95	--	ND	--	ND	ND	ND	ND	43	--	
11/12/1997	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
5/4/1998	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
11/11/1998	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
5/20/1999	81.41	9.75	0	71.66	--	ND	--	ND	ND	ND	ND	23	10	
11/15/1999	81.41	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
5/22/2000	81.41	9.80	0	71.61	--	ND	--	ND	1.9	ND	3.3	ND	--	
11/22/2000	81.41	9.76	0	71.65	0.04	ND	--	ND	1.16	ND	1.22	ND	--	



**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
8/25/1993	80.53	10.44	0	70.09	-0.34	220	--	10	ND	6.8	1.4	--	--	
9/22/1993	80.53	10.64	0	69.89	-0.20	--	--	--	--	--	--	--	--	
10/28/1993	80.53	10.68	0	69.85	-0.04	--	--	--	--	--	--	--	--	
11/30/1993	80.53	9.87	0	70.66	0.81	200	--	5.6	ND	2.9	2.7	--	--	
2/16/1994	80.53	9.21	0	71.32	0.66	250	--	5.1	1.3	4.4	1.5	--	--	
5/31/1994	80.53	10.15	0	70.38	-0.94	360	--	7.8	0.97	4.6	2.2	--	--	
8/31/1994	80.53	10.97	0	69.56	-0.82	650	--	7.7	2.8	4.4	5.0	59	--	
9/27/1994	80.53	11.10	0	69.43	-0.13	--	--	--	--	--	--	--	--	
10/11/1994	80.53	11.20	0	69.33	-0.10	--	--	--	--	--	--	--	--	
11/10/1994	80.53	7.25	0	73.28	3.95	ND	--	ND	ND	ND	ND	--	--	
2/7/1995	80.53	7.76	0	72.77	-0.51	57	--	0.7	ND	0.86	ND	--	--	
5/3/1995	80.53	7.82	0	72.71	-0.06	ND	--	0.85	0.67	1.3	1.0	--	--	
8/3/1995	80.53	9.70	0	70.83	-1.88	91	--	1.1	ND	ND	ND	--	--	
11/7/1995	80.53	10.64	0	69.89	-0.94	130	--	1.5	0.62	0.71	ND	60	--	
5/6/1996	80.53	9.01	0	71.52	1.63	860	--	6.1	13	6.0	25	ND	--	
11/5/1996	80.53	11.42	0	69.11	-2.41	84	--	0.74	ND	1.2	4.5	ND	--	
5/15/1997	80.53	9.89	0	70.64	1.53	ND	--	ND	ND	ND	ND	ND	--	
11/12/1997	80.53	10.22	0	70.31	-0.33	ND	--	0.55	ND	ND	ND	74	--	
5/4/1998	80.53	10.05	0	70.48	0.17	ND	--	ND	ND	ND	ND	45	--	
11/11/1998	80.53	9.23	0	71.30	0.82	ND	--	ND	ND	ND	ND	ND	--	
5/20/1999	80.53	8.78	0	71.75	0.45	ND	--	ND	ND	ND	ND	ND	--	
11/15/1999	80.53	9.12	0	71.41	-0.34	ND	--	ND	ND	ND	ND	ND	--	
5/22/2000	80.53	9.17	0	71.36	-0.05	ND	--	ND	1.9	ND	3.5	ND	--	
11/22/2000	80.53	9.08	0	71.45	0.09	ND	--	ND	1.18	ND	1.16	ND	--	
5/15/2001	80.53	8.85	0	71.68	0.23	ND	--	ND	ND	ND	ND	ND	--	
11/23/2001	80.53	9.10	0	71.43	-0.25	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
5/24/2002	80.53	8.79	0	71.74	0.31	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
11/29/2002	80.53	9.24	0	71.29	-0.45	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
5/15/2003	80.53	8.56	0	71.97	0.68	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
11/4/2003	80.53	--	--	--	--	--	--	--	--	--	--	--	--	Car parked over well
5/24/2004	80.53	9.38	0	71.15	--	--	330	1.8	ND<0.50	ND<0.50	ND<1.0	--	160	
11/29/2004	80.53	9.55	0	70.98	-0.17	--	690	0.72	ND<0.50	1.3	ND<1.0	--	160	
6/24/2005	80.53	8.65	0	71.88	0.90	--	240	0.80	ND<0.50	0.55	ND<1.0	--	67	
12/15/2005	80.53	9.43	0	71.10	-0.78	--	400	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	82	
6/14/2006	80.53	9.43	0	71.10	0.00	--	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	5.2	
12/21/2006	80.53	9.01	0	71.52	0.42	--	580	ND<0.50	ND<0.50	0.71	ND<0.50	--	36	
6/28/2007	80.53	11.64	0	68.89	-2.63	--	1200	0.81	ND<0.50	ND<0.50	0.54	--	52	
12/13/2007	80.53	11.18	0	69.35	0.46	--	1100	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	31	







**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	Ground-LPH Thickness (feet)	Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
8/25/1993	78.18	14.10	0	64.08	1.36	ND	--	ND	ND	ND	ND	--	--	
9/22/1993	78.18	15.03	0	63.15	-0.93	--	--	--	--	--	--	--	--	
10/28/1993	78.18	13.84	0	64.34	1.19	--	--	--	--	--	--	--	--	
11/30/1993	78.18	13.04	0	65.14	0.80	ND	--	ND	ND	ND	ND	--	--	
2/16/1994	78.18	12.76	0	65.42	0.28	ND	--	ND	ND	ND	ND	--	--	
5/31/1994	78.18	12.79	0	65.39	-0.03	ND	--	ND	ND	ND	ND	--	--	
8/31/1994	78.18	12.97	0	65.21	-0.18	ND	--	ND	1.5	ND	1.8	--	--	
9/27/1994	78.18	14.88	0	63.30	-1.91	--	--	--	--	--	--	--	--	
10/11/1994	78.18	13.40	0	64.78	1.48	--	--	--	--	--	--	--	--	
11/10/1994	78.18	13.57	0	64.61	-0.17	ND	--	ND	ND	ND	ND	--	--	
2/7/1995	78.18	12.28	0	65.90	1.29	--	--	--	--	--	--	--	--	Sampled semi-annually
5/3/1995	78.18	9.28	0	68.90	3.00	ND	--	ND	ND	ND	ND	--	--	
8/3/1995	78.18	12.67	0	65.51	-3.39	--	--	--	--	--	--	--	--	
11/7/1995	78.18	12.28	0	65.90	0.39	ND	--	ND	ND	ND	ND	--	--	
5/6/1996	78.18	13.30	0	64.88	-1.02	--	--	--	--	--	--	--	--	Sampling discontinued
11/5/1996	78.18	10.90	0	67.28	2.40	--	--	--	--	--	--	--	--	
5/15/1997	78.18	11.65	0	66.53	-0.75	--	--	--	--	--	--	--	--	
11/12/1997	78.18	9.66	0	68.52	1.99	--	--	--	--	--	--	--	--	
5/4/1998	78.18	10.87	0	67.31	-1.21	--	--	--	--	--	--	--	--	
11/11/1998	78.18	11.40	0	66.78	-0.53	--	--	--	--	--	--	--	--	
5/20/1999	78.18	10.71	0	67.47	0.69	ND	--	ND	ND	ND	ND	ND	ND	
11/15/1999	78.18	11.32	0	66.86	-0.61	ND	--	ND	1.04	ND	ND	ND	--	
5/22/2000	78.18	10.98	0	67.20	0.34	ND	--	ND	ND	ND	ND	ND	--	
11/22/2000	78.18	11.17	0	67.01	-0.19	ND	--	ND	ND	ND	ND	ND	--	
5/15/2001	78.18	10.93	0	67.25	0.24	ND	--	ND	ND	ND	ND	ND	--	
11/23/2001	78.18	11.08	0	67.10	-0.15	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
5/24/2002	78.18	10.58	0	67.60	0.50	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
11/29/2002	78.18	11.27	0	66.91	-0.69	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
5/15/2003	78.18	10.25	0	67.93	1.02	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
11/4/2003	78.18	11.23	0	66.95	-0.98	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<2.0	
5/24/2004	78.18	10.10	0	68.08	1.13	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
11/29/2004	78.18	10.96	0	67.22	-0.86	--	63	ND<0.50	ND<0.50	1.0	2.5	--	ND<0.50	
6/24/2005	78.18	14.07	0	64.11	-3.11	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
12/15/2005	78.18	13.28	0	64.90	0.79	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
6/14/2006	78.18	12.53	0	65.65	0.75	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	
12/21/2006	78.18	12.78	0	65.40	-0.25	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	ND<0.50	
6/28/2007	78.18	--	--	--	--	--	--	--	--	--	--	--	--	Bus parked over well
12/13/2007	78.18	15.37	0	62.81	--	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	ND<0.50	





**Table 2  
CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	Ground-LPH Thickness (feet)	Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
11/10/1994	80.63	6.34	0	74.29	3.27	--	--	--	--	--	--	--	--	
2/7/1995	80.63	7.18	0	73.45	-0.84	--	--	--	--	--	--	--	--	
3/14/1995	80.63	6.01	0	74.62	1.17	--	--	--	--	--	--	--	--	
11/7/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	
10/15/2001	80.63	8.43	0	72.20	--	--	--	--	--	--	--	--	--	
11/23/2001	80.63	8.57	0	72.06	-0.14	--	--	--	--	--	--	--	--	
12/10/2001	80.63	8.51	0	72.12	0.06	--	--	--	--	--	--	--	--	
1/14/2002	80.63	8.13	0	72.50	0.38	--	--	--	--	--	--	--	--	
2/22/2002	80.63	6.18	0	74.45	1.95	--	--	--	--	--	--	--	--	
3/11/2002	80.63	6.31	0	74.32	-0.13	--	--	--	--	--	--	--	--	
4/15/2002	80.63	6.39	0	74.24	-0.08	--	--	--	--	--	--	--	--	
5/24/2002	80.63	8.14	0	72.49	-1.75	--	--	--	--	--	--	--	--	
6/17/2002	80.63	8.18	0	72.45	-0.04	--	--	--	--	--	--	--	--	
7/15/2002	80.63	8.29	0	72.34	-0.11	--	--	--	--	--	--	--	--	
8/19/2002	80.63	8.44	0	72.19	-0.15	--	--	--	--	--	--	--	--	
9/5/2002	80.63	8.47	0	72.16	-0.03	--	--	--	--	--	--	--	--	
10/7/2002	80.63	8.43	0	72.20	0.04	--	--	--	--	--	--	--	--	
11/29/2002	80.63	8.92	0	71.71	-0.49	--	--	--	--	--	--	--	--	
12/12/2002	80.63	8.87	0	71.76	0.05	--	--	--	--	--	--	--	--	
1/6/2003	80.63	8.66	0	71.97	0.21	--	--	--	--	--	--	--	--	
2/12/2003	80.63	8.39	0	72.24	0.27	--	--	--	--	--	--	--	--	
3/13/2003	80.63	8.06	0	72.57	0.33	--	--	--	--	--	--	--	--	
4/7/2003	80.63	8.09	0	72.54	-0.03	--	--	--	--	--	--	--	--	
5/15/2003	80.63	8.07	0	72.56	0.02	--	--	--	--	--	--	--	--	
6/12/2003	80.63	8.11	0	72.52	-0.04	--	--	--	--	--	--	--	--	
7/7/2003	80.63	8.13	0	72.50	-0.02	--	--	--	--	--	--	--	--	
8/14/2003	80.63	8.23	0	72.40	-0.10	--	--	--	--	--	--	--	--	
9/12/2003	80.63	8.29	0	72.34	-0.06	--	--	--	--	--	--	--	--	
11/4/2003	80.63	9.97	0	70.66	-1.68	--	2600	11	ND<10	ND<10	ND<20	--	210	
5/24/2004	80.63	8.31	0	72.32	1.66	--	3100	20	ND<5.0	16	ND<10	--	200	
11/29/2004	80.63	8.23	0	72.40	0.08	--	4500	46	ND<1.0	34	3.6	--	140	
6/24/2005	80.63	7.53	0	73.10	0.70	--	2000	20	0.87	50	3.0	--	56	
12/15/2005	80.63	8.11	0	72.52	-0.58	--	3300	37	0.70	35	4.7	--	44	
6/14/2006	80.63	7.41	0	73.22	0.70	--	1500	2.0	0.95	6.9	ND<1.0	--	21	
12/21/2006	80.63	7.78	0	72.85	-0.37	--	3100	21	0.65	56	5.4	--	27	
6/28/2007	80.63	9.09	0	71.54	-1.31	--	2800	46	0.96	44	2.6	--	65	
12/13/2007	80.63	9.21	0	71.42	-0.12	--	9100	190	2.1	400	81	--	30	
6/9/2008	80.63	9.30	0	71.33	-0.09	--	5400	23	ND<2.5	330	13	--	39	

**Table 2**  
**CURRENT FLUID LEVELS AND SELECTED ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TOC Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Ground-Water Elevation (feet)	Change in Elevation (feet)	TPH-G 8015 (µg/l)	TPH-G (GC/MS) (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)	MTBE (8021B) (µg/l)	MTBE (8260B) (µg/l)	Comments
12/30/2008	80.63	8.23	0	72.40	1.07	--	5800	130	ND<2.5	270	58	--	22	
9/28/2009	80.63	9.10	0	71.53	-0.87	--	3400	3.8	ND<2.5	23	5.0	--	21	
12/15/2009	80.63	7.96	0	72.67	1.14	--	9100	18	ND<2.5	450	160	--	ND<2.5	
6/28/2010	80.63	8.68	0	71.95	-0.72	--	2300	20	1.0	56	ND<1.0	--	5.6	
12/29/2010	80.63	6.04	0	74.59	2.64	--	4100	9.3	1.3	6.8	ND<1.0	--	1.6	















**Table 2a**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	EDB (504) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Post-purge Dissolved Oxygen (mg/l)	Pre-purge Dissolved Oxygen (mg/l)	Comments
5/4/1998	--	--	--	--	--	--	--	--	--	2.94	
5/20/1999	--	--	--	--	--	--	--	--	--	3.22	
11/4/2003	--	ND<500	--	--	--	--	--	--	--	--	
5/24/2004	--	ND<50	--	--	--	--	--	--	--	--	
11/29/2004	--	ND<50	--	--	--	--	--	--	--	--	
6/24/2005	--	ND<1000	--	--	--	--	--	--	--	--	
12/15/2005	--	ND<250	--	--	--	--	--	--	--	--	
6/14/2006	--	ND<250	--	--	--	--	--	--	--	--	
12/21/2006	--	ND<250	--	--	--	--	--	--	--	--	
12/13/2007	--	ND<250	--	--	--	--	--	--	--	--	
6/9/2008	--	ND<250	--	--	--	--	--	--	--	--	
12/30/2008	--	ND<250	--	--	--	--	--	--	--	--	
9/28/2009	--	ND<250	--	--	--	--	--	--	--	--	
6/28/2010	--	ND<250	ND<0.50	--	ND<0.50	--	--	--	--	--	
12/29/2010	ND<10	ND<250	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	
<b>MW-12</b>											
5/15/1997	--	--	--	--	--	--	--	--	--	2.10	
5/4/1998	--	--	--	--	--	--	--	--	--	3.41	
11/4/2003	ND<100	ND<500	--	--	--	ND<2.0	ND<2.0	ND<2.0	--	--	
5/24/2004	ND<5.0	ND<50	ND<0.50	--	ND<0.50	ND<1.0	ND<0.50	ND<0.50	--	--	
11/29/2004	ND<5.0	ND<50	ND<0.50	--	ND<0.50	ND<1.0	ND<0.50	ND<0.50	--	--	
6/24/2005	--	ND<1000	--	--	--	--	--	--	--	--	
12/15/2005	--	ND<250	--	--	--	--	--	--	--	--	
6/14/2006	--	ND<250	--	--	--	--	--	--	--	--	
12/21/2006	--	ND<250	--	--	--	--	--	--	--	--	
6/28/2007	--	ND<250	--	--	--	--	--	--	--	--	
12/13/2007	--	ND<250	--	--	--	--	--	--	--	--	
6/9/2008	--	ND<250	--	--	--	--	--	--	--	--	
12/30/2008	--	ND<250	--	--	--	--	--	--	--	--	
9/28/2009	--	ND<250	--	--	--	--	--	--	--	--	
12/15/2009	--	ND<250	--	--	--	--	--	--	--	--	
6/28/2010	--	ND<250	ND<0.50	ND<0.010	ND<0.50	--	--	--	--	--	
12/29/2010	ND<10	ND<250	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	
<b>RW-1</b>											
11/7/1995	--	--	--	--	--	--	--	--	2.13	--	

**Table 2a**  
**ADDITIONAL CURRENT ANALYTICAL RESULTS**

**76 Station 0746**

Date Sampled	TBA (µg/l)	Ethanol (8260B) (µg/l)	Ethylene- dibromide (EDB) (µg/l)	EDB (504) (µg/l)	1,2-DCA (EDC) (µg/l)	DIPE (µg/l)	ETBE (µg/l)	TAME (µg/l)	Post-purge Dissolved Oxygen (mg/l)	Pre-purge Dissolved Oxygen (mg/l)	Comments
11/4/2003	ND<2000	ND<10000	--	--	--	ND<40	ND<40	ND<40	--	--	
5/24/2004	ND<50	ND<500	ND<5.0	--	ND<5.0	ND<10	ND<5.0	ND<5.0	--	--	
11/29/2004	38	ND<100	ND<1.0	--	ND<1.0	ND<2.0	ND<1.0	1.3	--	--	
6/24/2005	--	ND<1000	--	--	--	--	--	--	--	--	
12/15/2005	ND<10	ND<250	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	
6/14/2006	--	ND<250	--	--	--	--	--	--	--	--	
12/21/2006	34	ND<250	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	
6/28/2007	--	ND<250	--	--	--	--	--	--	--	--	
12/13/2007	--	ND<500	--	--	--	--	--	--	--	--	
6/9/2008	--	ND<1200	--	--	--	--	--	--	--	--	
12/30/2008	--	ND<1200	--	--	--	--	--	--	--	--	
9/28/2009	--	ND<1200	--	--	--	--	--	--	--	--	
12/15/2009	--	ND<1200	--	--	--	--	--	--	--	--	
6/28/2010	--	ND<250	ND<0.50	--	ND<0.50	--	--	--	--	--	
12/29/2010	ND<10	ND<250	ND<0.50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	--	

ARCADIS

**Attachment C**

Laboratory Report and Chain-of-Custody Documentation



Date of Report: 12/20/2011

Kathy Brandt

Arcadis

1900 Powell Street 12th Floor  
Emeryville, CA 94608

Project: 0746  
BC Work Order: 1120284  
Invoice ID: B113491

Enclosed are the results of analyses for samples received by the laboratory on 12/9/2011. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014



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CHAIN OF CUSTODY FORM

Union Oil Company of California ■ 6101 Bollinger Canyon Road ■ San Ramon, CA 94583

COC 1 of 1

#1120284

Union Oil Site ID: <u>0746</u>	Union Oil Consultant: <u>Arcadis</u>	ANALYSES REQUIRED TPH - Diesel by EPA 8015 TPH - G by GC/MS (CG-C12) BTEX/MTBE/PAHs by EPA 8260B Ethanol by EPA 8260B, EDB/ECB/PCP EPA 8260B Full List with OXYS Nitrate, Sulfate, Alkalinity Total Iron Sulfide	Turnaround Time (TAT): Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Special Instructions "Run 8 OXYS by 8260 on all MTBE hits."
Site Global ID: <u>T0600101471</u>	Consultant Contact: <u>Kathy Brandt</u>		
Site Address: <u>3943 Broadway</u>	Consultant Phone No.: <u>510-596-9675</u>		
Union Oil PM: <u>Roya Kambin</u>	Sampling Company: <u>TRC</u>		
Union Oil PM Phone No.: <u>925-790-6270</u>	Sampled By (PRINT): <u>Basilio / Joe</u>		
Charge Code: <u>NWRTB-03516470-LAB</u>	Sampler Signature: <u>[Signature]</u>	This is a LEGAL document. ALL fields must be filled out CORRECTLY and COMPLETELY. BC Laboratories, Inc. Project Manager: Molly Meyers 4100 Atlas Court, Bakersfield, CA 93308 Phone No. 661-327-4911	

SAMPLE ID				Sample Time	# of Containers	TPH - Diesel by EPA 8015	TPH - G by GC/MS (CG-C12)	BTEX/MTBE/PAHs by EPA 8260B	Ethanol by EPA 8260B, EDB/ECB/PCP	EPA 8260B Full List with OXYS	Nitrate, Sulfate, Alkalinity	Total Iron	Sulfide	Notes / Comments				
Field Point Name	Matrix	DTW	Date (yy/mm/dd)											NO <sub>2</sub>	NO	OP	SS	
<del>1</del> <u>1</u> MW-4	W-S-A		<u>12/9/11</u>	<u>0953</u>	<u>6</u>													
<u>2</u> MW-11	W-S-A			<u>1042</u>	<u>6</u>													
<u>3</u> MW-10	W-S-A			<u>0843</u>	<u>3</u>													
<u>4</u> MW-12	W-S-A			<u>1025</u>	<u>6</u>													
<u>5</u> MW-6	W-S-A			<u>0805</u>	<u>3</u>													
<u>4</u> MW-1	W-S-A			<u>0826</u>	<u>6</u>													
<u>7</u> MW-2	W-S-A			<u>0847</u>	<u>3</u>													
<u>8</u> RW-1	W-S-A			<u>1050</u>	<u>3</u>													
<u>9</u> MW-7	W-S-A			<u>0930</u>	<u>3</u>													
<u>10</u> MW-3	W-S-A			<u>1012</u>	<u>3</u>													

CHK BY [Signature]  
 DISTRIBUTION  
 SUB-OUT [ ]

Relinquished By: <u>[Signature]</u> TRC 12/9/11 1400	Relinquished By: <u>[Signature]</u> BC LABS 12-9-11 1730	Relinquished By: <u>[Signature]</u> BCL 12-9-11 2000
Received By: <u>[Signature]</u> BC LABS 12-9-11 1500	Received By: <u>[Signature]</u> BCL 12-9-11 1730	Received By: <u>[Signature]</u> BCL 12-9-11 2000

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, or third party interpretation. The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 1

Submission #: 1120284

<b>SHIPPING INFORMATION</b> Federal Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____	
--	--	---	--

Refrigerant: Ice  Blue Ice  None  Other  Comments: \_\_\_\_\_

Custody Seals Ice Chest  Containers  None  Comments: \_\_\_\_\_  
 Intact? Yes  No  Intact? Yes  No

All samples received? Yes  No  All samples containers intact? Yes  No  Description(s) match COC? Yes  No

COC Received  YES  NO Emissivity: .98 Container: PE Thermometer ID: 177 Date/Time 12-9-11 8:35  
 Temperature: A 1.6 °C / C 1.9 °C Analyst Init KIQ

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL	D	D		D		D				
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS	B	B		B		B				
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE	C	C		C		C				
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3	A 3
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments: \_\_\_\_\_  
 Sample Numbering Completed By: KIQ Date/Time: 12-9-11 @ 2:25  
 A = Actual / C = Corrected [H:\DOCS\WP\00\LAB\_DOCS\FORMS\SAMREC2.WPD]



Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1120284-01</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-4-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 09:53 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-4 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

<b>1120284-02</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-11-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 10:42 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-11 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1120284-03</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-10-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 08:43 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-10 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---



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1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1120284-04</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-12-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 10:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-12 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	--	---

<b>1120284-05</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-6-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 08:05 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-6 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

<b>1120284-06</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-1-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 08:26 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-1 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--



Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

<b>1120284-07</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-2-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 08:47 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-2 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

<b>1120284-08</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> RW-1-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 10:50 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): RW-1 Matrix: W Sample QC Type (SACode): CS Cooler ID:
-------------------	---	--

<b>1120284-09</b>	<b>COC Number:</b> --- <b>Project Number:</b> 0746 <b>Sampling Location:</b> --- <b>Sampling Point:</b> MW-7-W-111209 <b>Sampled By:</b> TRCI	<b>Receive Date:</b> 12/09/2011 20:00 <b>Sampling Date:</b> 12/09/2011 09:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Water <b>Sample Type:</b> Water Delivery Work Order: Global ID: T0600101471 Location ID (FieldPoint): MW-7 Matrix: W Sample QC Type (SACode): CS Cooler ID:
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1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information
------------	---------------------------

1120284-10

**COC Number:** ---  
**Project Number:** 0746  
**Sampling Location:** ---  
**Sampling Point:** MW-3-W-111209  
**Sampled By:** TRCI

**Receive Date:** 12/09/2011 20:00  
**Sampling Date:** 12/09/2011 10:12  
**Sample Depth:** ---  
**Lab Matrix:** Water  
**Sample Type:** Water  
Delivery Work Order:  
Global ID: T0600101471  
Location ID (FieldPoint): MW-3  
Matrix: W  
Sample QC Type (SACode): CS  
Cooler ID:



Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-01	<b>Client Sample Name:</b> 0746, MW-4-W-111209, 12/9/2011 9:53:00AM
----------------------------------	---

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
<b>Ethylbenzene</b>	<b>1.4</b>	<b>ug/L</b>	<b>0.50</b>	<b>EPA-8260</b>	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
<b>Total Purgeable Petroleum Hydrocarbons (C6-C12)</b>	<b>1900</b>	<b>ug/L</b>	<b>50</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	98.9	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	91.3	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	99.3	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 04:19	JMC	MS-V12	1	BUL1244



Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1120284-01	<b>Client Sample Name:</b> 0746, MW-4-W-111209, 12/9/2011 9:53:00AM						
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	130	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3	ND	mg/L	0.44	EPA-300.0	ND		2
Sulfate	ND	mg/L	1.0	EPA-300.0	ND		2
Total Sulfide	ND	mg/L	0.40	EPA-376.2	ND	A10	3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	12/13/11	12/13/11 10:44	RML	MET-1	1	BUL0795
2	EPA-300.0	12/09/11	12/10/11 02:43	LD1	IC5	1	BUL0700
3	EPA-376.2	12/13/11	12/13/11 13:00	DIW	MANUAL	1	BUL0863

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Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Water Analysis (Metals)

<b>BCL Sample ID:</b> 1120284-01	<b>Client Sample Name:</b> 0746, MW-4-W-111209, 12/9/2011 9:53:00AM
----------------------------------	---

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Iron	12000	ug/L	50	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	12/15/11	12/16/11 12:33	ARD	PE-OP1	1	BUL1048



Arcadis  
1900 Powell Street 12th Floor  
Emeryville, CA 94608

**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-02	<b>Client Sample Name:</b> 0746, MW-11-W-111209, 12/9/2011 10:42:00AM
----------------------------------	---

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	102	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	100	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	102	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 04:01	JMC	MS-V12	1	BUL1244



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**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1120284-02	<b>Client Sample Name:</b> 0746, MW-11-W-111209, 12/9/2011 10:42:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	270	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3	9.8	mg/L	0.44	EPA-300.0	ND		2
Sulfate	69	mg/L	1.0	EPA-300.0	ND		2
Total Sulfide	ND	mg/L	0.10	EPA-376.2	ND		3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	12/13/11	12/13/11 10:50	RML	MET-1	1	BUL0795
2	EPA-300.0	12/09/11	12/10/11 02:58	LD1	IC5	1	BUL0700
3	EPA-376.2	12/13/11	12/13/11 13:00	DIW	MANUAL	1	BUL0863



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**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Water Analysis (Metals)

<b>BCL Sample ID:</b> 1120284-02	<b>Client Sample Name:</b> 0746, MW-11-W-111209, 12/9/2011 10:42:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Iron	600	ug/L	50	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	12/15/11	12/16/11 12:35	ARD	PE-OP1	1	BUL1048



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Project: 0746  
Project Number: 351647  
Project Manager: Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-03	<b>Client Sample Name:</b> 0746, MW-10-W-111209, 12/9/2011 8:43:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	107	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	98.8	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	100	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 03:44	JMC	MS-V12	1	BUL1244

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**Project Number:** 351647  
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### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-04	<b>Client Sample Name:</b> 0746, MW-12-W-111209, 12/9/2011 10:25:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.9	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	98.1	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	98.9	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 03:27	JMC	MS-V12	1	BUL1243

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**Reported:** 12/20/2011 15:01  
Project: 0746  
Project Number: 351647  
Project Manager: Kathy Brandt

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1120284-04	<b>Client Sample Name:</b> 0746, MW-12-W-111209, 12/9/2011 10:25:00AM						
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	390	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3	0.77	mg/L	0.44	EPA-300.0	ND		2
Sulfate	9.9	mg/L	1.0	EPA-300.0	ND		2
Total Sulfide	ND	mg/L	0.10	EPA-376.2	ND		3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	12/13/11	12/13/11 11:12	RML	MET-1	1	BUL0796
2	EPA-300.0	12/09/11	12/10/11 03:12	LD1	IC5	1	BUL0700
3	EPA-376.2	12/13/11	12/13/11 13:00	DIW	MANUAL	1	BUL0863

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### Water Analysis (Metals)

<b>BCL Sample ID:</b> 1120284-04	<b>Client Sample Name:</b> 0746, MW-12-W-111209, 12/9/2011 10:25:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Iron	1000	ug/L	50	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	12/15/11	12/16/11 12:37	ARD	PE-OP1	1	BUL1048





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### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-05	<b>Client Sample Name:</b> 0746, MW-6-W-111209, 12/9/2011 8:05:00AM
----------------------------------	---

Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
<b>Methyl t-butyl ether</b>	<b>2.0</b>	<b>ug/L</b>	<b>0.50</b>	<b>EPA-8260</b>	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	104	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	96.9	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	99.6	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 03:09	JMC	MS-V12	1	BUL1243



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### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-06	<b>Client Sample Name:</b> 0746, MW-1-W-111209, 12/9/2011 8:26:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
<b>Methyl t-butyl ether</b>	<b>4.2</b>	<b>ug/L</b>	<b>0.50</b>	<b>EPA-8260</b>	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.9	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	96.5	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	101	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 02:52	JMC	MS-V12	1	BUL1243

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Project Number: 351647  
Project Manager: Kathy Brandt

### Water Analysis (General Chemistry)

<b>BCL Sample ID:</b> 1120284-06	<b>Client Sample Name:</b> 0746, MW-1-W-111209, 12/9/2011 8:26:00AM						
Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Alkalinity as CaCO3	230	mg/L	4.1	EPA-310.1	ND		1
Nitrate as NO3	2.4	mg/L	0.44	EPA-300.0	ND		2
Sulfate	21	mg/L	1.0	EPA-300.0	ND		2
Total Sulfide	ND	mg/L	0.10	EPA-376.2	ND		3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-310.1	12/13/11	12/13/11 11:26	RML	MET-1	1	BUL0796
2	EPA-300.0	12/09/11	12/10/11 03:27	LD1	IC5	1	BUL0700
3	EPA-376.2	12/13/11	12/13/11 13:00	DIW	MANUAL	1	BUL0863

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**Reported:** 12/20/2011 15:01  
**Project:** 0746  
**Project Number:** 351647  
**Project Manager:** Kathy Brandt

### Water Analysis (Metals)

<b>BCL Sample ID:</b> 1120284-06	<b>Client Sample Name:</b> 0746, MW-1-W-111209, 12/9/2011 8:26:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Total Iron	6200	ug/L	50	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	12/15/11	12/16/11 12:38	ARD	PE-OP1	1	BUL1048



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Project Number: 351647  
Project Manager: Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-07	<b>Client Sample Name:</b> 0746, MW-2-W-111209, 12/9/2011 8:47:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
<b>Methyl t-butyl ether</b>	<b>7.9</b>	<b>ug/L</b>	<b>0.50</b>	<b>EPA-8260</b>	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
Total Purgeable Petroleum Hydrocarbons (C6-C12)	ND	ug/L	50	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.4	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	98.9	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	101	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 02:35	JMC	MS-V12	1	BUL1243



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Project: 0746  
Project Number: 351647  
Project Manager: Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-08	<b>Client Sample Name:</b> 0746, RW-1-W-111209, 12/9/2011 10:50:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	240	ug/L	2.5	EPA-8260	ND	A01	1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		2
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		2
Ethylbenzene	180	ug/L	2.5	EPA-8260	ND	A01	1
Methyl t-butyl ether	ND	ug/L	0.50	EPA-8260	ND		2
Toluene	1.2	ug/L	0.50	EPA-8260	ND		2
Total Xylenes	30	ug/L	1.0	EPA-8260	ND		2
Ethanol	ND	ug/L	250	EPA-8260	ND		2
<b>Total Purgeable Petroleum Hydrocarbons (C6-C12)</b>	<b>2900</b>	<b>ug/L</b>	<b>250</b>	<b>Luft-GC/MS</b>	ND	<b>A01</b>	1
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)	EPA-8260			1
1,2-Dichloroethane-d4 (Surrogate)	100	%	76 - 114 (LCL - UCL)	EPA-8260			2
Toluene-d8 (Surrogate)	89.9	%	88 - 110 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	95.4	%	88 - 110 (LCL - UCL)	EPA-8260			2
4-Bromofluorobenzene (Surrogate)	99.1	%	86 - 115 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	91.2	%	86 - 115 (LCL - UCL)	EPA-8260			2

Run #	Method	Prep Date	Run		Instrument	Dilution	QC
			Date/Time	Analyst			Batch ID
1	EPA-8260	12/14/11	12/20/11 03:57	JMC	MS-V12	5	BUL1243
2	EPA-8260	12/14/11	12/15/11 02:17	JMC	MS-V12	1	BUL1243



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### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-09	<b>Client Sample Name:</b> 0746, MW-7-W-111209, 12/9/2011 9:30:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	EPA-8260	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	EPA-8260	ND		1
Ethylbenzene	ND	ug/L	0.50	EPA-8260	ND		1
<b>Methyl t-butyl ether</b>	<b>4.5</b>	<b>ug/L</b>	<b>0.50</b>	<b>EPA-8260</b>	ND		1
Toluene	ND	ug/L	0.50	EPA-8260	ND		1
Total Xylenes	ND	ug/L	1.0	EPA-8260	ND		1
Ethanol	ND	ug/L	250	EPA-8260	ND		1
<b>Total Purgeable Petroleum Hydrocarbons (C6-C12)</b>	<b>120</b>	<b>ug/L</b>	<b>50</b>	<b>Luft-GC/MS</b>	ND		1
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	99.0	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	110	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 02:00	JMC	MS-V12	1	BUL1243



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**Reported:** 12/20/2011 15:01  
Project: 0746  
Project Number: 351647  
Project Manager: Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

<b>BCL Sample ID:</b> 1120284-10	<b>Client Sample Name:</b> 0746, MW-3-W-111209, 12/9/2011 10:12:00AM
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Constituent	Result	Units	PQL	Method	MB Bias	Lab Quals	Run #
Benzene	11	ug/L	2.5	EPA-8260	ND	A01	1
1,2-Dibromoethane	ND	ug/L	2.5	EPA-8260	ND	A01	1
1,2-Dichloroethane	ND	ug/L	2.5	EPA-8260	ND	A01	1
Ethylbenzene	98	ug/L	2.5	EPA-8260	ND	A01	1
Methyl t-butyl ether	9.3	ug/L	2.5	EPA-8260	ND	A01	1
Toluene	ND	ug/L	2.5	EPA-8260	ND	A01	1
Total Xylenes	47	ug/L	5.0	EPA-8260	ND	A01	1
Ethanol	ND	ug/L	1200	EPA-8260	ND	A01	1
<b>Total Purgeable Petroleum Hydrocarbons (C6-C12)</b>	<b>9900</b>	<b>ug/L</b>	<b>250</b>	<b>Luft-GC/MS</b>	<b>ND</b>	<b>A01</b>	<b>1</b>
1,2-Dichloroethane-d4 (Surrogate)	103	%	76 - 114 (LCL - UCL)	EPA-8260			1
Toluene-d8 (Surrogate)	95.4	%	88 - 110 (LCL - UCL)	EPA-8260			1
4-Bromofluorobenzene (Surrogate)	97.7	%	86 - 115 (LCL - UCL)	EPA-8260			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260	12/14/11	12/15/11 01:43	JMC	MS-V12	5	BUL1243





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Project: 0746  
Project Number: 351647  
Project Manager: Kathy Brandt

### Volatile Organic Analysis (EPA Method 8260)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
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**QC Batch ID: BUL1243**

Benzene	BUL1243-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BUL1243-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BUL1243-BLK1	ND	ug/L	0.50		
Ethylbenzene	BUL1243-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BUL1243-BLK1	ND	ug/L	0.50		
Toluene	BUL1243-BLK1	ND	ug/L	0.50		
Total Xylenes	BUL1243-BLK1	ND	ug/L	1.0		
Ethanol	BUL1243-BLK1	ND	ug/L	250		
Total Purgeable Petroleum Hydrocarbons (C6-1)	BUL1243-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BUL1243-BLK1	106	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUL1243-BLK1	96.4	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUL1243-BLK1	94.6	%	86 - 115 (LCL - UCL)		

**QC Batch ID: BUL1244**

Benzene	BUL1244-BLK1	ND	ug/L	0.50		
1,2-Dibromoethane	BUL1244-BLK1	ND	ug/L	0.50		
1,2-Dichloroethane	BUL1244-BLK1	ND	ug/L	0.50		
Ethylbenzene	BUL1244-BLK1	ND	ug/L	0.50		
Methyl t-butyl ether	BUL1244-BLK1	ND	ug/L	0.50		
Toluene	BUL1244-BLK1	ND	ug/L	0.50		
Total Xylenes	BUL1244-BLK1	ND	ug/L	1.0		
Ethanol	BUL1244-BLK1	ND	ug/L	250		
Total Purgeable Petroleum Hydrocarbons (C6-1)	BUL1244-BLK1	ND	ug/L	50		
1,2-Dichloroethane-d4 (Surrogate)	BUL1244-BLK1	101	%	76 - 114 (LCL - UCL)		
Toluene-d8 (Surrogate)	BUL1244-BLK1	99.5	%	88 - 110 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BUL1244-BLK1	99.7	%	86 - 115 (LCL - UCL)		



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## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
<b>QC Batch ID: BUL1243</b>											
Benzene	BUL1243-BS1	LCS	25.650	25.000	ug/L	103		70 - 130			
Toluene	BUL1243-BS1	LCS	29.930	25.000	ug/L	120		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BUL1243-BS1	LCS	9.6800	10.000	ug/L	96.8		76 - 114			
Toluene-d8 (Surrogate)	BUL1243-BS1	LCS	10.140	10.000	ug/L	101		88 - 110			
4-Bromofluorobenzene (Surrogate)	BUL1243-BS1	LCS	9.7100	10.000	ug/L	97.1		86 - 115			
<b>QC Batch ID: BUL1244</b>											
Benzene	BUL1244-BS1	LCS	25.040	25.000	ug/L	100		70 - 130			
Toluene	BUL1244-BS1	LCS	28.820	25.000	ug/L	115		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BUL1244-BS1	LCS	10.300	10.000	ug/L	103		76 - 114			
Toluene-d8 (Surrogate)	BUL1244-BS1	LCS	10.120	10.000	ug/L	101		88 - 110			
4-Bromofluorobenzene (Surrogate)	BUL1244-BS1	LCS	9.7700	10.000	ug/L	97.7		86 - 115			



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## Volatile Organic Analysis (EPA Method 8260)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab
								Percent Recovery	RPD	
<b>QC Batch ID: BUL1243</b>		Used client sample: N								
Benzene	MS	1120243-13	ND	22.220	25.000	ug/L		88.9		70 - 130
	MSD	1120243-13	ND	24.290	25.000	ug/L	8.9	97.2	20	70 - 130
Toluene	MS	1120243-13	ND	22.160	25.000	ug/L		88.6		70 - 130
	MSD	1120243-13	ND	23.710	25.000	ug/L	6.8	94.8	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1120243-13	ND	9.6700	10.000	ug/L		96.7		76 - 114
	MSD	1120243-13	ND	9.8600	10.000	ug/L	1.9	98.6		76 - 114
Toluene-d8 (Surrogate)	MS	1120243-13	ND	9.2200	10.000	ug/L		92.2		88 - 110
	MSD	1120243-13	ND	9.3400	10.000	ug/L	1.3	93.4		88 - 110
4-Bromofluorobenzene (Surrogate)	MS	1120243-13	ND	10.040	10.000	ug/L		100		86 - 115
	MSD	1120243-13	ND	9.8800	10.000	ug/L	1.6	98.8		86 - 115
<b>QC Batch ID: BUL1244</b>		Used client sample: N								
Benzene	MS	1119798-45	ND	25.180	25.000	ug/L		101		70 - 130
	MSD	1119798-45	ND	27.760	25.000	ug/L	9.7	111	20	70 - 130
Toluene	MS	1119798-45	ND	29.380	25.000	ug/L		118		70 - 130
	MSD	1119798-45	ND	31.770	25.000	ug/L	7.8	127	20	70 - 130
1,2-Dichloroethane-d4 (Surrogate)	MS	1119798-45	ND	10.010	10.000	ug/L		100		76 - 114
	MSD	1119798-45	ND	10.350	10.000	ug/L	3.3	104		76 - 114
Toluene-d8 (Surrogate)	MS	1119798-45	ND	10.190	10.000	ug/L		102		88 - 110
	MSD	1119798-45	ND	10.230	10.000	ug/L	0.4	102		88 - 110
4-Bromofluorobenzene (Surrogate)	MS	1119798-45	ND	9.8300	10.000	ug/L		98.3		86 - 115
	MSD	1119798-45	ND	10.100	10.000	ug/L	2.7	101		86 - 115



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### Water Analysis (General Chemistry)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BUL0700</b>						
Nitrate as NO3	BUL0700-BLK1	ND	mg/L	0.44		
Sulfate	BUL0700-BLK1	ND	mg/L	1.0		
<b>QC Batch ID: BUL0795</b>						
Total Alkalinity as CaCO3	BUL0795-BLK1	ND	mg/L	4.1		
<b>QC Batch ID: BUL0796</b>						
Total Alkalinity as CaCO3	BUL0796-BLK1	ND	mg/L	4.1		
<b>QC Batch ID: BUL0863</b>						
Total Sulfide	BUL0863-BLK1	ND	mg/L	0.10		



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## Water Analysis (General Chemistry)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
<b>QC Batch ID: BUL0700</b>											
Nitrate as NO3	BUL0700-BS1	LCS	22.462	22.134	mg/L	101		90 - 110			
Sulfate	BUL0700-BS1	LCS	101.20	100.00	mg/L	101		90 - 110			
<b>QC Batch ID: BUL0795</b>											
Total Alkalinity as CaCO3	BUL0795-BS3	LCS	93.870	100.00	mg/L	93.9		90 - 110			
<b>QC Batch ID: BUL0796</b>											
Total Alkalinity as CaCO3	BUL0796-BS3	LCS	100.26	100.00	mg/L	100		90 - 110			
<b>QC Batch ID: BUL0863</b>											
Total Sulfide	BUL0863-BS1	LCS	0.51340	0.50000	mg/L	103		90 - 110			



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### Water Analysis (General Chemistry)

#### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
<b>QC Batch ID: BUL0700</b>		Used client sample: N								
Nitrate as NO3	DUP	1120282-01	2.8287	2.7712		mg/L	2.1		10	
	MS	1120282-01	2.8287	25.023	22.358	mg/L		99.3		80 - 120
	MSD	1120282-01	2.8287	25.523	22.358	mg/L	2.0	102	10	80 - 120
Sulfate	DUP	1120282-01	116.52	117.04		mg/L	0.4		10	
	MS	1120282-01	116.52	223.82	101.01	mg/L		106		80 - 120
	MSD	1120282-01	116.52	225.08	101.01	mg/L	0.6	107	10	80 - 120
<b>QC Batch ID: BUL0795</b>		Used client sample: N								
Total Alkalinity as CaCO3	DUP	1120309-02	151.98	151.98		mg/L	0		10	
<b>QC Batch ID: BUL0796</b>		Used client sample: Y - Description: MW-12-W-111209, 12/09/2011 10:25								
Total Alkalinity as CaCO3	DUP	1120284-04	387.94	388.24		mg/L	0.1		10	
<b>QC Batch ID: BUL0863</b>		Used client sample: N								
Total Sulfide	DUP	1120283-02	ND	ND		mg/L			10	
	MS	1120283-02	ND	0.44707	0.50000	mg/L		89.4		80 - 120
	MSD	1120283-02	ND	0.41863	0.50000	mg/L	6.6	83.7	10	80 - 120

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### Water Analysis (Metals)

#### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: BUL1048</b>						
Total Iron	BUL1048-BLK1	ND	ug/L	50		



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### Water Analysis (Metals)

#### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
<b>QC Batch ID: BUL1048</b>										
Total Iron	BUL1048-BS1	LCS	1044.5	1000.0	ug/L	104		85	115	





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### Water Analysis (Metals)

#### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
<b>QC Batch ID: BUL1048</b>		Used client sample: N									
Total Iron	DUP	1120204-07	203.60	203.32		ug/L	0.1		20		
	MS	1120204-07	203.60	1355.0	1000.0	ug/L		115		75 - 125	
	MSD	1120204-07	203.60	1462.4	1000.0	ug/L	7.6	126	20	75 - 125	Q03



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**Notes And Definitions**

- MDL Method Detection Limit
- ND Analyte Not Detected at or above the reporting limit
- PQL Practical Quantitation Limit
- RPD Relative Percent Difference
- A01 PQL's and MDL's are raised due to sample dilution.
- A10 PQL's and MDL's were raised due to matrix interference.
- Q03 Matrix spike recovery(s) is(are) not within the control limits.