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Alameda County  
Environmental Health

ARCADIS U.S., Inc.  
100 Montgomery Street, Suite 300  
San Francisco, California 94105  
Tel 415.374.2744  
Fax 415.374.2745  
www.arcadis-us.com

Re: First Quarter 2010 Ground-Water Monitoring Report  
Former BP Service Station #11102  
100 MacArthur Boulevard  
Oakland, California  
ACEH Case #RO0000456

ENVIRONMENTAL

"I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Date:  
04/27/2010

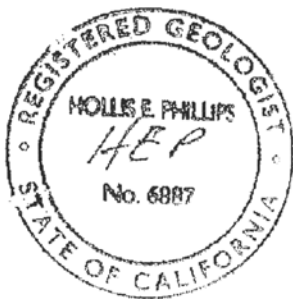
Submitted by:  
ARCADIS U.S., Inc.

Contact:  
Hollis E. Phillips

Phone:  
415.374.2744 ext 13

Hollis E. Phillips, PG  
Project Manager

Email:  
Hollis.phillips@arcadis-us.com



Our ref:  
GP09BPNA.C111

**First Quarter 2010 Ground-Water Monitoring Report**

Former BP Service Station #11102  
100 MacArthur Boulevard, Oakland, California  
ACEH Case #RO0000456

Prepared for

Ms. Hollis Phillips, PG  
Senior Geologist  
ARCADIS-US, Inc.  
100 Montgomery Street, Ste. 300  
San Francisco, California 94104

On behalf of

Atlantic Richfield Company  
PO Box 1257  
San Ramon, California 94583

Prepared by



1324 Mangrove Avenue, Suite 212  
Chico, California 95926  
(530) 566-1400  
[www.broadbentinc.com](http://www.broadbentinc.com)

27 April 2010

Project No. 09-88-643

27 April 2010

Project No. 09-88-643

ARCADIS-US, Inc.  
100 Montgomery Street, Ste. 300  
San Francisco, CA 94104

Attn.: Ms. Hollis Phillips, PG

Re: First Quarter 2010 Ground-Water Monitoring Report, Former BP Service Station #11102,  
100 MacArthur Boulevard, Alameda County, Oakland, California;  
ACEH Case #RO0000456

Dear Ms. Phillips:

Attached is the *First Quarter 2010 Ground-Water Monitoring Report* for Former BP Service Station #11102 located at 100 MacArthur Boulevard, Oakland, Alameda County, California. This report presents a summary of results from ground-water monitoring conducted at Station #11102 during the First Quarter of 2010.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.



Jason Duda  
Project Scientist



Thomas A. Venus, P.E.  
Senior Engineer



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)  
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818  
Electronic copy uploaded to GeoTracker

## STATION #11102 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #11102	Address:	100 MacArthur Boulevard, Oakland, California
ARCADIS Project Manager:		Ms. Hollis Phillips, PG
Consulting Co./Contact Persons:		Broadbent & Associates, Inc.(BAI)/Jason Duda & Tom Venus (530) 566-1400
Consultant Project No.:		09-88-643
Primary Agency/Regulatory ID No.:		Alameda County Environmental Health (ACEH) ACEH Case #RO0000456

### WORK PERFORMED THIS QUARTER (First Quarter 2010):

1. Prepared and submitted *Fourth Quarter 2009 Ground-Water Monitoring Report* (BAI, 1/28/2010).
2. Conducted ground-water monitoring/sampling for First Quarter 2010. Work performed by BAI on 26 February 2010.

### WORK PROPOSED FOR NEXT QUARTER (Second Quarter 2010):

1. Prepared and submitted *First Quarter 2010 Ground-Water Monitoring Report* (contained herein).
2. Upon acquisition of permits, conduct soil and ground-water investigation as approved by ACEH in their letter dated 21 August 2009.

### QUARTERLY RESULTS SUMMARY:

Current phase of project:	<u>Ground-Water Monitoring/Sampling/Characterization</u>
Frequency of ground-water monitoring:	<u>Semi-Annually (1Q &amp; 3Q): Wells MW-1, MW-2, MW-3</u>
Frequency of ground-water sampling:	<u>Semi-Annually (1Q &amp; 3Q): Wells MW-1, MW-2, MW-3</u>
Is free product (FP) present on-site:	<u>No</u>
Current remediation techniques:	<u>NA</u>
Depth to ground water (below TOC):	<u>10.61 (MW-1) to 12.44 (MW-3)</u>
General ground-water flow direction:	<u>West</u>
Approximate hydraulic gradient:	<u>0.05 ft/ft</u>

### DISCUSSION:

First Quarter 2010 ground-water monitoring and sampling was conducted at Station #11102 on 26 February 2010 by BAI. Water levels were gauged in each of the three wells at the Site. No irregularities were noted during water level gauging. Depths to water measurements ranged from 10.61 ft at well MW-1 to 12.44 ft at well MW-3. Resulting ground-water surface elevations ranged from 79.59 ft above datum in well MW-1 to 74.58 ft in well MW-3. Water level elevations yielded a potentiometric ground-water flow direction and gradient of 0.05 ft/ft to the west. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground-water and respective ground-water elevations are summarized in Table 1. Current and historic ground-water flow directions and gradients are provided in Table 3. A Site Location Map is provided as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Consistent with the current ground-water sampling schedule, water samples were collected from each of the three wells at the Site. No irregularities were encountered during sampling. Samples were submitted under chain-of-custody protocol to TestAmerica Laboratories, Inc. (Pleasanton, California), for

analysis of Gasoline Range Organics (GRO, C6-C12); Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX); Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), and Ethanol by EPA Method 8260B. Bio-degradation parameters were not monitored during the sampling event this quarter. No significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline range organics (GRO) were detected above the laboratory reporting limits in two of the three wells sampled at concentrations of 1,100 micrograms per liter ( $\mu\text{g/L}$ ) in well MW-2 and 1,500  $\mu\text{g/L}$  in well MW-3. TAME was detected above the laboratory reporting limits in two of the three wells sampled at concentrations of 13  $\mu\text{g/L}$  in well MW-2 and 16  $\mu\text{g/L}$  in well MW-3. TBA was detected above the laboratory reporting limit in two of the three wells sampled at concentrations of 240  $\mu\text{g/L}$  in well MW-1 and 4,100  $\mu\text{g/L}$  in well MW-2. MTBE was detected above the laboratory reporting limit in each of the wells sampled at concentrations up to 1,500  $\mu\text{g/L}$  in well MW-3. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the three wells sampled this quarter. Historic laboratory analytical results are summarized in Table 1, and Table 2. The most recent GRO, Benzene, MTBE, and TBA concentrations are also presented in Drawing 2. A summary of bio-degradation parameters is provided in Table 4. Ground-water monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

## **CONCLUSIONS AND RECOMMENDATIONS:**

Water level elevations were between historic minimum and maximum ranges for each well. The potentiometric ground-water flow direction and gradient of 0.05 ft/ft to the west is generally consistent with historical data. Detected concentrations of petroleum hydrocarbons were within the historic minimum and maximum ranges recorded for each well sampled this quarter. Overall, hydrocarbon concentrations increased in well MW-2 and remained relatively stable in wells MW-1 and MW-3 when compared to concentrations observed during the Fourth Quarter 2009 sampling event. Concentrations of GRO, MTBE and TBA are significant, justifying the efforts to characterize the downgradient extents of the contaminated ground-water plume. The *Addendum to Soil & Ground-Water Investigation Work Plan* dated 1 June 2009 was approved by ACEH in their letter dated 21 August 2009. Soil and ground-water investigation activities will be implemented upon approval of the necessary permits and access agreements.

## **CLOSURE:**

The findings presented in this report are based upon: observations of BAI field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by TestAmerica Laboratories, Inc. (Pleasanton, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of ARCADIS-US, Inc. and Atlantic Richfield Company (a BP affiliated company). It is possible that variations in soil or ground-water conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

**ATTACHMENTS:**

- Drawing 1. Site Location Map, Former Station #11102, 100 MacArthur Boulevard, Oakland, California
- Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 26 February 2010, Former Station #11102, 100 MacArthur Boulevard, Oakland, California
- Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #11102, 100 MacArthur Blvd., Oakland, California
- Table 2. Summary of Fuel Additives Analytical Data, Station #11102, 100 MacArthur Blvd., Oakland, California
- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #11102, 100 MacArthur Blvd., Oakland, California
- Table 4. Bio-Degradation Parameters, Station #11102, 100 MacArthur Blvd., Oakland, California
- Appendix A. BAI Ground-Water Sampling Data (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)
- Appendix B. GeoTracker Upload Confirmation Receipts



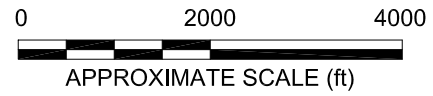
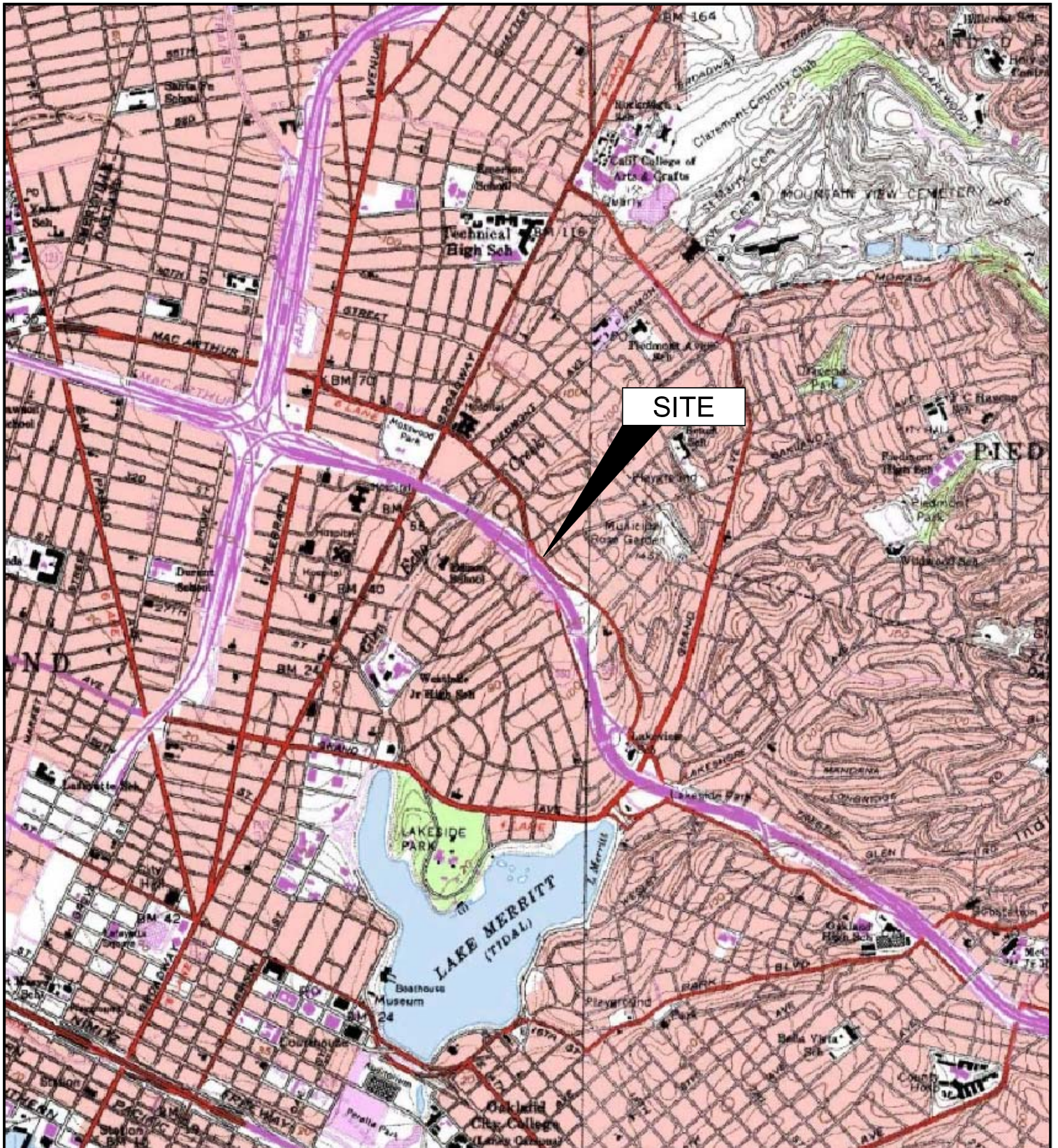


IMAGE SOURCE: USGS



### LEGEND

● Monitoring Well Location

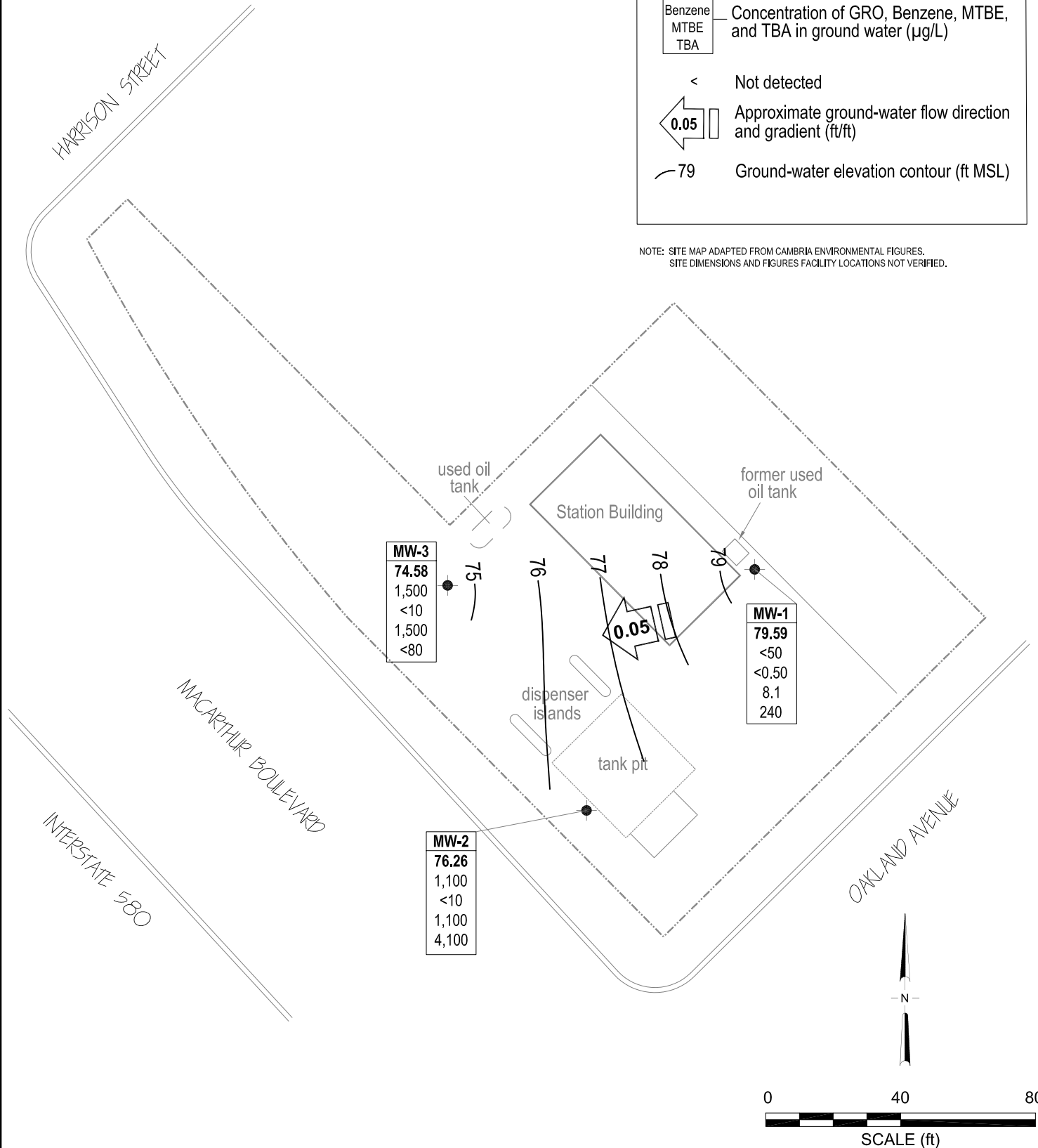
<b>Well</b>	Well designation
<b>ELEV</b>	Ground-water elevation (ft MSL)
GRO	Concentration of GRO, Benzene, MTBE, and TBA in ground water (µg/L)
Benzene	
MTBE	
TBA	

< Not detected

← 0.05 Approximate ground-water flow direction and gradient (ft/ft)

— 79 Ground-water elevation contour (ft MSL)

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.  
SITE DIMENSIONS AND FIGURES FACILITY LOCATIONS NOT VERIFIED.





**Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses**  
**Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
<b>MW-1</b>																		
11/4/1989	--		90.20	13.21	--	76.99	<500	3.4	0.6	<0.3	<0.3	--	--	SAL	--	<50	<5000	--
11/11/1989	--		90.20	13.32	--	76.88	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		90.20	12.46	--	77.74	820	64	1.9	23	34	--	--	ANA	--	--	--	--
7/30/1990	--		90.20	12.92	--	77.28	190	11	<5.0	<5.0	<5.0	--	--	ANA	--	<50	<5000	--
11/20/1990	--		90.20	14.08	--	76.12	50	2.4	<0.3	<0.3	<0.3	--	--	SAL	--	79	<5000	--
3/1/1991	--		90.20	13.61	--	76.59	<100	0.9	<0.3	<0.3	0.3	--	--	SAL	--	<1000	14,000	--
8/19/1991	--		90.20	15.74	--	74.46	370	35	0.73	6.4	5.6	--	--	SEQ	--	<50	<5000	--
11/13/1991	--		90.20	14.08	--	76.12	60	0.68	<0.3	<0.3	<0.3	--	--	SEQ	--	<50	<5000	--
2/24/1992	--		90.20	12.52	--	77.68	140	3.9	0.66	1.2	3.8	--	--	SEQ	--	100	<5000	--
5/19/1992	--		90.20	11.80	--	78.40	4,200	440	21	250	37	--	--	SEQ	--	910	<5000	--
6/17/1992	--		90.20	12.01	--	78.19	4,000	350	14	150	17	--	--	SEQ	--	560	<5000	--
7/22/1992	--		90.20	12.42	--	77.78	4,000	<5.0	19	210	61	--	--	ANA	--	--	--	--
8/14/1992	--		90.20	12.75	--	77.45	2,400	330	20	150	47	--	--	SEQ	--	1,700	<5000	--
11/11/1992	--		90.20	13.69	--	76.51	260	30	3.4	7.6	6.8	--	--	ANA	--	92	<5000	--
6/7/1993	--	c	90.20	--	--	--	3,700	120	12	26	9.5	--	--	PACE	--	--	--	--
6/7/1993	--		90.20	10.93	--	79.27	3,400	98	11	21	7.6	--	--	PACE	--	440	--	--
12/2/1993	--		90.20	12.72	--	77.48	1,100	8.3	3.6	0.6	1.5	--	--	PACE	--	120	<5000	--
6/22/1994	--	c, d	90.20	--	--	--	2,100	30	3.2	2	15	2,000	--	PACE	--	--	--	--
6/22/1994	--	d	90.20	11.81	--	78.39	2,100	32	3.8	2.2	17	4,000	3.2	PACE	--	<50	<5000	--
1/10/1995	--	c	90.20	--	--	--	<500	120	<5	5	<10	--	--	ATI	--	--	--	--
1/10/1995	--		90.20	10.97	--	79.23	<500	120	<5	<5	<10	--	3.9	ATI	--	420	--	--
6/21/1995	--		90.20	9.38	--	80.82	4,700	16	<5.0	<5.0	<10	--	6.7	ATI	--	1,300	2,900	0.6
6/21/1995	--	c, e	90.20	--	--	--	3,600	<13	<5.0	<5.0	<10	--	--	ATI	--	--	--	--
12/27/1995	--		90.20	11.55	--	78.65	430	<2.5	<2.5	<2.5	<5.0	1,200	6.3	ATI	--	2,100	640	--
6/13/1996	--		90.20	9.28	--	80.92	3,200	51	<12	<12	<12	4,000	6.3	SPL	--	920	2,000	--
12/4/1996	--	f	90.20	11.91	--	78.29	1,400	6.2	<5	<5	<5	2,600	6.7	SPL	--	280	2,000	6
6/10/1997	--		90.20	8.97	--	81.23	7,900	12	<10	<10	<10	15,000	6	SPL	--	1,700	<5	--
6/10/1997	--	c	90.20	--	--	--	7,700	14	<25	<25	<25	13,000	--	SPL	--	--	--	--
12/12/1997	--		90.20	11.37	--	78.83	440	8.8	<1.0	2.6	9.4	6,700	5.5	SPL	--	760	1,200	--
6/18/1998	--		90.20	8.02	--	82.18	7,500	<2.5	<5.0	<5.0	<5.0	5,600	4.9	SPL	--	2,900	<5	--
3/9/1999	--		90.20	9.80	--	80.40	32,000	100	16	72	110	49,000	--	SPL	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1 Cont.																		
9/28/1999	--		90.20	10.78	--	79.42	1,000	<5.0	<5.0	<5.0	<5.0	730	--	SPL	--	--	--	<1.0
10/14/1999	--		90.20	10.84	--	79.36	--	--	--	--	--	--	--	SPL	--	660	--	--
3/27/2000	--		90.20	9.83	--	80.37	4,300	160	19	37	43	28,000	--	PACE	--	--	--	--
9/28/2000	--		90.20	11.33	--	78.87	2,700	10	2.6	1.1	2.7	28,000	--	PACE	--	--	--	--
3/8/2001	--		90.20	10.96	--	79.24	8,200	23.5	6.09	5.23	8.97	11,600	--	PACE	--	--	--	--
9/21/2001	--		90.20	12.07	--	78.13	6,000	37.9	<0.5	<0.5	<1.5	7,370	--	PACE	--	--	--	--
2/28/2002	--		90.20	10.48	--	79.72	6,400	60.8	<5.0	6.43	<10	7,750	--	PACE	--	--	--	--
9/6/2002	--		90.20	11.20	--	79.00	1,400	<5.0	<5.0	<5.0	<5.0	6,000	--	SEQ	--	--	--	--
2/19/2003	--	h	90.20	11.29	--	78.91	<10000	<100	110	<100	<100	4,500	--	SEQ	--	--	--	--
7/14/2003	--		90.20	11.18	--	79.02	710	11	<10	<10	<10	940	--	SEQ	--	--	--	--
01/14/2004	--		90.20	11.74	--	78.46	<500	<5.0	<5.0	<5.0	<5.0	220	--	SEQM	6.6	--	--	--
04/23/2004	P	l	90.20	11.95	--	78.25	470	3.4	<2.5	<2.5	<2.5	150	--	SEQM	6.7	--	--	--
07/01/2004	P		90.20	11.52	--	78.68	360	<2.5	<2.5	<2.5	<2.5	96	--	SEQM	6.0	--	--	--
10/28/2004	P		90.20	12.56	--	77.64	390	0.94	<0.50	<0.50	<0.50	43	--	SEQM	6.2	--	--	--
01/10/2005	P		90.20	11.85	--	78.35	490	17	<2.5	5.8	5.4	85	--	SEQM	7.6	--	--	--
04/13/2005	P		90.20	10.00	--	80.20	1,000	27	<2.5	<2.5	25	48	--	SEQM	6.6	--	--	--
07/11/2005	P		90.20	9.27	--	80.93	180	<0.50	<0.50	<0.50	<0.50	36	--	SEQM	7.7	--	--	--
10/17/2005	P		90.20	10.96	--	79.24	140	<0.50	<0.50	<0.50	<0.50	20	--	SEQM	8.0	--	--	--
01/17/2006	P		90.20	10.81	--	79.39	120	0.64	<0.50	<0.50	0.56	38	--	SEQM	6.5	--	--	--
04/21/2006	P	m	90.20	9.28	--	80.92	410	1.4	1.0	<0.50	<0.50	17	--	SEQM	6.5	--	--	--
7/17/2006	--		90.20	9.25	--	80.95	<50	<0.50	<0.50	<0.50	<0.50	5.5	--	TAMC	7.7	--	--	--
7/26/2006	--		90.20	8.57	--	81.63	<50	<0.50	<0.50	<0.50	<0.50	4.4	--	TAMC	6.6	--	--	--
10/31/2006	P		90.20	9.80	--	80.40	<50	<0.50	<0.50	<0.50	<0.50	2.8	2.81	TAMC	6.99	--	--	--
1/8/2007	P		90.20	10.36	--	79.84	<50	2.2	<0.50	<0.50	<0.50	6.2	2.51	TAMC	6.97	--	--	--
4/10/2007	P		90.20	10.65	--	79.55	160	1.4	<0.50	<0.50	<0.50	9.0	1.75	TAMC	7.00	--	--	--
7/10/2007	P	p	90.20	10.52	--	79.68	120	<0.50	<0.50	<0.50	<0.50	4.9	2.01	TAMC	6.60	160	--	--
10/24/2007	P		90.20	11.23	--	78.97	100	<0.50	<0.50	<0.50	<0.50	4.9	1.89	TAMC	6.57	--	--	--
1/22/2008	P		90.20	11.22	--	78.98	240	<0.50	<0.50	0.83	1.7	7.2	3.18	TAMC	6.49	--	--	--
4/15/2008	P		90.20	10.26	--	79.94	240	<0.50	<0.50	<0.50	0.73	5.5	3.32	CEL	6.45	--	--	--
7/8/2008	P		90.20	11.10	--	79.10	78	<0.50	<0.50	<0.50	<0.50	5.8	1.65	CEL	6.78	--	--	--
11/19/2008	P		90.20	12.51	--	77.69	150	<0.50	<0.50	<0.50	<0.50	3.4	1.59	CEL	6.84	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
<b>MW-1 Cont.</b>																		
2/10/2009	P		90.20	12.71	--	77.49	<50	<0.50	<0.50	<0.50	<0.50	5.3	1.63	CEL	7.00	--	--	--
5/7/2009	P		90.20	10.90	--	79.30	<50	1.6	<0.50	<0.50	<0.50	13	1.41	CEL	6.82	--	--	--
9/3/2009	P		90.20	11.91	--	78.29	120	<0.50	<0.50	<0.50	0.89	3.8	1.45	CEL	6.82	--	--	--
10/29/2009	P		90.20	12.54	--	77.66	<50	<0.50	<0.50	<0.50	<1.0	22	1.53	TAMC	6.73	--	--	--
<b>2/26/2010</b>	<b>P</b>		<b>90.20</b>	<b>10.61</b>	<b>--</b>	<b>79.59</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>8.1</b>	<b>0.75</b>	<b>TAMC</b>	<b>6.55</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>MW-2</b>																		
11/4/1989	--		87.91	15.84	--	72.07	<500	6.5	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.91	14.75	--	73.16	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.91	15.25	--	72.66	<500	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.91	15.59	--	72.32	61	6.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
11/20/1990	--		87.91	17.81	--	70.10	<50	0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
3/1/1991	--		87.91	17.11	--	70.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.91	17.97	--	69.94	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.91	16.76	--	71.15	38	0.32	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.91	15.07	--	72.84	<50	<0.5	<0.5	<0.5	0.58	--	--	SEQ	--	--	--	--
5/19/1992	--		87.91	14.70	--	73.21	<50	0.55	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.91	15.60	--	72.31	90	1.3	0.6	0.9	1.9	--	--	ANA	--	--	--	--
8/14/1992	--		87.91	15.88	--	72.03	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--	c	87.91	--	--	--	65	3.2	<0.5	<0.5	1	--	--	ANA	--	--	--	--
11/11/1992	--		87.91	16.19	--	71.72	52	2.8	<0.5	<0.5	0.9	--	--	ANA	--	--	--	--
6/7/1993	--		87.91	14.42	--	73.49	1,200	14	2.8	1.9	1.71	--	--	PACE	--	--	--	--
12/2/1993	--	d	87.91	14.94	--	72.97	790	3.4	0.5	10	<0.5	3,700	--	PACE	--	--	--	--
12/2/1993	--	c, d	87.91	--	--	--	2,100	32	3.8	2.2	17	3,700	--	PACE	--	--	--	--
6/22/1994	--	d	87.91	14.25	--	73.66	110	<0.5	<0.5	<0.5	<0.5	120	3.9	PACE	--	--	--	--
1/10/1995	--		87.91	13.64	--	74.27	<50	<0.5	<0.5	0.6	1	--	4.3	ATI	--	--	--	--
6/21/1995	--		87.91	11.66	--	76.25	4,700	<10	<10	<10	<20	--	7.8	ATI	--	--	--	--
12/27/1995	--		87.91	13.11	--	74.80	6,100	<25	<25	<25	<50	20,000	6.7	ATI	--	--	--	--
12/27/1995	--	c	87.91	--	--	--	6,300	<25	<25	<25	<50	19,000	--	ATI	--	--	--	--
6/13/1996	--		87.91	10.86	--	77.05	8,300	<2.5	<2.5	<2.5	<2.5	13,000	6.5	SPL	--	--	--	--
6/13/1996	--	c	87.91	--	--	--	8,700	<5	<5	<5	<5	13,000	--	SPL	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-2 Cont.																		
12/4/1996	--		87.91	13.03	--	74.88	5,900	<2.5	<5	<5	<5	11,000	6.3	SPL	--	--	--	--
12/4/1996	--	c	87.91	--	--	--	5,900	<2.5	<5	<5	<5	11,000	--	SPL	--	--	--	--
6/10/1997	--		87.91	10.04	--	77.87	<50	<0.5	<1.0	<1.0	<1.0	<10	5.8	SPL	--	--	--	--
12/12/1997	--		87.91	12.44	--	75.47	<50	<0.5	<1.0	<1.0	<1.0	<10	5.7	SPL	--	--	--	--
6/18/1998	--		87.91	8.89	--	79.02	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--
6/18/1998	--	c	87.91	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
3/9/1999	--		87.91	10.20	--	77.71	15,000	<5.0	<5.0	<5.0	<5.0	23,000	--	SPL	--	--	--	--
9/28/1999	--		87.91	11.81	--	76.10	36,000	<5.0	12	7	26	35,000	--	SPL	--	--	--	<5.0
10/14/1999	--		87.91	10.27	--	77.64	--	--	--	--	--	--	--	SPL	--	100	--	--
3/27/2000	--		87.91	9.98	--	77.93	1,300	<0.5	<0.5	0.51	<0.5	5,800	--	PACE	--	--	--	--
9/28/2000	--		87.91	11.40	--	76.51	1,600	1.8	1.7	0.54	2.2	15,000	--	PACE	--	--	--	--
3/8/2001	--		87.91	11.16	--	76.75	20,000	<0.5	<0.5	<0.5	<0.5	29,100	--	PACE	--	--	--	--
9/21/2001	--		87.91	11.65	--	76.26	5,000	<0.5	<0.5	<0.5	<1.5	6,110	--	PACE	--	--	--	--
2/28/2002	--		87.91	9.86	--	78.05	3,200	35.1	<0.5	<0.5	<1.0	4,620	--	PACE	--	--	--	--
9/6/2002	--		87.91	12.32	--	75.59	1,900	<10	<10	<10	<10	15,000	--	SEQ	--	--	--	--
2/19/2003	--	h	87.91	11.63	--	76.28	45,000	<250	<250	<250	<250	32,000	--	SEQ	--	--	--	--
7/14/2003	--		87.91	12.07	--	75.84	9,300	<500	<500	<500	<500	24,000	--	SEQ	--	--	--	--
01/14/2004	P		87.91	11.45	--	76.46	<50,000	<500	<500	<500	<500	21,000	--	SEQM	6.9	--	--	--
04/23/2004	P	l	87.91	11.45	--	76.46	5,100	<250	<250	<250	<250	22,000	--	SEQM	6.8	--	--	--
07/01/2004	P		87.91	12.32	--	75.59	<5,000	<50	<50	<50	<50	5,200	--	SEQM	5.6	--	--	--
10/28/2004	P		87.91	13.02	--	74.89	8,500	<50	<50	<50	<50	6,800	--	SEQM	6.2	--	--	--
01/10/2005	P		87.91	14.38	--	73.53	<25,000	<250	<250	<250	<250	7,100	--	SEQM	7.6	--	--	--
04/13/2005	P		87.91	14.03	--	73.88	<5,000	<50	<50	<50	<50	5,300	--	SEQM	6.6	--	--	--
07/11/2005	P		87.91	11.25	--	76.66	<5,000	<50	<50	<50	<50	5,300	--	SEQM	7.5	--	--	--
10/17/2005	P		87.91	12.48	--	75.43	<5,000	<50	<50	<50	<50	2,500	--	SEQM	8.2	--	--	--
01/17/2006	P		87.91	10.70	--	77.21	<5,000	<50	<50	<50	<50	2,200	--	SEQM	7.0	--	--	--
04/21/2006	--	n	87.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/26/2006	--	k	87.91	10.47	--	77.44	2,700	<50	<50	<50	<50	2,900	--	TAMC	6.69	--	--	--
10/31/2006	P		87.91	12.02	--	75.89	2,300	<25	<25	<25	<25	2,300	2.02	TAMC	6.71	--	--	--
1/8/2007	P		87.91	11.68	--	76.23	1500	<12	<12	<12	<12	1700	1.37	TAMC	6.54	--	--	--
4/10/2007	P	k	87.91	11.45	--	76.46	1,300	<50	<50	<50	<50	1,500	1.60	TAMC	6.89	--	--	--



Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
<b>MW-2 Cont.</b>																		
7/10/2007	P	k, p	87.91	11.97	--	75.94	2,300	<25	<25	<25	<25	2,600	1.82	TAMC	6.69	120	--	--
10/24/2007	P	k	87.91	12.91	--	75.00	2,800	<25	<25	<25	<25	2,800	1.55	TAMC	6.77	--	--	--
1/22/2008	P		87.91	12.00	--	75.91	<2,500	<25	<25	<25	<25	1,400	2.08	TAMC	6.55	--	--	--
4/15/2008	P		87.91	11.77	--	76.14	73	<2.5	<2.5	<2.5	<2.5	2,400	3.12	CEL	6.72	--	--	--
7/8/2008	P		87.91	12.65	--	75.26	93	<50	<50	<50	<50	2,800	1.78	CEL	7.05	--	--	--
11/19/2008	P		87.91	13.98	--	73.93	130	<50	<50	<50	<50	1,900	1.75	CEL	6.72	--	--	--
2/10/2009	P		87.91	13.64	--	74.27	<50	<50	<50	<50	<50	940	1.71	CEL	7.04	--	--	--
5/7/2009	P		87.91	12.00	--	75.91	350	<20	<20	<20	<20	1,900	1.62	CEL	6.94	--	--	--
9/3/2009	P	q	87.91	13.68	--	74.23	890	<40	<40	<40	<40	1,300	1.56	CEL	7.02	--	--	--
10/29/2009	P	k	87.91	13.88	--	74.03	530	<0.50	<0.50	<0.50	<1.0	690	1.60	TAMC	6.7	--	--	--
<b>2/26/2010</b>	<b>P</b>	<b>k</b>	<b>87.91</b>	<b>11.65</b>	<b>--</b>	<b>76.26</b>	<b>1,100</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;20</b>	<b>1,100</b>	<b>0.52</b>	<b>TAMC</b>	<b>6.64</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>MW-3</b>																		
11/4/1989	--		87.02	15.40	--	71.62	<500	<0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.02	14.10	--	72.92	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.02	13.90	--	73.12	<100	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	<5000	--
11/20/1990	--		87.02	14.67	--	72.35	<50	0.3	0.8	0.4	1.5	--	--	SAL	--	--	--	--
3/1/1991	--		87.02	15.22	--	71.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.02	13.15	--	73.87	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.02	15.66	--	71.36	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.02	15.01	--	72.01	<50	0.65	1.4	0.66	4.4	--	--	SEQ	--	--	--	--
5/19/1992	--		87.02	15.52	--	71.50	<50	<0.5	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.02	15.63	--	71.39	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	<50	<5000	--
8/14/1992	--		87.02	13.57	--	73.45	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--		87.02	14.13	--	72.89	<50	<0.5	0.7	<0.5	1.3	--	--	ANA	--	--	--	--
6/7/1993	--		87.02	12.13	--	74.89	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
12/2/1993	--		87.02	13.29	--	73.73	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
6/22/1994	--		87.02	12.78	--	74.24	<50	<0.5	<0.5	<0.5	<0.5	--	2.9	PACE	--	--	--	--
1/10/1995	--		87.02	12.01	--	75.01	<50	<0.5	<0.5	<0.5	<1	--	3.8	ATI	--	--	--	--
6/21/1995	--		87.02	11.57	--	75.45	<50	<0.50	<0.50	<0.50	<1.0	--	7.4	ATI	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-3 Cont.																		
12/27/1995	--		87.02	13.47	--	73.55	<50	<0.50	<0.50	<0.50	<1.0	5.7	7.3	ATI	--	--	--	--
6/13/1996	--		87.02	11.22	--	75.80	60	<0.5	<0.5	<0.5	<0.5	<10	6.8	SPL	--	--	--	--
12/4/1996	--		87.02	13.28	--	73.74	<50	<0.5	<1	<1	<1	<10	6.7	SPL	--	--	--	--
6/10/1997	--		87.02	10.22	--	76.80	<50	<0.5	<1.0	<1.0	<1.0	<10	6.1	SPL	--	--	--	--
12/12/1997	--	c	87.02	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
12/12/1997	--		87.02	12.61	--	74.41	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	--	--	--
6/18/1998	--		87.02	9.07	--	77.95	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--
6/18/1998	--		87.02	12.80	--	74.22	--	--	--	--	--	--	--	--	--	--	--	--
9/28/1999	--		87.02	13.76	--	73.26	--	--	--	--	--	--	--	--	--	--	--	--
3/27/2000	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	1.6	--	PACE	--	--	--	--
9/28/2000	--		87.02	11.28	--	75.74	<50	<0.5	7.4	<0.5	1.3	2	--	PACE	--	--	--	--
3/8/2001	--		87.02	11.75	--	75.27	<50	<0.5	<0.5	<0.5	<0.5	60.4	--	PACE	--	--	--	--
9/21/2001	--		87.02	11.33	--	75.69	<50	<0.5	<0.5	<0.5	<1.5	8.18	--	PACE	--	--	--	--
2/28/2002	--		87.02	10.86	--	76.16	<50	<0.5	<0.5	<0.5	<1.0	25.5	--	PACE	--	--	--	--
9/6/2002	--		87.02	12.73	--	74.29	<50	1.2	<0.5	<0.5	1	16	--	SEQ	--	--	--	--
2/19/2003	--	h	87.02	11.72	--	75.30	<500	<5.0	<5.0	<5.0	<5.0	110	--	SEQ	--	--	--	--
7/14/2003	--		87.02	13.76	--	73.26	<50	<0.50	<0.50	<0.50	0.67	28	--	SEQ	--	--	--	--
01/14/2004	P		87.02	14.83	--	72.19	550	<5.0	<5.0	<5.0	<5.0	380	--	SEQM	8.1	--	--	--
04/23/2004	P	l	87.02	13.17	--	73.85	<200	<25	<25	<25	<25	560	--	SEQM	6.8	--	--	--
07/01/2004	P		87.02	15.19	--	71.83	<50	<0.50	<0.50	<0.50	0.50	48	--	SEQM	6.4	--	--	--
10/28/2004	P		87.02	15.50	--	71.52	<500	<5.0	<5.0	<5.0	<5.0	290	--	SEQM	6.3	--	--	--
01/10/2005	P		87.02	15.00	--	72.02	<50	<0.50	<0.50	<0.50	<0.50	18	--	SEQM	7.6	--	--	--
04/13/2005	P		87.02	14.34	--	72.68	<50	<0.50	<0.50	<0.50	<0.50	9.0	--	SEQM	7.1	--	--	--
07/11/2005	P	k	87.02	10.82	--	76.20	130	<1.0	<1.0	<1.0	<1.0	120	--	SEQM	7.8	--	--	--
10/17/2005	P		87.02	11.84	--	75.18	<250	<2.5	<2.5	<2.5	<2.5	260	--	SEQM	8.5	--	--	--
01/17/2006	P		87.02	11.59	--	75.43	800	<5.0	<5.0	<5.0	<5.0	980	--	SEQM	7.2	--	--	--
04/21/2006	P		87.02	10.00	--	77.02	<500	<5.0	<5.0	<5.0	<5.0	48	--	SEQM	6.7	--	--	--
7/17/2006	P	k	87.02	10.80	--	76.22	910	<5.0	<5.0	<5.0	<5.0	1,400	--	TAMC	7.7	--	--	--
7/26/2006	P		87.02	9.67	--	77.35	810	<10	<10	<10	<10	1,300	--	TAMC	6.56	--	--	--
10/31/2006	P		87.02	10.85	--	76.17	1,600	<10	<10	<10	<10	2,300	2.50	TAMC	6.84	--	--	--
1/8/2007	P		87.02	12.73	--	74.29	520	<5.0	<5.0	<5.0	<5.0	760	3.61	TAMC	7.12	--	--	--

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Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
<b>MW-3 Cont.</b>																		
4/10/2007	P	k	87.02	11.93	--	75.09	630	<5.0	<5.0	<5.0	<5.0	750	2.31	TAMC	7.15	--	--	--
7/10/2007	P	k, p	87.02	11.30	--	75.72	1,800	<5.0	<5.0	<5.0	<5.0	2,400	1.56	TAMC	6.72	66	--	--
10/24/2007	P	k	87.02	13.77	--	73.25	2,000	<25	<25	<25	<25	3,500	1.62	TAMC	6.41	--	--	--
1/22/2008	P	k	87.02	12.92	--	74.10	1,600	<12	<12	<12	<12	2,800	2.17	TAMC	6.32	--	--	--
4/15/2008	P		87.02	15.25	--	71.77	<50	<2.5	<2.5	<2.5	<2.5	960	3.44	CEL	6.71	--	--	--
7/8/2008	P		87.02	12.27	--	74.75	<50	<50	<50	<50	<50	2,200	1.52	CEL	7.01	--	--	--
11/19/2008	P		87.02	15.27	--	71.75	<50	<50	<50	<50	<50	2,700	1.60	CEL	6.83	--	--	--
2/10/2009	P		87.02	13.61	--	73.41	<50	<50	<50	<50	<50	1,800	1.66	CEL	6.98	--	--	--
5/7/2009	P		87.02	11.75	--	75.27	140	<10	<10	<10	<10	780	1.28	CEL	6.86	--	--	--
9/3/2009	P	q	87.02	13.47	--	73.55	1,100	<10	<10	<10	<10	2,400	1.33	CEL	6.87	--	--	--
10/29/2009	P	k	87.02	13.04	--	73.98	1,000	<10	<10	<10	<20	1,500	0.97	TAMC	7.09	--	--	--
<b>2/26/2010</b>	<b>P</b>	<b>k</b>	<b>87.02</b>	<b>12.44</b>	<b>--</b>	<b>74.58</b>	<b>1,500</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;20</b>	<b>1,500</b>	<b>0.74</b>	<b>TAMC</b>	<b>6.69</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>QC-2</b>																		
11/11/1992	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
6/7/1993	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
12/2/1993	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
6/22/1994	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
1/10/1995	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<1	--	--	ATI	--	--	--	--
6/21/1995	--	ug	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	--	--	--
12/27/1995	--	ug	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	--	--	--
6/13/1996	--	ug	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<10	--	SPL	--	--	--	--

ABBREVIATIONS & SYMBOLS:

--/-- = Not analyzed/applicable/measured/available  
< = Not detected at or above specified laboratory reporting limit  
DO = Dissolved oxygen  
DRO = Diesel range organics  
DTW = Depth to water in ft bgs  
ft bgs = feet below ground surface  
GRO = Gasoline range organics, range C4-C12  
GWE = Groundwater elevation measured in ft  
HVOC = Halogenated volatile organic compounds  
mg/L = Milligrams per liter  
MTBE = Methyl tert-butyl ether  
NP = Well not purged prior to sampling  
P = Well purged prior to sampling  
TOC = Top of casing measured in ft  
TOG = Total oil and grease  
TPH-d = Total petroleum hydrocarbons as diesel  
TPH-g = Total petroleum hydrocarbons as gasoline  
µg/L = Micrograms per liter  
ANA = Anametrix, Inc.  
PACE = Pace, Inc.  
ATI = Analytical Technologies, Inc.  
SAL = Superior Analytical Laboratory  
SPL = Southern Petroleum Laboratories  
SEQ/SEQM = Sequoia Analytical/Sequoia Analytical - Morgan Hill (Laboratories)  
CEL = CalScience Environmental Laboratories, Inc.

FOOTNOTES:

c = Blind duplicate.  
d = A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.  
e = Tetrachloroethene  
f = trans-1,2-Dichloroethene  
g = Travel blank.  
h = TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE analyzed by EPA Method 8260B beginning on 1st quarter sampling event (2/19/03).  
k = The hydrocarbon result was partly due to individual peaks in the quantification range (GRO).  
l = GRO analyzed by EPA Method 8015B.  
m = Confirmatory analysis for total xylenes was past holding time.  
n = Well inaccessible.  
p = Hydrocarbon in req. fuel range, but doesn't resemble req. fuel (DRO).  
q = Quantitation of unknown hydrocarbon(s) in sample based on gasoline (GRO).

NOTES:

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

Values for pH and DO were obtained through field measurements.

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through September 30, 2009. GRO analysis was changed to EPA method 8260B (C6-C12) for the time period October 1, 2009 through the present.

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.



**Table 2. Summary of Fuel Additives Analytical Data  
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1</b>									
7/14/2003	<2000	2,700	940	<20	<20	<20	--	--	
01/14/2004	<1,000	2,500	220	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<500	2,500	150	<2.5	<2.5	<2.5	<2.5	<2.5	
07/01/2004	<500	2,000	96	<2.5	<2.5	<2.5	<2.5	<2.5	
10/28/2004	<5.0	1,500	43	<0.50	<0.50	0.58	<0.50	<0.50	
01/10/2005	<500	1,900	85	<2.5	<2.5	<2.5	<2.5	<2.5	
04/13/2005	<500	1,400	48	<2.5	<2.5	<2.5	<2.5	<2.5	
07/11/2005	<100	550	36	<0.50	<0.50	<0.50	<0.50	<0.50	
10/17/2005	<100	450	20	<0.50	<0.50	<0.50	<0.50	<0.50	a
01/17/2006	<300	260	38	<0.50	<0.50	0.54	<0.50	<0.50	
04/21/2006	<300	320	17	<0.50	<0.50	<0.50	<0.50	<0.50	
7/17/2006	<300	32	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/26/2006	<300	22	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
10/31/2006	<300	<20	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	a
1/8/2007	<300	110	6.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/10/2007	<300	210	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
7/10/2007	<300	110	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
10/24/2007	<300	94	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
1/22/2008	<300	110	7.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/15/2008	<300	84	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/8/2008	<300	64	5.8	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2008	<300	110	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2009	<300	110	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	
5/7/2009	<300	17	13	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	260	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/29/2009	<100	210	22	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>2/26/2010</b>	<b>&lt;100</b>	<b>240</b>	<b>8.1</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	
<b>MW-2</b>									
7/14/2003	<100000	<20000	24,000	<1000	<1000	<1000	--	--	
01/14/2004	<100,000	<20,000	21,000	<500	<500	<500	<500	<500	
04/23/2004	<50,000	11,000	22,000	<250	<250	420	<250	<250	

**Table 2. Summary of Fuel Additives Analytical Data  
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-2 Cont.</b>									
07/01/2004	<10,000	2,900	5,200	<50	<50	110	<50	<50	
10/28/2004	<5.0	6,700	6,800	<50	<50	120	<50	<50	
01/10/2005	<50,000	<10,000	7,100	<250	<250	<250	<250	<250	
04/13/2005	<10,000	5,300	5,300	<50	<50	95	<50	<50	
07/11/2005	<10,000	9,000	5,300	<50	<50	99	<50	<50	
10/17/2005	<10,000	5,200	2,500	<50	<50	<50	<50	<50	a
01/17/2006	<30,000	8,400	2,200	<50	<50	<50	<50	<50	
04/21/2006	--	--	--	--	--	--	--	--	Well inaccessible
7/26/2006	<30,000	4,500	2,900	<50	<50	<50	<50	<50	
10/31/2006	<15,000	9,300	2,300	<25	<25	41	<25	<25	a
1/8/2007	<7,500	7700	1700	<12	<12	38	<12	<12	
4/10/2007	<30,000	6,400	1,500	<50	<50	<50	<50	<50	
7/10/2007	<15,000	8,700	2,600	<25	<25	42	<25	<25	
10/24/2007	<15,000	9,500	2,800	<25	<25	52	<25	<25	
1/22/2008	<15,000	6,000	1,400	<25	<25	<25	<25	<25	
4/15/2008	<1,500	6,800	2,400	<2.5	<2.5	30	2.8	<2.5	
7/8/2008	<30,000	7,600	2,800	<50	<50	<50	<50	<50	
11/19/2008	<30,000	7,100	1,900	<50	<50	<50	<50	<50	
2/10/2009	<30,000	2,700	940	<50	<50	<50	<50	<50	
5/7/2009	<12,000	3,900	1,900	<20	<20	30	<20	<20	
9/3/2009	<24,000	7,500	1,300	<40	<40	<40	<40	<40	
10/29/2009	<100	3,900	690	<0.50	<0.50	12	2.4	<0.50	
<b>2/26/2010</b>	<b>&lt;2,000</b>	<b>4,100</b>	<b>1,100</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>13</b>	<b>&lt;10</b>	<b>&lt;10</b>	
<b>MW-3</b>									
7/14/2003	<100	<20	28	<1.0	<1.0	<1.0	--	--	
01/14/2004	<1,000	<200	380	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<5,000	<1,000	560	<25	<25	<25	<25	<25	
07/01/2004	<100	<20	48	<0.50	<0.50	0.52	<0.50	<0.50	
10/28/2004	<5.0	<200	290	<5.0	<5.0	<5.0	<5.0	<5.0	
01/10/2005	<100	<20	18	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 2. Summary of Fuel Additives Analytical Data  
Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-3 Cont.</b>									
07/11/2005	<200	<40	120	<1.0	<1.0	1.4	<1.0	<1.0	a
10/17/2005	<500	<100	260	<2.5	<2.5	4.2	<2.5	<2.5	a
01/17/2006	<3,000	200	980	<5.0	<5.0	13	<5.0	<5.0	
04/21/2006	<3,000	<200	48	<5.0	<5.0	<5.0	<5.0	<5.0	
7/17/2006	<3,000	<200	1,400	<5.0	<5.0	15	<5.0	<5.0	
7/26/2006	<6,000	<400	1,300	<10	<10	18	<10	<10	
10/31/2006	<6,000	<400	2,300	<10	<10	39	<10	<10	a
1/8/2007	<3000	<200	760	<5.0	<5.0	9.7	<5.0	<5.0	
4/10/2007	<3,000	<200	750	<5.0	<5.0	<5.0	<5.0	<5.0	
7/10/2007	<3,000	<200	2,400	<5.0	<5.0	39	<5.0	--	
10/24/2007	<15,000	<1,000	3,500	<25	<25	58	<25	<25	
1/22/2008	<7,500	<500	2,800	<12	<12	34	<12	<12	
4/15/2008	<1,500	<50	960	<2.5	<2.5	9.2	<2.5	<2.5	
7/8/2008	<30,000	<1,000	2,200	<50	<50	<50	<50	<50	
11/19/2008	<30,000	<1,000	2,700	<50	<50	<50	<50	<50	
2/10/2009	<30,000	<1,000	1,800	<50	<50	<50	<50	<50	
5/7/2009	<6,000	<200	780	<10	<10	11	<10	<10	
9/3/2009	<6,000	<200	2,400	<10	<10	39	<10	<10	
10/29/2009	<2,000	110	1,500	<10	<10	17	<10	<10	
<b>2/26/2010</b>	<b>&lt;2,000</b>	<b>&lt;80</b>	<b>1,500</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>16</b>	<b>&lt;10</b>	<b>&lt;10</b>	

ABBREVIATIONS & SYMBOLS:

-- = Not analyzed/applicable/measured/available

< = Not detected at or above specified laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

FOOTNOTES:

a = The calibration verification for ethanol was within the method limits but outside the contract limits.

NOTES:

All volatile organic compounds were analyzed using EPA Method 8260B.

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.



**Table 3. Historical Ground-Water Flow Direction and Gradient  
Station #11102, 100 MacArthur Blvd., Oakland, CA**

<b>Date Sampled</b>	<b>Approximate Flow Direction</b>	<b>Approximate Hydraulic Gradient</b>
4/21/2006	--	--
7/17/2006	Southwest	0.05
10/31/2006	Southwest	0.04
1/8/2007	West	0.06
4/10/2007	West	0.05
7/10/2007	Southwest	0.04
10/24/2007	West-Southwest	0.06
1/22/2008	West	0.05
4/15/2008	West-Southwest	0.09
7/8/2008	West-Southwest	0.05
11/19/2008	West	0.06
2/10/2009	West	0.04
5/7/2009	West	0.05
9/3/2009	West	0.05
10/29/2009	West	0.04
<b>2/26/2010</b>	<b>West</b>	<b>0.05</b>

Note: The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information.

**Table 4. Bio-Degradation Parameters**  
**Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)			Ferrous Iron (mg/L)	ORP (mV)	DO (mg/L)	Conductivity (µS/cm)	Hydrogen Sulfide (mg/L)	Methane (µg/L)	pH	Comments
	Total Alkalinity	Nitrate NO3	Sulfate SO4								
<b>MW-1</b>											
7/10/2007	--	1,500	21,000	0.11	71.1	2.01	--	<1.0	--	6.60	
10/24/2007	--	--	--	--	--	1.89	639	--	--	6.57	
1/22/2008	--	760	11,000	0.42	108	3.18	811	<1.0	--	6.49	
4/15/2008	--	240	9,900	0.26	--	3.32	758	<0.100	--	6.45	
7/8/2008	--	860	19,000	0.23	--	1.65	628	--	--	6.78	
11/19/2008	--	540	16,000	0.5	--	1.59	853	--	--	6.84	
2/10/2009	--	830	35,000	0.0	63	1.63	899	<100	--	7.00	
5/7/2009	--	9,300	40,000	0.5	59	1.41	851	<100	--	6.82	
9/3/2009	--	<440	15,000	0.0	62	1.45	676	<100	--	6.82	
10/29/2009	--	<1,000	19,000	<0.10	20	1.53	142.8	2.9	--	6.73	a
<b>2/26/2010</b>	--	--	--	--	<b>45</b>	<b>0.75</b>	<b>761.2</b>	--	--	<b>6.55</b>	
<b>MW-2</b>											
7/10/2007	--	<500	26,000	0.16	9.7	1.82	--	<1.0	--	6.69	
10/24/2007	--	--	--	--	--	1.55	863	--	--	6.77	
1/22/2008	--	8,500	26,000	0.15	167	2.08	672	<1.0	--	6.55	
4/15/2008	--	<100	28,000	<0.100	--	3.12	799	<0.100	--	6.72	
7/8/2008	--	<440	25,000	0.15	--	1.78	753	--	--	7.05	
11/19/2008	--	3,300	20,000	0.0	--	1.75	581	--	--	6.72	
2/10/2009	--	22,000	42,000	0.0	87	1.71	591	100	--	7.04	CL (NO3)
5/7/2009	--	<440	33,000	0.03	90	1.62	1,108	<100	--	6.94	
9/3/2009	--	<440	16,000	0.5	93	1.56	525	<100	--	7.02	
10/29/2009	--	<1,000	14,000	0.64	--	1.60	514.4	3.1	--	6.7	a
<b>2/26/2010</b>	--	--	--	--	<b>9</b>	<b>0.52</b>	<b>577.9</b>	--	--	<b>6.64</b>	
<b>MW-3</b>											
7/10/2007	--	8,500	19,000	<0.100	182.9	1.56	--	<1.0	--	6.72	
10/24/2007	--	--	--	--	--	1.62	639	--	--	6.41	
1/22/2008	--	5,600	17,000	<0.100	144	2.17	636	<1.0	--	6.32	
4/15/2008	--	1,600	21,000	<0.100	--	3.44	638	<0.100	--	6.71	
7/8/2008	--	6,700	18,000	<0.100	--	1.52	651	--	--	7.01	
11/19/2008	--	6,100	15,000	0.5	--	1.60	651	--	--	6.83	

**Table 4. Bio-Degradation Parameters**  
**Station #11102, 100 MacArthur Blvd., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)			Ferrous Iron (mg/L)	ORP (mV)	DO (mg/L)	Conductivity (µS/cm)	Hydrogen Sulfide (mg/L)	Methane (µg/L)	pH	Comments
	Total Alkalinity	Nitrate NO3	Sulfate SO4								
<b>MW-3 Cont.</b>											
2/10/2009	--	5,400	22,000	0.0	91	1.66	659	<100	--	6.98	
5/7/2009	--	11,300	19,000	0.0	87	1.28	643	<100	--	6.86	
9/3/2009	--	8,100	15,000	0.0	85	1.33	557	<100	--	6.87	
10/29/2009	--	12,000	17,000	<0.10	-21	0.97	630	2.4	--	7.09	a
<b>2/26/2010</b>	--	--	--	--	<b>17</b>	<b>0.74</b>	<b>665.6</b>	--	--	<b>6.69</b>	

ABBREVIATIONS AND SYMBOLS:

< = Not detected at or above specified laboratory reporting limit

ORP = Oxygen reduction potential

DO = Dissolved oxygen

CO<sub>2</sub> = Carbon dioxide

mV = Millivolts

µg/L = Micrograms per liter

mg/L = Milligrams per liter

a = Sample analyzed for total sulfide instead of hydrogen sulfide due to holding time requirements

CL = Initial analysis within holding time but required dilution

**APPENDIX A**

**BAI GROUND-WATER SAMPLING DATA  
(INCLUDES FIELD DATA SHEETS, LABORATORY ANALYTICAL REPORT WITH  
CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD PROCEDURES)**

DATE: 2/26/10  
 PERSONNEL: J. Giddings  
 WEATHER: overcast

PROJECT NO.: 11102 09-88-643  
 COMMENTS:

Equip:	Geosquirt	Tubing	Bailers	DO	wli	Ec/pH
--------	-----------	--------	---------	----	-----	-------

Well ID	Time	MEASURING POINT	DTW (FT)	PRODUCT THICKNESS	pH	Cond. (X100)	Temp. (C/F)	DO (mg/l)	Redox (mV)	Iron (mg/l)	Alk. (mg/l)	WELL HEAD CONDITION: VAULT, BOLTS, CAP, LOCK, ETC
MW-1	0818	TGC	10.61									17
MW-2	0835	↓	11.65									12
MW-3	0825	↓	12.44									13
												3 gal from purge sampling
												45
												45 gal in Drum left on site



# BROADBENT & ASSOCIATES, INC.

ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

## Groundwater Sampling Data Sheet

Well I.D.: MW-1

Project Name/Location: BP 11102 Project #: 09-88-643

Sampler's Name: T. Goddes Date: 2/26/10

Purging Equipment: Bailer

Sampling Equipment: Bailer

Casing Type: PVC

Casing Diameter: 4" inch

Total Well Depth: 32.00 feet

Depth to Water: - 10.61 feet

Water Column Thickness: = 21.39 feet

Unit Casing Volume\*: x .65 gallon / foot

Casing Water Volume: = 13.9 gallons

Casing Volume: x 3 each

Estimated Purge Volume: = 41.7 gallons

### \*UNIT CASING VOLUMES

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0918	.75	45		752.2	65.6	6.85	
5	0925	X	X	X	672.9	65.3	6.58	
10	0930	X	X	X	693.9	65.3	6.52	
15	0937	X	X	X	746.5	65.3	6.55	
17	0940	1.09	X	X	761.2	65.5	6.55	
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 17 gallons

Depth to Water at Sample Collection: 11.60 feet

Sample Collection Time: 0945

Purged Dry? (Y/N) (N)

Comments: DTB 32.07

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**Groundwater Sampling Data Sheet**

Well I.D.: MW-2  
 Project Name/Location: BD 11102 Project #: 09-87-643  
 Sampler's Name: T. Giddis Date: 2/26/10  
 Purging Equipment: Builer  
 Sampling Equipment: Builer

Casing Type: PVC  
 Casing Diameter: 4" inch  
 Total Well Depth: 32.39 feet  
 Depth to Water: - 11.65 feet  
 Water Column Thickness: = 20.7 feet  
 Unit Casing Volume\*: x .65 gallon / foot  
 Casing Water Volume: = 13.4 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 40.44 gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present): \_\_\_\_\_

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1005	0.92	9		589.9	66.1	6.98	
5	1010	X	X	X	560.4	66.3	6.63	
9	1015	X	X	X	554.1	66.4	6.59	
12	1020	1.44	X	X	577.9	66.5	6.64	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 12 gallons  
 Depth to Water at Sample Collection: 20.24 feet  
 Sample Collection Time: 1627

Purged Dry? (Y  N)

Comments: 1293 32.40

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**Groundwater Sampling Data Sheet**

Well I.D.: MW-3  
 Project Name/Location: BP 11102 Project #: 09-88-643  
 Sampler's Name: T. Geddes Date: 2/26/10  
 Purging Equipment: Boiler  
 Sampling Equipment: Boiler

Casing Type: PVC  
 Casing Diameter: 4" inch  
 Total Well Depth: 32.45 feet  
 Depth to Water: - 12.44 feet  
 Water Column Thickness: = 20.01 feet  
 Unit Casing Volume\*: x .65 gallon / foot  
 Casing Water Volume: = 13.00 gallons  
 Casing Volume: x 3 each  
 Estimated Purge Volume: = 39.01 gallons

**\*UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.  
 3" = 0.37 gal/lin ft.  
 4" = 0.65 gal/lin ft.  
 6" = 1.47 gal/lin ft.

Free product measurement (if present):

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1046	0.74	17		653.2	66.0	7.00	
5	1052	X	X	X	651.8	<del>66.0</del> 66.7	6.70	
10	1058	X	X	X	665.8	67.5	6.70	
13	1102	1.76	X	X	665.6	67.2	6.69	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 13 gallons

Depth to Water at Sample Collection: 19.53 feet

Sample Collection Time: 1109

Purged Dry? (Y  N)

Comments: BTB. 32.51

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## ANALYTICAL REPORT

Job Number: 720-26203-1

Job Description: BP #11102, Oakland

For:  
ARCADIS U.S., Inc.  
155 Montgomery Street  
Suite 1500  
San Francisco, CA 94104  
Attention: Hollis Phillips



Approved for release.  
Dimple Sharma  
Project Manager I  
4/23/2010 4:43 PM

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Dimple Sharma  
Project Manager I  
dimple.sharma@testamericainc.com  
04/23/2010  
Revision: 1

cc: Mr. Jason Duda  
Mr. Ben McKenna

CA ELAP Certification # 2496

The Chain(s) of Custody are included and are an integral part of this report.

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A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

**TestAmerica Laboratories, Inc.**

TestAmerica San Francisco 1220 Quarry Lane, Pleasanton, CA 94566

Tel (925) 484-1919 Fax (925) 600-3002 [www.testamericainc.com](http://www.testamericainc.com)

**Job Narrative**  
**720-26203-1**

**Comments**

No additional comments.

**Receipt**

All samples were received in good condition within temperature requirements.

**GC/MS VOA**

Method(s) 8260B: The Gasoline Range Organics (GRO) concentration reported for sample 26203-2 and 3 are due to the presence of discrete peaks: MW-2(02/26/10) (720-26203-2), MW-3(02/26/10) (720-26203-3).

No other analytical or quality issues were noted.

## EXECUTIVE SUMMARY - Detections

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

Lab Sample ID	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>720-26203-1</b>	<b>MW-1(02/26/10)</b>				
MTBE		8.1	0.50	ug/L	8260B/CA_LUFTMS
TBA		240	4.0	ug/L	8260B/CA_LUFTMS
<b>720-26203-2</b>	<b>MW-2(02/26/10)</b>				
MTBE		1100	10	ug/L	8260B/CA_LUFTMS
TBA		4100	80	ug/L	8260B/CA_LUFTMS
TAME		13	10	ug/L	8260B/CA_LUFTMS
Gasoline Range Organics (GRO)-C6-C12		1100	1000	ug/L	8260B/CA_LUFTMS
<b>720-26203-3</b>	<b>MW-3(02/26/10)</b>				
MTBE		1500	10	ug/L	8260B/CA_LUFTMS
TAME		16	10	ug/L	8260B/CA_LUFTMS
Gasoline Range Organics (GRO)-C6-C12		1500	1000	ug/L	8260B/CA_LUFTMS

## METHOD SUMMARY

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

<b>Description</b>	<b>Lab Location</b>	<b>Method</b>	<b>Preparation Method</b>
<b>Matrix: Water</b>			
8260B / CA LUFT MS	TAL SF	SW846 8260B/CA_LUFTMS	
Purge and Trap	TAL SF		SW846 5030B

### Lab References:

TAL SF = TestAmerica San Francisco

### Method References:

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

## SAMPLE SUMMARY

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
720-26203-1	MW-1(02/26/10)	Water	02/26/2010 0945	02/26/2010 1610
720-26203-2	MW-2(02/26/10)	Water	02/26/2010 1027	02/26/2010 1610
720-26203-3	MW-3(02/26/10)	Water	02/26/2010 1109	02/26/2010 1610



**Analytical Data**

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Client Sample ID: MW-1(02/26/10)**

Lab Sample ID: 720-26203-1

Date Sampled: 02/26/2010 0945

Client Matrix: Water

Date Received: 02/26/2010 1610

**8260B/CA\_LUFTMS 8260B / CA LUFT MS**

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-66772	Instrument ID:	HP4
Preparation:	5030B		Lab File ID:	03011012.D
Dilution:	1.0		Initial Weight/Volume:	10 mL
Date Analyzed:	03/01/2010 2022		Final Weight/Volume:	10 mL
Date Prepared:	03/01/2010 2022			

Analyte	Result (ug/L)	Qualifier	RL
MTBE	8.1		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
TBA	240		4.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	101		67 - 130
1,2-Dichloroethane-d4 (Surr)	98		67 - 130
Toluene-d8 (Surr)	87		70 - 130

**Analytical Data**

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Client Sample ID: MW-1(02/26/10)**

Lab Sample ID: 720-26203-1

Date Sampled: 02/26/2010 0945

Client Matrix: Water

Date Received: 02/26/2010 1610

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**8260B/CA\_LUFTMS 8260B / CA LUFT MS**

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-66809	Instrument ID:	HP5
Preparation:	5030B		Lab File ID:	03021009.D
Dilution:	1.0		Initial Weight/Volume:	10 mL
Date Analyzed:	03/02/2010 1407		Final Weight/Volume:	10 mL
Date Prepared:	03/02/2010 1407			

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Analyte	Result (ug/L)	Qualifier	RL
Gasoline Range Organics (GRO)-C6-C12	ND		50

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Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	92		67 - 130
1,2-Dichloroethane-d4 (Surr)	82		67 - 130
Toluene-d8 (Surr)	96		70 - 130

**Analytical Data**

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Client Sample ID: MW-2(02/26/10)**

Lab Sample ID: 720-26203-2

Date Sampled: 02/26/2010 1027

Client Matrix: Water

Date Received: 02/26/2010 1610

**8260B/CA\_LUFTMS 8260B / CA LUFT MS**

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-66772	Instrument ID:	HP4
Preparation:	5030B		Lab File ID:	03011013.D
Dilution:	20		Initial Weight/Volume:	10 mL
Date Analyzed:	03/01/2010 2053		Final Weight/Volume:	10 mL
Date Prepared:	03/01/2010 2053			

Analyte	Result (ug/L)	Qualifier	RL
MTBE	1100		10
Benzene	ND		10
EDB	ND		10
1,2-DCA	ND		10
Ethylbenzene	ND		10
Toluene	ND		10
Xylenes, Total	ND		20
TBA	4100		80
Ethanol	ND		2000
DIPE	ND		10
TAME	13		10
Ethyl t-butyl ether	ND		10
Gasoline Range Organics (GRO)-C6-C12	1100		1000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		67 - 130
Toluene-d8 (Surr)	89		70 - 130

**Analytical Data**

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Client Sample ID: MW-3(02/26/10)**

Lab Sample ID: 720-26203-3

Date Sampled: 02/26/2010 1109

Client Matrix: Water

Date Received: 02/26/2010 1610

**8260B/CA\_LUFTMS 8260B / CA LUFT MS**

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-66772	Instrument ID:	HP4
Preparation:	5030B		Lab File ID:	03011014.D
Dilution:	20		Initial Weight/Volume:	10 mL
Date Analyzed:	03/01/2010 2126		Final Weight/Volume:	10 mL
Date Prepared:	03/01/2010 2126			

Analyte	Result (ug/L)	Qualifier	RL
MTBE	1500		10
Benzene	ND		10
EDB	ND		10
1,2-DCA	ND		10
Ethylbenzene	ND		10
Toluene	ND		10
Xylenes, Total	ND		20
TBA	ND		80
Ethanol	ND		2000
DIPE	ND		10
TAME	16		10
Ethyl t-butyl ether	ND		10
Gasoline Range Organics (GRO)-C6-C12	1500		1000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		67 - 130
Toluene-d8 (Surr)	88		70 - 130

## DATA REPORTING QUALIFIERS

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
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## Quality Control Results

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>GC/MS VOA</b>					
<b>Analysis Batch:720-66772</b>					
LCS 720-66772/5	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCS 720-66772/7	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-66772/6	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
LCSD 720-66772/8	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-66772/4	Method Blank	T	Water	8260B/CA_LUFT	
720-26203-1	MW-1(02/26/10)	T	Water	8260B/CA_LUFT	
720-26203-1MS	Matrix Spike	T	Water	8260B/CA_LUFT	
720-26203-1MSD	Matrix Spike Duplicate	T	Water	8260B/CA_LUFT	
720-26203-2	MW-2(02/26/10)	T	Water	8260B/CA_LUFT	
720-26203-3	MW-3(02/26/10)	T	Water	8260B/CA_LUFT	
<b>Analysis Batch:720-66809</b>					
LCS 720-66809/7	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-66809/8	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-66809/4	Method Blank	T	Water	8260B/CA_LUFT	
720-26203-1	MW-1(02/26/10)	T	Water	8260B/CA_LUFT	

**Report Basis**

T = Total

## Quality Control Results

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Method Blank - Batch: 720-66772**

**Method: 8260B/CA\_LUFTMS  
Preparation: 5030B**

Lab Sample ID: MB 720-66772/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 03/01/2010 1606  
 Date Prepared: 03/01/2010 1606

Analysis Batch: 720-66772  
 Prep Batch: N/A  
 Units: ug/L

Instrument ID: HP4  
 Lab File ID: 03011004.D  
 Initial Weight/Volume: 10 mL  
 Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
MTBE	ND		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
TBA	ND		4.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50
Gasoline Range Organics (GRO)-C6-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	99	67 - 130
1,2-Dichloroethane-d4 (Surr)	99	67 - 130
Toluene-d8 (Surr)	89	70 - 130



## Quality Control Results

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 720-66772**

**Method: 8260B/CA\_LUFTMS  
Preparation: 5030B**

LCS Lab Sample ID: LCS 720-66772/5  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 03/01/2010 1638  
Date Prepared: 03/01/2010 1638

Analysis Batch: 720-66772  
Prep Batch: N/A  
Units: ug/L

Instrument ID: HP4  
Lab File ID: 03011005.D  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 720-66772/6  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 03/01/2010 1710  
Date Prepared: 03/01/2010 1710

Analysis Batch: 720-66772  
Prep Batch: N/A  
Units: ug/L

Instrument ID: HP4  
Lab File ID: 03011006.D  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
MTBE	103	106	73 - 123	4	20		
Benzene	98	98	82 - 127	0	20		
EDB	104	106	70 - 130	2	20		
1,2-DCA	111	111	75 - 145	0	20		
Ethylbenzene	107	105	86 - 135	2	20		
Toluene	103	101	83 - 129	2	20		
TBA	100	100	85 - 110	0	20		
Ethanol	120	117	31 - 216	2	20		
DIPE	116	117	74 - 155	1	20		
TAME	106	109	79 - 129	3	20		
Ethyl t-butyl ether	104	106	70 - 130	2	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	106	106	67 - 130
1,2-Dichloroethane-d4 (Surr)	98	98	67 - 130
Toluene-d8 (Surr)	92	93	70 - 130

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	106	106	67 - 130
1,2-Dichloroethane-d4 (Surr)	102	100	67 - 130
Toluene-d8 (Surr)	92	92	70 - 130

## Quality Control Results

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-66772**

**Method: 8260B/CA\_LUFTMS  
Preparation: 5030B**

MS Lab Sample ID: 720-26203-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 03/01/2010 1918  
Date Prepared: 03/01/2010 1918

Analysis Batch: 720-66772  
Prep Batch: N/A

Instrument ID: HP4  
Lab File ID: 03011010.D  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

MSD Lab Sample ID: 720-26203-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 03/01/2010 1950  
Date Prepared: 03/01/2010 1950

Analysis Batch: 720-66772  
Prep Batch: N/A

Instrument ID: HP4  
Lab File ID: 03011011.D  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
MTBE	103	101	60 - 138	1	20		
Benzene	100	100	60 - 140	0	20		
EDB	101	100	60 - 140	1	20		
1,2-DCA	107	104	60 - 140	3	20		
Ethylbenzene	111	111	60 - 140	0	20		
Toluene	105	105	60 - 140	0	20		
TBA	104	99	60 - 140	3	20		
Ethanol	120	110	60 - 140	8	20		
DIPE	116	114	60 - 140	2	20		
TAME	107	107	60 - 140	0	20		
Ethyl t-butyl ether	106	105	60 - 140	1	20		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
4-Bromofluorobenzene	104		103	67 - 130			
1,2-Dichloroethane-d4 (Surr)	94		94	67 - 130			
Toluene-d8 (Surr)	91		91	70 - 130			

## Quality Control Results

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

**Method Blank - Batch: 720-66809**

**Method: 8260B/CA\_LUFTMS  
Preparation: 5030B**

Lab Sample ID: MB 720-66809/4  
 Client Matrix: Water  
 Dilution: 1.0  
 Date Analyzed: 03/02/2010 1039  
 Date Prepared: 03/02/2010 1039

Analysis Batch: 720-66809  
 Prep Batch: N/A  
 Units: ug/L

Instrument ID: HP5  
 Lab File ID: 03021004.D  
 Initial Weight/Volume: 10 mL  
 Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Gasoline Range Organics (GRO)-C6-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	93	67 - 130
1,2-Dichloroethane-d4 (Surr)	91	67 - 130
Toluene-d8 (Surr)	95	70 - 130

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	98	94	67 - 130
1,2-Dichloroethane-d4 (Surr)	86	81	67 - 130
Toluene-d8 (Surr)	99	98	70 - 130

**Sharma, Dimple**

**From:** Phillips, Hollis [Hollis.Phillips@arcadis-us.com]  
**Sent:** Monday, March 01, 2010 3:38 PM  
**To:** Sharma, Dimple  
**Subject:** FW: Status: Samples received for ARCADIS U.S., Inc. - San Francisco [720-26203-1]

Dimple:

Please do not analyze the purge water samples (the MWs can be analyzed per the COC)

**From:** TotalAccess [mailto:totalaccess@testamericainc.com]  
**Sent:** Monday, March 01, 2010 12:19 PM  
**To:** Phillips, Hollis  
**Subject:** Status: Samples received for ARCADIS U.S., Inc. - San Francisco [720-26203-1]

**WORK ORDER**

720-26203-1

**San Francisco Laboratory**

Project/Job Description: BP #11102, Oakland

Project Number:

**Report To:**

Hollis Phillips  
 ARCADIS U.S., Inc. - San Francisco  
 155 Montgomery Street Suite 1500  
 San Francisco, California 94104  
 Phone:  
 Fax:

**Invoice To:**

Accounts Payable  
 ARCADIS U.S. Inc  
 Attn: Accounts Payable 640 Plaza Drive, Suite 130  
 Highlands Ranch, CO 80129  
 Phone:  
 Fax:

Laboratory Project Manager:	Dimple Sharma	Date Due:	03/12/10 23:59
Status:	Received	Date Received:	02/26/10 16:10
Status Date:	02/26/10 19:51	Date Logged:	03/01/10 11:43

Analysis	Expires	Status	Status Date
MW-1(02/26/10) (720-26203-1-720-26203-1) Water 8260B_LL	03/12/10 23:59	Ready	03/01/10 12:01
MW-2(02/26/10) (720-26203-1-720-26203-2) Water 8260B_LL	03/12/10 23:59	Ready	03/01/10 12:01
MW-3(02/26/10) (720-26203-1-720-26203-3) Water 8260B_LL	03/12/10 23:59	Ready	03/01/10 12:01
<del>11102 Purge Water(02/26/10) (720-26203-1-720-26203-4) Water 6010B</del>	08/25/10 23:59	Waiting	N/A
<del>6015B_DRO</del>	04/07/10 23:59	Ready	03/01/10 12:16
<del>8260B_LL</del>	03/12/10 23:59	Ready	03/01/10 12:01
<del>GM4500_S2_F</del>	03/05/10 23:59	In-Transit	03/01/10 12:03
<del>SUBCONTRACT</del>	08/19/15 11:35	In-Transit	03/01/10 12:02

3/1/2010

San Francisco

1220 Quarry Lane

Pleasanton, CA 94566

phone 925.484.1919 fax 925.608.8002

720-26203

Chain of Custody Record

122610 TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact Broadbent & Associates 1324 Mangrove Ave Suite 212 Chico, CA 95928 (530) 566-1400 (530) 566-1401 Project Name: BP 11102 Site: 100 MacArthur Blvd, Oakland, CA P O # GP09BPNA.C111		Project Manager: Jason Duda Tel/Fax: (530) 566-1400/ (530) 566-1401		Site Contact: Tracy Geddes Lab Contact: Dimple Sharma		Date: 2/26/2010 Carrier: BAI		COC No: 1 of 1 COCs Job No. SDG No.	
		Analysis Turnaround Time Calendar (C) or Work Days (W) TAT if different from Below Standard <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample GRO, BTEX, & 5 Oxy by 8260B 1,2 DCA and EDB by 8260B Ethanol by 8260B Acetone, Chloroform, Naphthalene, Trichloroethene by 8260B GRO by 8260B Diesel & Motor Oil by 8015B Sulfide by 4500.SZF Arsenic, Chromium & Lead by 6010B BTEX, 1,2-DCA, Acetone, Chloroform, MTBE/Naphthalene, TBA, & Trichloroethene by 8260B Acute Aquatic 96-hour LC50 Fathead Minnow				Sample Specific Notes:	
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	# of Cont.			
1 MW-1(02/26/10)		2/26/2010	0945	Grab	Water	6	X	X	X
2 MW-2(02/26/10)		2/26/2010	1027	Grab	Water	6	X	X	X
3 MW-3(02/26/10)		2/26/2010	1109	Grab	Water	6	X	X	X
4 <del>11102 Purgewater(02/26/10)</del>		<del>2/26/2010</del>	<del>1135</del>	<del>Composite</del>	<del>Water</del>	<del>12</del>			
									Cancelled as per Hollis on 3/1/10.
5 Trip Blank(02/26/2010)		2/26/10				2	X		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other		Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/>		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements & Comments:									
Relinquished by: <i>[Signature]</i>		Company: BAI		Date/Time: 2/26/10 60		Received by: Joan Muller		Date/Time: 2-26-10 1610	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time:	
Relinquished by:		Company:		Date/Time:		Received by:		Date/Time:	

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5.8°

## Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-26203-1

Login Number: 26203

List Source: TestAmerica San Francisco

Creator: Mullen, Joan

List Number: 1

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

## BROADBENT & ASSOCIATES INC. FIELD PROCEDURES

### A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

Field protocols have been implemented to enhance the accuracy and reliability of data collection, ground-water sample collection, transportation and laboratory analysis. Discussion of these protocols is provided below.

#### A.1.1 Water Level & Free-Product Measurement

Prior to ground-water sample collection from each monitoring well, the presence of separate-phase hydrocarbons (SPH or free product, FP) and depth to ground water shall be measured. Depth to ground water will be measured with a standard water level indicator that has been decontaminated prior to its use in accordance with procedures discussed below. Depth to groundwater will be gauged from a saw cut notch at the top of the well casing on each well head. Where FP is suspected, the initial gauging will be done with an oil-water interface probe. Once depth to water has been measured, the first retrieval of a new disposable bailer will be scrutinized for the presence of SPH/FP.

#### A.1.2 Monitoring Well Purging

Subsequent to measuring depth to ground water and prior to the collection of ground-water samples, purging of standing water within the monitoring well will be performed if called for. Consistent with the American Society for Testing and Materials (ASTM) Standard D6452-99, Section 7.1, the well will be purged of approximately three wetted-casing volumes of water, or until the well is dewatered, or until monitored field parameters indicate stabilization. The well will be purged using a pre-cleaned disposable bailer or submersible pump and disposable plastic tubing dedicated to each individual well. The well will be purged at a low flow rate to minimize the possibility of purging the well dry. So that the sample collected is representative of formation water, several field parameters will be monitored during the purging process. The sample will not be collected until these parameters (i.e. temperature, pH, and conductivity) have stabilized to within 10% of the previously measured value. If a well is purged dry, the sample should not be collected until the well has recovered to a minimum 50% of its initial volume.

#### A.1.3 Ground-Water Sample Collection

Once the wells are satisfactorily purged, water samples will be collected from each well. Water samples for organic analyses will be collected using a pre-cleaned, new, disposable bailer and transferred into the appropriate, new, laboratory-prepared containers such that no head space or air bubbles are present in the sample container (if appropriate to the analysis). The samples will be properly labeled (i.e. sample identification, sampler initials, date/time of collection, site location, requested analyses), placed in an ice chest with bagged ice or ice substitute, and delivered to the contracted analytical laboratory.

#### A.1.4 Surface Water Sample Collection

Unless specified otherwise, surface water samples will be collected from mid-depth in the central area of the associated surface water body. Water samples will be collected into appropriate, new, laboratory-prepared containers by dipping the container into the surface water unless the container has a preservative present. If a sample preservative is present, a new, cleaned non-preserved surrogate container will be used to obtain the sample which will then be directly transferred into a new, laboratory-provided, preserved container. Samples will be properly labeled and transported as described above.



#### A.1.5 Decontamination Protocol

Prior to use in each well, re-usable ground-water sampling equipment (e.g., water level indicator, oil-interface probe, purge pump, etc.) will be decontaminated. Decontamination protocol will include thoroughly cleaning with a solution of Liquinox, rinsing with clean water, and final rinsing with control water (potable water of known quality, distilled, or de-ionized water). Pre-cleaned new disposable bailers and disposable plastic tubing will be dedicated to each individual well.

#### A.1.6 Chain of Custody Procedures

Sample identification documents will be carefully prepared so identification and chain of custody can be maintained and sample disposition can be controlled. The sample identification documents include Chain-of-Custody (COC) records and Daily Field Report forms. Chain of custody procedures are outlined below.

##### Field Custody Procedures

The field sampler is individually responsible for the care and custody of the samples collected until they are properly transferred.

Samples will have unique labels. The information on these labels will correspond to the COC which shows the identification of individual samples and the contents of the shipping container. The original COC will accompany the shipment and a copy will be retained by the field sampler.

##### Transfer of Custody and Shipment

A COC will accompany samples during transfer and shipment. When transferring samples, the individual relinquishing and the individual receiving the samples will each sign, date, and note the time on the COC. This documents the sample custody transfer.

Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate COC accompanying each shipment. Shipments will be accompanied by the original COC. Samples will be delivered by BAI personnel to the laboratory, or shipped by responsible courier. When a shipping courier is utilized, the sample shipment number will be identified on the COC.

#### A.1.7 Field Records

In addition to sample identification numbers and COC records, Daily Field Report records will be maintained by field staff to provide daily records of significant events, observations, and measurements during field investigations. These documents will contain observed information such as: the personnel present, site conditions, sampling procedures, measurement procedures, calibration records, equipment used, supplies used, etc. Field measurements will be recorded on the appropriate forms. Entries on the data forms will be signed and dated. The data forms will be kept as permanent file records.

**APPENDIX B**

**GEOTRACKER UPLOAD CONFIRMATION RECEIPTS**

STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_WELL FILE

**SUCCESS**

Processing is complete. No errors were found!  
Your file has been successfully submitted!

<b><u>Submittal Type:</u></b>	GEO_WELL
<b><u>Submittal Title:</u></b>	1Q10 GEO_WELL 11102
<b><u>Facility Global ID:</u></b>	T0600100908
<b><u>Facility Name:</u></b>	BP #11102
<b><u>File Name:</u></b>	GEO_WELL.zip
<b><u>Organization Name:</u></b>	Broadbent & Associates, Inc.
<b><u>Username:</u></b>	BROADBENT-C
<b><u>IP Address:</u></b>	67.118.40.90
<b><u>Submittal Date/Time:</u></b>	4/12/2010 11:19:05 AM
<b><u>Confirmation Number:</u></b>	<b>8755746304</b>

STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A EDF FILE

**SUCCESS**

Processing is complete. No errors were found!  
Your file has been successfully submitted!

<b><u>Submittal Type:</u></b>	EDF - Monitoring Report - Quarterly
<b><u>Submittal Title:</u></b>	1Q10 GW Monitoring
<b><u>Facility Global ID:</u></b>	T0600100908
<b><u>Facility Name:</u></b>	BP #11102
<b><u>File Name:</u></b>	720-26203-1rev2.zip
<b><u>Organization Name:</u></b>	Broadbent & Associates, Inc.
<b><u>Username:</u></b>	BROADBENT-C
<b><u>IP Address:</u></b>	67.118.40.90
<b><u>Submittal Date/Time:</u></b>	4/26/2010 5:22:15 PM
<b><u>Confirmation Number:</u></b>	<b>5603074073</b>

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