Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

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Phone: (925) 275-3803
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E-Mail: charles.carmel@bp.com

RECEIVED

8:55 am, Oct 06, 2010

Alameda County
Environmental Health

October 5, 2010

Re: Third Quarter 2010 Status Report
Atlantic Richfield Company Service Station #276
10600 MacArthur Boulevard, Oakland, California
ACEH Case #RO0002565

"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.

Submitted by,

Chuck Carmel
Environmental Business Manager

Attachment

Third Quarter 2010 Semi-Annual
Groundwater Monitoring Report
Atlantic Richfield Company Station #276
10600 MacArthur Boulevard, Oakland, California
ACEH Case #RO0002565

Prepared for

Mr. Chuck Carmel
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

875 Cotting Lane, Suite G
Vacaville, California 95409
(707) 455-7290
www.broadbentinc.com

October 5, 2010

Project No. 06-88-601

Broadbent & Associates, Inc.
875 Cotting Ln., Suite G
Vacaville, CA 95688
(707) 455-7290 Tel
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BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

October 5, 2010

Project No. 06-88-601

Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: Third Quarter 2010 Semi-Annual Groundwater Monitoring Report, Atlantic Richfield Company Station #276, 10600 MacArthur Boulevard, Oakland, California
ACEH Case #RO0002565

Dear Mr. Carmel:

Provided herein is the *Third Quarter 2010 Semi-Annual Groundwater Monitoring Report* for Atlantic Richfield Company Station #276 located at 10600 MacArthur Boulevard, Oakland, Alameda County, California (Site). This report presents results of groundwater monitoring conducted at the Site during the Third Quarter of 2010.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (707) 455-7290.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Thomas A. Sparrowe

Thomas A. Sparrowe, P.G.
Senior Geologist

Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Electronic copy uploaded to GeoTracker

STATION #276 GROUNDWATER MONITORING REPORT

Facility: #276 Address:	10600 MacArthur Boulevard, Oakland, California
Environmental Business Manager:	Mr. Chuck Carmel
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Mr. Tom Sparrowe, PG (707) 455-7290
Consultant Project No.:	06-88-601
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0002565
Facility Permits/Permitting Agency:	NA

WORK PERFORMED THIS QUARTER (Third Quarter 2010):

1. Prepared and submitted *Second Quarter 2009 Status Report* (BAI, 07/19/2010).
2. BAI conducted Third Quarter 2010 groundwater monitoring/sampling on August 10, 2010.
3. ARCO received a *Monitoring Well Destruction* letter from ACEH dated September 16, 2010 that requests that the Site monitoring wells be destroyed as part of the case closure approval process.

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter 2010):

1. Prepare and submit Third Quarter 2010 Semi-Annual Groundwater Monitoring Report (contained herein).
2. As requested by ACEH, BAI will initiate well destruction activities during the Fourth Quarter 2010 and a Monitoring Well Destruction Report will be submitted to ACEH by December 15, 2010.

RESULTS SUMMARY:

Current phase of project:	**Groundwater monitoring/sampling**
Frequency of Groundwater monitoring:	**Semi-Annually (1Q and 3Q) = MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, RW-1, WGR-3**
Frequency of groundwater sampling:	**Semi-Annually (1Q and 3Q) = MW-2, MW-5, MW-6, MW-7 and MW-8** **Annually (1Q) = MW-1, MW-3, MW-4, WGR-3,and RW-1**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**NA**
Depth to groundwater (below TOC):	**16.52 ft (MW-2) to 33.78 ft (MW-6)**
General groundwater flow direction:	**Southwest**
Approximate hydraulic gradient:	**0.003 ft/ft**

DISCUSSION:

Third Quarter 2010 groundwater monitoring and sampling was conducted at Station #276 on August 10, 2010 by BAI. Water levels were gauged in each of the ten wells at the Site. No irregularities were noted during water level gauging. Depth-to-water measurements ranged from 16.02 ft at MW-2 to 32.78 ft at MW-6. Resulting groundwater surface elevations ranged from 43.69 ft above datum in well MW-2 to 32.42 ft in well MW-8. Water level elevations yielded a potentiometric groundwater flow direction and gradient to the southwest at approximately 0.003 ft/ft, relatively consistent with historical data (see Table 3). Groundwater monitoring field data sheets are provided within Appendix A. Measured depths to groundwater and respective groundwater elevations are summarized in Table 1. A Site Location

Map is presented as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Consistent with the current groundwater sampling schedule, water samples were collected from wells MW-2 and MW-5 through MW-8 on August 10, 2010. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-C12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Tert-Amyl Methyl Ether (TAME), Tert-Butyl Alcohol (TBA), Di-Isopropyl Ether(DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl Tert-Butyl Ether (ETBE), Tetrachloroethene (PCE), and Methyl Tert-Butyl Ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Groundwater sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

GRO were detected above the laboratory reporting limit in two of the five wells sampled at concentrations of 230 micrograms per liter (µg/L) and 900 µg/L in wells MW-6 and MW-7, respectively. Benzene, Toluene, and Total Xylenes were not detected above the laboratory reporting limit in any well. TAME was detected above the laboratory reporting limit in two of the five wells sampled at concentrations up to 8.6 µg/L and 14.0 µg/L in wells MW-5 and MW-8, respectively. 1,2-DCA was detected above the laboratory reporting limit in well MW-5 at 5.2 µg/L and in well MW-8 at 0.5 µg/L. MTBE was detected above the laboratory reporting limit in four of the five wells sampled at concentrations up to 140 µg/L in well MW-5. PCE was detected above the laboratory reporting limit in two of the five wells sampled at concentrations up to 830 µg/L in well MW-6. The remaining analytes were not detected above their laboratory reporting limits in the five wells sampled this quarter. Historic laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 2. A copy of the Laboratory Analytical Report, including chain-of-custody documentation is provided in Appendix A. Groundwater 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 within historical minimum and maximum ranges in each well gauged during the Third Quarter 2010. The potentiometric groundwater flow direction and gradient was generally consistent with historical data. Detected analyte concentrations in all wells but MW-6 were within the historical minimum and maximum ranges recorded for each well. Due to the high dilution factor for the MW-6 sample the reporting limit was raised and placed the analytical results above the maximum historical limit for that well. The next groundwater monitoring and sampling event will be conducted during the First Quarter of 2011.

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 Calscience Environmental Laboratories, Inc. (Garden Grove, 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 Atlantic Richfield Company. It is possible that variations in soil or groundwater 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, Station #276, 10600 MacArthur Boulevard, Oakland, California

Drawing 2. Groundwater Elevation Contour and Analytical Summary Map, August 10, 2010, Station #276, 10600 MacArthur Boulevard, Oakland, California

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #276, 10600 MacArthur Blvd., Oakland, California

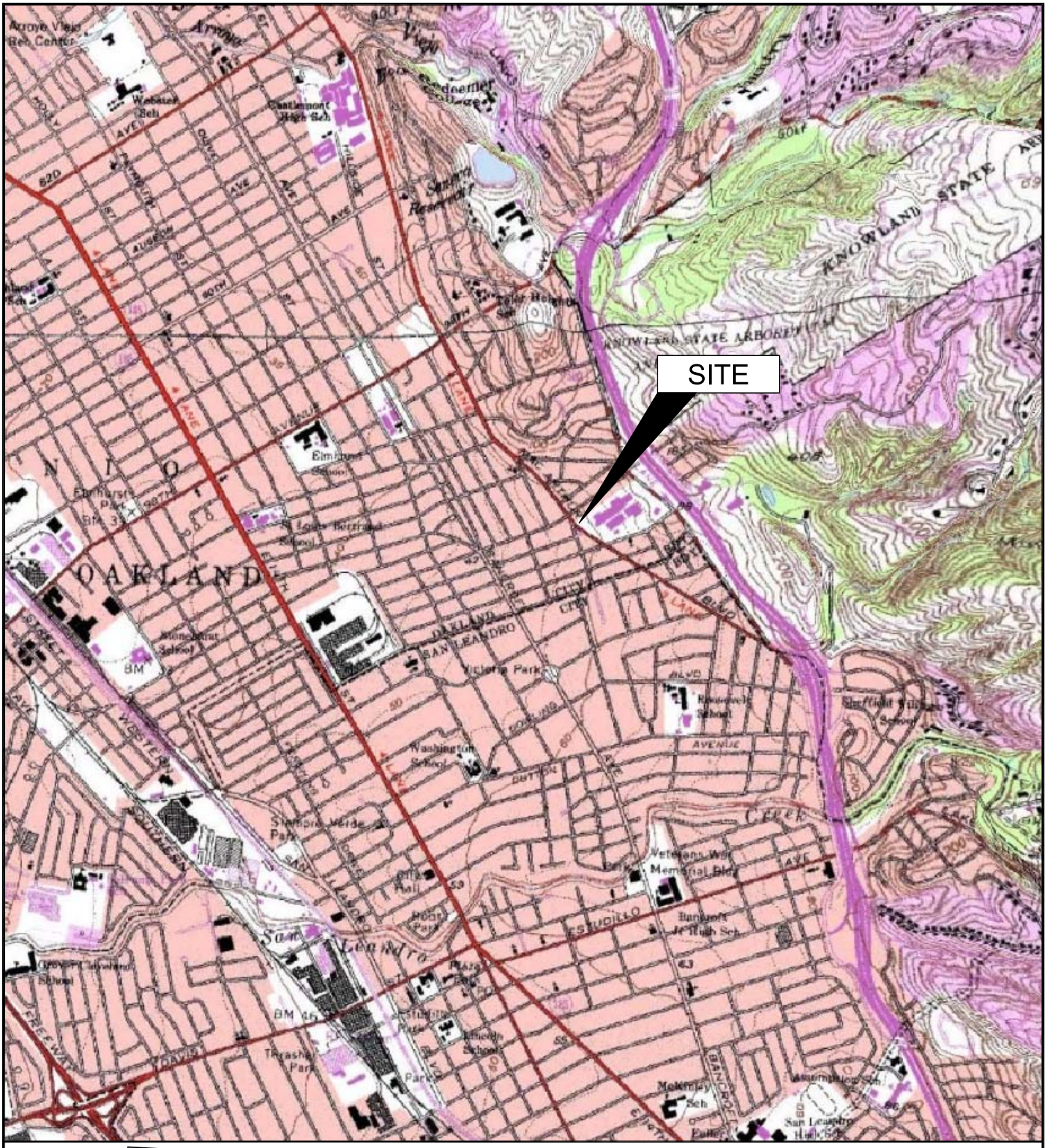
Table 2. Summary of Fuel Additives Analytical Data, Station #276, 10600 MacArthur Blvd., Oakland, California

Table 3. Historical Groundwater Flow Direction and Gradient, Station #276, 10600 MacArthur Blvd., Oakland, California

Appendix A. BAI Groundwater Sampling Data Package (Includes Field Data Sheets, Non-Hazardous Waste Data Form, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)

Appendix B. GeoTracker Upload Confirmation Receipts

DRAWINGS



N

0 2000 4000

APPROXIMATE SCALE (ft)

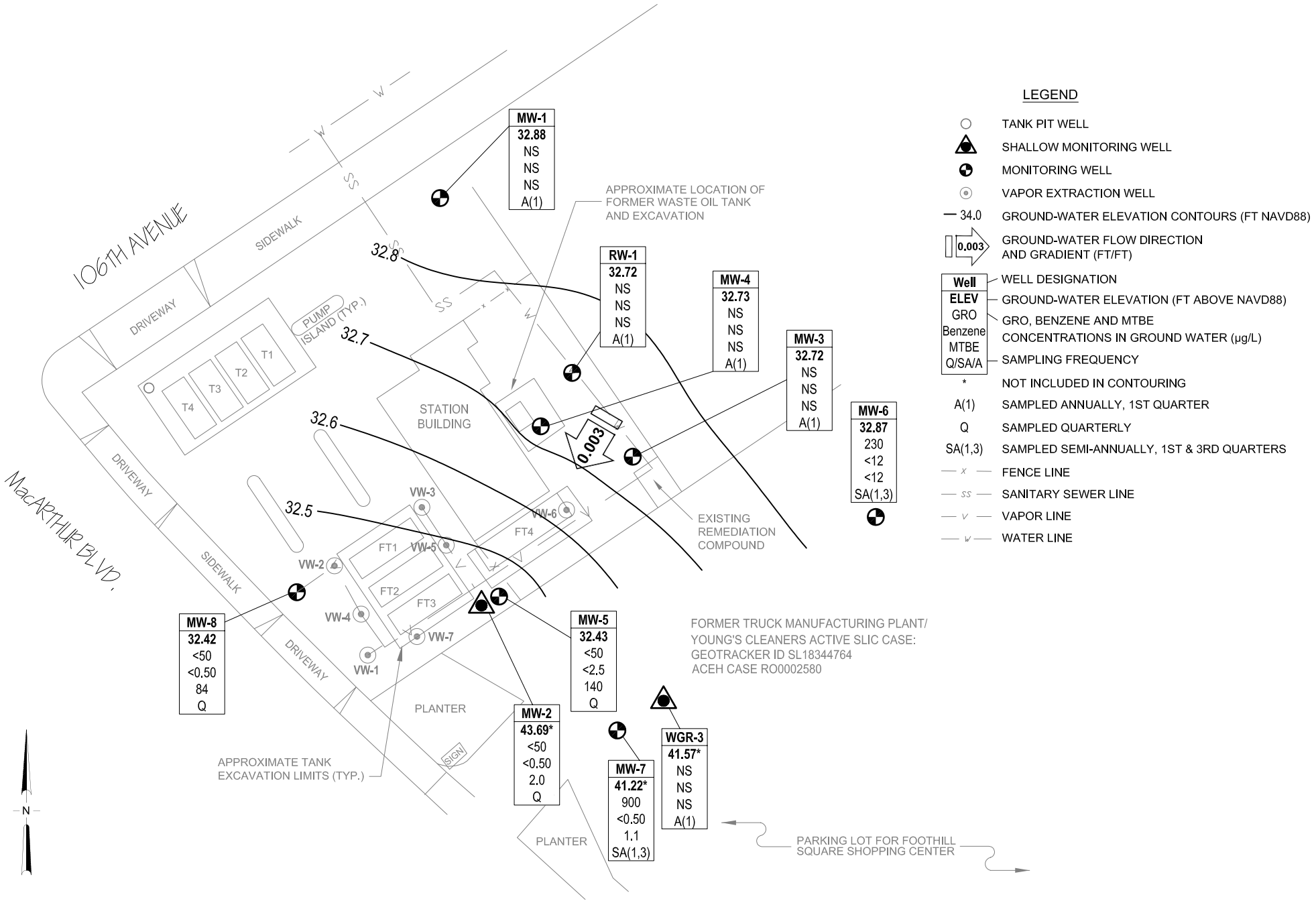
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-601 Date: 9/1/09

Station #276
10600 MacArthur Boulevard
Oakland, California

Site Location Map

Drawing
1



0 40 80 SCALE (ft)	BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, California Project No.: 06-88-601 Date: 9/10/2010	Station #276 10600 MacArthur Boulevard Oakland, California	Ground-Water Elevation Contour and Analytical Summary Map August 10, 2010	Drawing 2

TABLES

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
12/17/2000	--		55.92	23.50	**28.50**	29.16	26.76	5.09	--	--	--	--	--	--	--
12/28/2001	--		55.92	23.50	**28.50**	27.38	28.54	8.8	--	--	--	--	--	--	--
11/27/2002	NP		55.92	23.50	**28.50**	29.45	26.47	4.2	--	--	--	--	--	2.3	6.7
7/22/2003	NP		55.92	23.50	**28.50**	27.58	28.34	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	6.7
11/07/2003	NP		55.92	23.50	28.50	30.42	25.50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	6.6
02/03/2004	NP		55.92	23.50	28.50	38.80	17.12	--	--	--	--	--	--	1.5	--
05/04/2004	NP	g	61.26	23.50	28.50	26.67	34.59	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.6
08/12/2004	NP		61.26	23.50	28.50	29.49	31.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	6.6
11/10/2004	NP		61.26	23.50	28.50	30.29	30.97	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	6.6
02/03/2005	NP		61.26	23.50	28.50	26.23	35.03	--	--	--	--	--	--	0.89	--
05/09/2005	--		61.26	23.50	28.50	22.93	38.33	--	--	--	--	--	--	--	--
08/11/2005	--		61.26	23.50	28.50	26.11	35.15	--	--	--	--	--	--	--	--
11/18/2005	--		61.26	23.50	28.50	29.14	32.12	--	--	--	--	--	--	--	--
02/01/2006	NP	i	61.26	23.50	28.50	24.15	37.11	53	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.7
5/30/2006	--		61.26	23.50	**28.50**	21.25	40.01	--	--	--	--	--	--	--	--
8/10/2006	--		61.26	23.50	28.50	24.70	36.56	--	--	--	--	--	--	--	--
11/2/2006	--		61.26	23.50	28.50	27.71	33.55	--	--	--	--	--	--	--	--
2/6/2007	NP		61.26	23.50	28.50	28.12	33.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	7.57
5/8/2007	--		61.26	23.50	28.50	27.27	33.99	--	--	--	--	--	--	--	--
8/14/2007	--		61.26	23.50	28.50	29.70	31.56	--	--	--	--	--	--	--	--
11/13/2007	--		61.26	23.50	28.50	30.92	30.34	--	--	--	--	--	--	--	--
2/29/2008	NP		61.26	23.50	28.50	26.21	35.05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.31	7.63
5/17/2008	--		61.26	23.50	28.50	28.50	32.76	--	--	--	--	--	--	--	--
8/12/2008	--		61.26	23.50	28.50	30.50	30.76	--	--	--	--	--	--	--	--
10/21/2008	--		61.26	23.50	28.50	31.85	29.41	--	--	--	--	--	--	--	--
1/20/2009	NP		61.26	23.50	28.50	31.61	29.65	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.29	6.83
4/21/2009	--		61.26	23.50	28.50	27.83	33.43	--	--	--	--	--	--	--	--
7/21/2009	--		61.26	23.50	28.50	30.06	31.20	--	--	--	--	--	--	--	--
2/17/2010	NP		61.26	23.50	28.50	27.27	33.99	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.84	6.54
8/10/2010	--		**61.26**	**23.50**	**28.50**	**28.38**	**32.88**	--	--	--	--	--	--	--	--

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2															
12/17/2000	--		55.10	15.00	**25.00**	15.72	39.38	--	--	--	--	--	--	--	--
12/28/2001	--		55.10	15.00	**25.00**	27.38	27.72	--	--	--	--	--	--	--	--
11/27/2002	--		55.10	15.00	**25.00**	16.35	38.75	--	--	--	--	--	--	--	--
7/22/2003	--		55.10	15.00	**25.00**	16.20	38.90	--	--	--	--	--	--	--	--
11/07/2003	P		55.10	15.00	25.00	18.22	36.88	990	<5.0	<5.0	<5.0	<5.0	110	1.8	6.7
02/03/2004	P		55.10	15.00	25.00	13.63	41.47	180	<2.5	<2.5	2.6	4.1	55	1.8	6.5
05/04/2004	P	g	60.21	15.00	25.00	15.76	44.45	290	<2.5	<2.5	<2.5	<2.5	70	0.6	6.3
08/12/2004	P		60.21	15.00	25.00	17.21	43.00	<250	<2.5	<2.5	3.2	<2.5	49	1.6	6.6
11/10/2004	P		60.21	15.00	25.00	15.90	44.31	270	<1.0	<1.0	1.6	<1.0	90	0.9	6.2
02/03/2005	P		60.21	15.00	25.00	14.29	45.92	480	1.7	<0.50	2.0	1.4	37	1.53	6.5
05/09/2005	P		60.21	15.00	25.00	14.38	45.83	320	<0.50	<0.50	<0.50	0.64	56	0.57	6.5
08/11/2005	P		60.21	15.00	25.00	15.97	44.24	320	<0.50	<0.50	<0.50	<0.50	50	1.0	6.3
11/18/2005	P		60.21	15.00	25.00	17.66	42.55	990	3.2	0.64	3.8	1.6	49	3.23	6.5
02/01/2006	P		60.21	15.00	25.00	12.50	47.71	<50	<0.50	<0.50	<0.50	<0.50	3.1	1.0	6.4
5/30/2006	P		60.21	15.00	**25.00**	13.25	46.96	280	<0.50	<0.50	<0.50	<0.50	64	1.76	6.5
8/11/2006	P	Water Levels 8/10	60.21	15.00	25.00	15.90	44.31	210	<0.50	<0.50	<0.50	<0.50	28	0.63	6.4
11/2/2006	P		60.21	15.00	25.00	17.38	42.83	270	0.64	<0.50	<0.50	<0.50	40	1.41	6.82
2/6/2007	NP	i	60.21	15.00	25.00	15.48	44.73	110	<0.50	<0.50	<0.50	<0.50	39	0.67	6.95
5/8/2007	NP		60.21	15.00	25.00	15.40	44.81	140	<0.50	<0.50	<0.50	<0.50	25	0.84	6.85
8/14/2007	NP		60.21	15.00	25.00	17.40	42.81	190	<0.50	<0.50	<0.50	<0.50	19	0.71	6.75
11/13/2007	P		60.21	15.00	25.00	16.11	44.10	170	<0.50	<0.50	<0.50	<0.50	27	1.99	6.32
2/29/2008	P		60.21	15.00	25.00	13.37	46.84	<50	<0.50	<0.50	<0.50	<0.50	6.1	1.80	7.26
5/17/2008	--	m	60.21	15.00	25.00	--	--	--	--	--	--	--	--	--	--
8/12/2008	NP		60.21	15.00	25.00	16.75	43.46	56	<0.50	<0.50	<0.50	<0.50	14	0.84	8.97
10/21/2008	NP		60.21	15.00	25.00	18.05	42.16	460	0.81	<0.50	<0.50	<0.50	16	2.98	7.01
1/20/2009	NP		60.21	15.00	25.00	15.75	44.46	200	<0.50	<0.50	<0.50	<0.50	6.8	0.91	6.73
4/21/2009	NP		60.21	15.00	25.00	15.23	44.98	74	<0.50	<0.50	<0.50	<0.50	5.5	0.94	6.75
7/21/2009	NP		60.21	15.00	25.00	16.18	44.03	<50	<0.50	<0.50	<0.50	<0.50	12	1.58	6.53
2/17/2010	P		60.21	15.00	25.00	14.05	46.16	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.39	6.57
8/10/2010	**NP**		**60.21**	**15.00**	**25.00**	**16.52**	**43.69**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.0**	**1.05**	**7.88**

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3															
12/17/2000	--		56.55	22.00	**27.00**	29.78	26.77	158	--	--	--	--	--	--	--
12/28/2001	--		56.55	22.00	**27.00**	27.95	28.60	310	20	1.5	13	--	--	--	--
11/27/2002	NP		56.55	22.00	**27.00**	30.10	26.45	110	--	--	--	--	--	2.0	7.2
7/22/2003	NP		56.55	22.00	**27.00**	28.32	28.23	120	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	5.9
11/07/2003	NP		56.55	22.00	27.00	30.86	25.69	70	<0.50	<0.50	<0.50	<0.50	<0.50	2.8	6.5
02/03/2004	NP		56.55	22.00	27.00	27.65	28.90	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	6.7
05/04/2004	NP	g	61.89	22.00	27.00	27.57	34.32	<100	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	6.4
08/12/2004	NP		61.89	22.00	27.00	30.31	31.58	52	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.3
11/10/2004	NP		61.89	22.00	27.00	31.00	30.89	91	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	6.7
02/03/2005	NP	i	61.89	22.00	27.00	26.85	35.04	180	<0.50	<0.50	<0.50	<0.50	<0.50	2.25	6.5
05/09/2005	--		61.89	22.00	27.00	23.72	38.17	--	--	--	--	--	--	--	--
08/11/2005	--		61.89	22.00	27.00	26.84	35.05	--	--	--	--	--	--	--	--
11/18/2005	--		61.89	22.00	27.00	29.82	32.07	--	--	--	--	--	--	--	--
02/01/2006	NP		61.89	22.00	27.00	24.80	37.09	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	6.4
5/30/2006	--		61.89	22.00	**27.00**	21.77	40.12	--	--	--	--	--	--	--	--
8/10/2006	--		61.89	22.00	27.00	25.37	36.52	--	--	--	--	--	--	--	--
11/2/2006	--		61.89	22.00	27.00	28.43	33.46	--	--	--	--	--	--	--	--
2/6/2007	NP	i, k	61.86	22.00	27.00	28.85	33.01	50	<0.50	<0.50	<0.50	<0.50	<0.50	1.27	8.63
5/8/2007	--	k	61.86	22.00	27.00	27.98	33.88	--	--	--	--	--	--	--	--
8/14/2007	--	k	61.86	22.00	27.00	30.41	31.45	--	--	--	--	--	--	--	--
11/13/2007	--		61.86	22.00	27.00	31.63	30.23	--	--	--	--	--	--	--	--
2/29/2008	NP	l	61.86	22.00	27.00	26.86	35.00	79	<0.50	<0.50	<0.50	<0.50	0.54	1.13	7.04
5/17/2008	--		61.86	22.00	27.00	29.22	32.64	--	--	--	--	--	--	--	--
8/12/2008	--		61.86	22.00	27.00	31.22	30.64	--	--	--	--	--	--	--	--
10/21/2008	--		61.86	22.00	27.00	32.53	29.33	--	--	--	--	--	--	--	--
1/20/2009	NP		61.86	22.00	27.00	32.31	29.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.11	6.72
4/21/2009	--		61.86	22.00	27.00	28.48	33.38	--	--	--	--	--	--	--	--
7/21/2009	--		61.86	22.00	27.00	30.80	31.06	--	--	--	--	--	--	--	--
2/17/2010	NP	n	61.86	22.00	27.00	27.89	33.97	100	<0.50	<0.50	<0.50	<0.50	1.0	1.26	6.62
8/10/2010	--		**61.86**	**22.00**	**27.00**	**29.14**	**32.72**	--	--	--	--	--	--	--	--

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4															
12/17/2000	--		55.98	25.00	**45.00**	29.22	26.76	225	--	--	--	--	--	--	--
12/28/2001	--		55.98	25.00	**45.00**	27.37	28.61	160	1.2	--	--	--	--	--	--
11/27/2002	NP		55.98	25.00	**45.00**	29.55	26.43	95	--	--	--	--	--	3.7	6.7
7/22/2003	NP		55.98	25.00	**45.00**	27.73	28.25	130	<0.50	<0.50	<0.50	<0.50	<0.50	2.9	6.6
11/07/2003	NP		55.98	25.00	45.00	30.41	25.57	59	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	6.5
02/03/2004	NP		55.98	25.00	45.00	27.01	28.97	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	7.1
05/04/2004	NP	g	61.30	25.00	45.00	26.91	34.39	<100	<1.0	<1.0	<1.0	<1.0	<1.0	2.1	6.5
08/12/2004	NP		61.30	25.00	45.00	29.76	31.54	58	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	6.4
11/10/2004	NP		61.30	25.00	45.00	30.40	30.90	69	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	6.6
02/03/2005	NP	i	61.30	25.00	45.00	26.28	35.02	51	<0.50	<0.50	<0.50	<0.50	<0.50	3.77	6.8
05/09/2005	--		61.30	25.00	45.00	23.14	38.16	--	--	--	--	--	--	--	--
08/11/2005	--		61.30	25.00	45.00	26.23	35.07	--	--	--	--	--	--	--	--
11/18/2005	--		61.30	25.00	45.00	29.24	32.06	--	--	--	--	--	--	--	--
02/01/2006	P	i	61.30	25.00	45.00	24.20	37.10	330	<0.50	<0.50	<0.50	<0.50	<0.50	1.7	7.0
5/30/2006	--		61.30	25.00	**45.00**	21.26	40.04	--	--	--	--	--	--	--	--
8/10/2006	--		61.30	25.00	45.00	24.62	36.68	--	--	--	--	--	--	--	--
11/2/2006	--		61.30	25.00	45.00	27.90	33.40	--	--	--	--	--	--	--	--
2/6/2007	NP	i	61.30	25.00	45.00	28.28	33.02	55	<0.50	<0.50	<0.50	<0.50	<0.50	1.21	8.28
5/8/2007	--		61.30	25.00	45.00	27.40	33.90	--	--	--	--	--	--	--	--
8/14/2007	--		61.30	25.00	45.00	29.88	31.42	--	--	--	--	--	--	--	--
11/13/2007	--		61.30	25.00	45.00	31.05	30.25	--	--	--	--	--	--	--	--
2/29/2008	NP	l	61.30	25.00	45.00	26.30	35.00	81	<0.50	<0.50	<0.50	<0.50	<0.50	3.57	7.44
5/17/2008	--		61.30	25.00	45.00	28.65	32.65	--	--	--	--	--	--	--	--
8/12/2008	--		61.30	25.00	45.00	30.68	30.62	--	--	--	--	--	--	--	--
10/21/2008	--		61.30	25.00	45.00	32.00	29.30	--	--	--	--	--	--	--	--
1/20/2009	NP		61.30	25.00	45.00	31.73	29.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.18	6.76
4/21/2009	--		61.30	25.00	45.00	27.91	33.39	--	--	--	--	--	--	--	--
7/21/2009	--		61.30	25.00	45.00	30.22	31.08	--	--	--	--	--	--	--	--
2/17/2010	NP	n	61.30	25.00	45.00	27.30	34.00	94	<0.50	<0.50	<0.50	<0.50	0.85	2.58	6.64
8/10/2010	--		**61.30**	**25.00**	**45.00**	**28.57**	**32.73**	--	--	--	--	--	--	--	--

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-5															
12/17/2000	--		55.43	23.50	**31.50**	28.82	26.61	1,040	--	--	--	--	--	--	--
12/28/2001	--		55.43	23.50	**31.50**	26.91	28.52	3,200	190	2/4/1900	140	1.9/3.2/2.0	--	--	--
11/27/2002	P		55.43	23.50	**31.50**	29.15	26.28	110	--	--	--	--	--	1.4	6.4
7/22/2003	P		55.43	23.50	**31.50**	27.43	28.00	160	<1.0	<1.0	<1.0	<1.0	110	1.5	6.6
11/07/2003	P		55.43	23.50	31.50	29.99	25.44	<250	<2.5	<2.5	<2.5	<2.5	120	0.6	6.2
02/03/2004	P		55.43	23.50	31.50	26.55	28.88	85	<2.5	<2.5	<2.5	<2.5	71	1.7	6.7
05/04/2004	P	g	60.73	23.50	31.50	26.47	34.26	<250	<2.5	<2.5	<2.5	<2.5	150	0.9	6.2
08/12/2004	P		60.73	23.50	31.50	29.49	31.24	<250	<2.5	<2.5	<2.5	<2.5	140	1.8	6.3
11/10/2004	P		60.73	23.50	31.50	30.15	30.58	170	<1.0	<1.0	<1.0	<1.0	150	1.0	6.3
02/03/2005	P		60.73	23.50	31.50	25.85	34.88	100	<0.50	<0.50	<0.50	<0.50	16	1.65	6.5
05/09/2005	P		60.73	23.50	31.50	22.85	37.88	340	<2.5	<2.5	<2.5	<2.5	140	0.87	6.3
08/11/2005	P		60.73	23.50	31.50	26.05	34.68	<250	<2.5	<2.5	<2.5	<2.5	160	1.6	6.3
11/18/2005	P		60.73	23.50	31.50	29.07	31.66	<250	<2.5	<2.5	<2.5	<2.5	120	1.98	6.3
02/01/2006	P	i	60.73	23.50	31.50	23.70	37.03	520	<1.2	<1.2	<1.2	<1.2	100	0.4	6.4
5/30/2006	P		60.73	23.50	**31.50**	21.03	39.70	220	<2.5	<2.5	<2.5	<2.5	230	1.32	6.3
8/11/2006	P	Water Levels 8/10	60.73	23.50	31.50	24.77	35.96	150	<2.5	<2.5	<2.5	<2.5	170	0.68	6.1
11/2/2006	P		60.73	23.50	31.50	27.65	33.08	100	<1.0	<1.0	<1.0	<1.0	160	1.43	6.52
2/6/2007	NP	i	60.73	23.50	31.50	28.00	32.73	150	<1.0	<1.0	<1.0	<1.0	120	1.19	7.33
5/8/2007	NP	i	60.73	23.50	31.50	27.12	33.61	130	<1.0	<1.0	<1.0	<1.0	180	0.82	6.42
8/14/2007	NP	i	60.73	23.50	31.50	29.62	31.11	110	<0.50	<0.50	<0.50	<0.50	150	1.32	6.97
11/13/2007	NP		60.73	23.50	31.50	30.77	29.96	950	<0.50	<0.50	<0.50	<0.50	110	1.83	6.50
2/29/2008	NP	l	60.73	23.50	31.50	25.86	34.87	110	<0.50	<0.50	<0.50	<0.50	120	1.04	7.21
5/17/2008	NP		60.73	23.50	31.50	28.40	32.33	<50	<1.0	<1.0	<1.0	<1.0	190	0.85	6.07
8/12/2008	NP		60.73	23.50	31.50	30.44	30.29	<50	<2.5	<2.5	<2.5	<2.5	140	1.04	9.42
10/21/2008	NP		60.73	23.50	31.50	31.73	29.00	<50	<2.5	<2.5	<2.5	<2.5	170	2.90	6.99
1/20/2009	NP		60.73	23.50	31.50	31.39	29.34	69	<5.0	<5.0	<5.0	<5.0	130	1.08	6.57
4/21/2009	NP		60.73	23.50	31.50	27.48	33.25	190	<2.5	<2.5	<2.5	<2.5	130	1.12	6.62
7/21/2009	NP		60.73	23.50	31.50	29.99	30.74	<50	<2.0	<2.0	<2.0	<2.0	140	2.14	6.58
2/17/2010	NP	n	60.73	23.50	31.50	27.85	32.88	220	<2.0	<2.0	<2.0	<2.0	110	1.10	6.42
8/10/2010	**NP**		**60.73**	**23.50**	**31.50**	**28.30**	**32.43**	**<50**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**140**	**3.08**	**6.97**

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ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-6															
12/17/2000	--		61.21	37.50	56.00	34.61	26.60	--	--	--	--	--	--	--	--
12/28/2001	--		61.21	37.50	56.00	32.80	28.41	--	--	--	--	--	--	--	--
11/27/2002	--		61.21	37.50	56.00	35.00	26.21	--	--	--	--	--	--	--	--
7/22/2003	--		61.21	37.50	56.00	33.17	28.04	--	--	--	--	--	--	--	--
11/07/2003	P	d, e	61.21	37.50	56.00	35.70	25.51	<500	<5.0	<5.0	<5.0	<5.0	<5.0	2.7	6.9
02/03/2004	P		61.21	37.50	56.00	32.17	29.04	84	<2.5	<2.5	<2.5	<2.5	<2.5	1.9	7.0
05/04/2004	P	g	66.65	37.50	56.00	32.07	34.58	<250	<2.5	<2.5	<2.5	<2.5	<2.5	2.0	6.7
08/12/2004	P		66.65	37.50	56.00	34.90	31.75	660	<0.50	<0.50	<0.50	<0.50	0.81	1.4	6.9
11/10/2004	P		66.65	37.50	56.00	35.70	30.95	640	<0.50	<0.50	<0.50	<0.50	0.89	2.6	6.8
02/03/2005	P	i	66.65	37.50	56.00	31.48	35.17	77	<0.50	<0.50	<0.50	<0.50	<0.50	1.73	7.0
05/09/2005	--		66.65	37.50	56.00	28.37	38.28	--	--	--	--	--	--	--	--
08/11/2005	P		66.65	37.50	56.00	31.40	35.25	630	<0.50	<0.50	<0.50	<0.50	0.77	1.9	6.3
11/18/2005	--		66.65	37.50	56.00	34.50	32.15	--	--	--	--	--	--	--	--
02/01/2006	P	i	66.65	37.50	56.00	29.40	37.25	760	<5.0	<5.0	<5.0	<5.0	<5.0	2.1	6.9
5/30/2006	--		66.65	37.50	56.00	26.51	40.14	--	--	--	--	--	--	--	--
8/11/2006	P	Water Levels 8/10	66.65	37.50	56.00	30.10	36.55	790	<5.0	<5.0	<5.0	<5.0	<5.0	1.32	6.7
11/2/2006	--		66.65	37.50	56.00	33.12	33.53	--	--	--	--	--	--	--	--
2/6/2007	P	i	66.65	37.50	56.00	33.53	33.12	510	<0.50	<0.50	<0.50	<0.50	0.80	0.68	6.84
5/8/2007	--		66.65	37.50	56.00	32.65	34.00	--	--	--	--	--	--	--	--
8/14/2007	P	i	66.65	37.50	56.00	35.10	31.55	510	<0.50	<0.50	<0.50	<0.50	0.91	1.60	7.10
11/13/2007	--		66.65	37.50	56.00	36.31	30.34	--	--	--	--	--	--	--	--
2/29/2008	P	l	66.65	37.50	56.00	31.50	35.15	72	<0.50	<0.50	<0.50	<0.50	<0.50	4.41	7.77
5/17/2008	--		66.65	37.50	56.00	33.88	32.77	--	--	--	--	--	--	--	--
8/12/2008	P		66.65	37.50	56.00	35.91	30.74	250	<2.5	<2.5	<2.5	<2.5	<2.5	0.79	9.17
10/21/2008	--		66.65	37.50	56.00	37.22	29.43	--	--	--	--	--	--	--	--
1/20/2009	P	n	66.65	37.50	56.00	37.02	29.63	240	<2.5	<2.5	<2.5	<2.5	<2.5	0.75	6.99
4/21/2009	--		66.65	37.50	56.00	33.10	33.55	--	--	--	--	--	--	--	--
7/21/2009	P	n, o	66.65	37.50	56.00	35.45	31.20	180	<10	<10	<10	<10	<10	3.20	6.60
2/17/2010	P	n	66.65	37.50	56.00	32.58	34.07	220	<10	<10	<10	<10	<10	1.49	6.79
8/10/2010	**P**	**n**	**66.65**	**37.50**	**56.00**	**33.78**	**32.87**	**230**	**<12**	**<12**	**<12**	**<12**	**<12**	**1.51**	**6.65**

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ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE		
MW-7															
12/17/2000	--		58.22	17.50	37.5	19.94	38.28	--	--	--	--	--	--	--	--
12/28/2001	--		58.22	17.50	37.5	17.29	40.93	--	--	--	--	--	--	--	--
11/27/2002	--		58.22	17.50	37.5	21.30	36.92	--	--	--	--	--	--	--	--
7/22/2003	--		58.22	17.50	37.5	21.36	36.86	--	--	--	--	--	--	--	--
11/07/2003	P	d	58.22	17.50	37.5	23.76	34.46	3,200	15	<2.5	130	11	53	2.2	6.8
02/03/2004	P		58.22	17.50	37.5	17.74	40.48	53	<0.50	<0.50	<0.50	0.54	32	1.9	6.4
02/03/2005	P		63.54	17.50	37.5	18.13	45.41	61	<0.50	<0.50	<0.50	<0.50	14	3.39	6.5
05/09/2005	--		63.54	17.50	37.5	18.39	45.15	--	--	--	--	--	--	--	--
08/11/2005	P		63.54	17.50	37.5	21.47	42.07	1,500	1.8	<1.0	4.2	1.2	21	2.0	6.3
11/18/2005	--		63.54	17.50	37.5	22.41	41.13	--	--	--	--	--	--	--	--
02/01/2006	P		63.54	17.50	37.5	16.65	46.89	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.3	6.3
5/30/2006	--		63.54	17.50	37.50	19.22	44.32	--	--	--	--	--	--	--	--
8/11/2006	P	Water Levels 8/10	63.54	17.50	37.50	21.28	42.26	1,800	1.3	0.55	5.0	1.4	41	1.22	6.4
11/2/2006	--		63.54	17.50	37.50	22.61	40.93	--	--	--	--	--	--	--	--
2/6/2007	NP		63.54	17.50	37.50	19.79	43.75	530	<0.50	<0.50	<0.50	<0.50	8.4	0.93	7.23
5/8/2007	--		63.54	17.50	37.50	19.62	43.92	--	--	--	--	--	--	--	--
8/14/2007	NP		63.54	17.50	37.50	22.72	40.82	1,900	1.2	<0.50	2.7	1.3	9.8	0.94	7.5
11/13/2007	--		63.54	17.50	37.50	20.92	42.62	--	--	--	--	--	--	--	--
2/29/2008	P	l	63.54	17.50	37.50	17.40	46.14	64	<0.50	<0.50	<0.50	<0.50	1.5	1.23	7.35
5/17/2008	--		63.54	17.50	37.50	21.10	42.44	--	--	--	--	--	--	--	--
8/12/2008	NP		63.54	17.50	37.50	21.67	41.87	2,300	3.3	0.82	13	2.2	7.0	0.63	9.60
10/21/2008	--		63.54	17.50	37.50	24.14	39.40	--	--	--	--	--	--	--	--
1/20/2009	NP		63.54	17.50	37.50	20.81	42.73	4,700	3.5	0.81	11	3.2	<0.50	0.69	6.67
4/21/2009	--		63.54	17.50	37.50	19.26	44.28	--	--	--	--	--	--	--	--
7/21/2009	NP		63.54	17.50	37.50	21.25	42.29	1,400	0.73	0.51	<0.50	0.83	2.2	2.71	6.82
2/17/2010	NP		63.54	17.50	37.50	17.96	45.58	<50	<0.50	<0.50	<0.50	<0.50	0.51	0.76	6.38
8/10/2010	**NP**		**63.54**	**17.50**	**37.50**	**22.32**	**41.22**	**900**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**1.1**	**1.53**	**6.66**
MW-8															
12/17/2000	--		53.65	29.00	49.00	27.02	26.63	--	--	--	--	--	--	--	--
12/28/2001	--		53.65	29.00	49.00	24.99	28.66	--	--	--	--	--	--	--	--

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-8 Cont.															
11/27/2002	--		53.65	29.00	**49.00**	27.45	26.20	--	--	--	--	--	--	--	--
7/22/2003	--		53.65	29.00	**49.00**	25.74	27.91	--	--	--	--	--	--	--	--
11/07/2003	P		53.65	29.00	49.00	28.27	25.38	<500	<5.0	<5.0	<5.0	<5.0	440	2.6	6.5
02/03/2004	P	f	53.65	29.00	49.00	24.80	28.85	170	<12	<12	<12	<12	470	3.0	6.7
05/04/2004	P	g	58.96	29.00	49.00	24.81	34.15	<1,000	<10	<10	<10	<10	700	3.8	6.4
08/12/2004	P		58.96	29.00	49.00	27.72	31.24	<2,500	<25	<25	<25	<25	400	3.4	6.5
11/10/2004	P		58.96	29.00	49.00	28.41	30.55	<500	<5.0	<5.0	<5.0	<5.0	480	3.4	6.3
02/03/2005	P		58.96	29.00	49.00	24.01	34.95	<50	<0.50	<0.50	<0.50	<0.50	45	1.43	6.4
05/09/2005	P	i	58.96	29.00	49.00	21.07	37.89	640	<5.0	<5.0	<5.0	<5.0	440	1.06	6.4
08/11/2005	P		58.96	29.00	49.00	24.32	34.64	<500	<5.0	<5.0	<5.0	<5.0	420	5.0	6.1
11/18/2005	P		58.96	29.00	49.00	27.35	31.61	<500	<5.0	<5.0	<5.0	<5.0	390	3.51	6.4
02/01/2006	P	i	58.96	29.00	49.00	22.00	36.96	520	<5.0	<5.0	<5.0	<5.0	600	0.5	6.3
5/30/2006	P		58.96	29.00	**49.00**	19.25	39.71	310	<5.0	<5.0	<5.0	<5.0	480	1.35	6.3
8/11/2006	P	Water Levels 8/10	58.96	29.00	49.00	22.95	36.01	320	<0.50	<0.50	<0.50	<0.50	630	0.65	6.2
11/2/2006	P		58.96	29.00	49.00	25.98	32.98	370	<2.5	<2.5	<2.5	<2.5	660	1.46	6.61
2/6/2007	P	i	58.96	29.00	49.00	26.27	32.69	66	<0.50	<0.50	<0.50	<0.50	60	0.65	6.64
5/8/2007	P	i, j (MTBE)	58.96	29.00	49.00	25.35	33.61	440	<0.50	<0.50	<0.50	<0.50	490	1.35	6.60
8/14/2007	P		58.96	29.00	49.00	27.92	31.04	250	<0.50	<0.50	<0.50	<0.50	510	2.80	6.88
11/13/2007	P		58.96	29.00	49.00	29.05	29.91	290	<2.5	<2.5	<2.5	<2.5	400	3.14	6.38
2/29/2008	P		58.96	29.00	49.00	24.03	34.93	<50	<0.50	<0.50	<0.50	<0.50	300	1.54	7.21
5/17/2008	--	m	58.96	29.00	49.00	--	--	--	--	--	--	--	--	--	--
8/12/2008	P		58.96	29.00	49.00	28.70	30.26	55	<2.5	<2.5	<2.5	<2.5	310	1.37	8.92
10/21/2008	P		58.96	29.00	49.00	29.95	29.01	150	<5.0	5.3	<5.0	22	260	1.26	7.05
1/20/2009	NP		58.96	29.00	49.00	29.52	29.44	<50	<0.50	<0.50	<0.50	<0.50	35	1.27	6.84
4/21/2009	P		58.96	29.00	49.00	25.58	33.38	<50	<1.0	<1.0	<1.0	<1.0	48	1.17	6.70
7/21/2009	P		58.96	29.00	49.00	28.17	30.79	<50	<0.50	<0.50	<0.50	<0.50	130	2.86	6.62
2/17/2010	P		58.96	29.00	49.00	24.90	34.06	<50	<0.50	<0.50	<0.50	<0.50	10	2.17	6.36
8/10/2010	**P**		**58.96**	**29.00**	**49.00**	**26.54**	**32.42**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**84**	**1.90**	**6.7**
RW-1															
12/17/2000	--		56.32	36.00	**51.00**	29.57	26.75	--	--	--	--	--	--	--	--

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
RW-1 Cont.															
12/28/2001	--		56.32	36.00	**51.00**	27.64	28.68	--	--	--	--	--	--	--	--
11/27/2002	--		56.32	36.00	**51.00**	29.93	26.39	--	--	--	--	--	--	--	--
7/22/2003	--		56.32	36.00	**51.00**	28.09	28.23	--	--	--	--	--	--	--	--
11/07/2003	P		56.32	36.00	51.00	30.64	25.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	7.0
02/03/2004	P		56.32	36.00	51.00	27.28	29.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.7	7.1
05/04/2004	P	g	61.65	36.00	51.00	27.16	34.49	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.4	6.8
08/12/2004	P		61.65	36.00	51.00	30.10	31.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	7.1
11/10/2004	P		61.65	36.00	51.00	30.79	30.86	<100	<0.50	<0.50	<0.50	<0.50	<0.50	5.7	6.9
02/03/2005	P		61.65	36.00	51.00	26.61	35.04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.57	7.1
05/09/2005	--		61.65	36.00	51.00	23.51	38.14	--	--	--	--	--	--	--	--
08/11/2005	--		61.65	36.00	51.00	26.60	35.05	--	--	--	--	--	--	--	--
11/18/2005	--		61.65	36.00	51.00	29.65	32.00	--	--	--	--	--	--	--	--
02/01/2006	P		61.65	36.00	51.00	24.65	37.00	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	7.0
5/30/2006	--		61.65	36.00	**51.00**	21.69	39.96	--	--	--	--	--	--	--	--
8/10/2006	--		61.65	36.00	51.00	25.31	36.34	--	--	--	--	--	--	--	--
11/2/2006	--		61.65	36.00	51.00	28.28	33.37	--	--	--	--	--	--	--	--
2/6/2007	NP		61.65	36.00	51.00	28.63	33.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.21	6.92
5/8/2007	--		61.65	36.00	51.00	27.77	33.88	--	--	--	--	--	--	--	--
8/14/2007	--		61.65	36.00	51.00	30.23	31.42	--	--	--	--	--	--	--	--
11/13/2007	--		61.65	36.00	51.00	31.41	30.24	--	--	--	--	--	--	--	--
2/29/2008	NP		61.65	36.00	51.00	26.65	35.00	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.16	9.94
5/17/2008	--	m	61.65	36.00	51.00	--	--	--	--	--	--	--	--	--	--
8/12/2008	--		61.65	36.00	51.00	31.05	30.60	--	--	--	--	--	--	--	--
10/21/2008	--		61.65	36.00	51.00	32.35	29.30	--	--	--	--	--	--	--	--
1/20/2009	NP		61.65	36.00	51.00	32.10	29.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.16	7.02
4/21/2009	--		61.65	36.00	51.00	28.25	33.40	--	--	--	--	--	--	--	--
7/21/2009	--		61.65	36.00	51.00	30.60	31.05	--	--	--	--	--	--	--	--
2/17/2010	NP		61.65	36.00	51.00	27.64	34.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.12	7.38
8/10/2010	--		**61.65**	**36.00**	**51.00**	**28.93**	**32.72**	--	--	--	--	--	--	--	--
WGR-3															

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

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
WGR-3 Cont.															
12/17/2000	--		--	--	--	19.21	--	--	--	--	--	--	--	--	--
12/28/2001	--	h	--	--	--	--	--	--	--	--	--	--	--	--	--
11/27/2002	--		--	--	--	20.60	--	--	--	--	--	--	--	--	--
7/22/2003	--		--	--	--	20.77	--	--	--	--	--	--	--	--	--
05/04/2004	P	g	63.27	--	--	19.53	43.74	<50	<0.50	<0.50	<0.50	<0.50	11	1.8	6.5
08/12/2004	P		63.27	--	--	22.20	41.07	<50	<0.50	<0.50	<0.50	<0.50	35	2.0	--
11/10/2004	P		63.27	--	--	19.98	43.29	<50	<0.50	<0.50	<0.50	<0.50	5.6	0.3	6.3
02/03/2005	P		63.27	--	--	16.91	46.36	<50	<0.50	<0.50	<0.50	<0.50	1.1	2.04	6.5
05/09/2005	--		63.27	--	--	17.29	45.98	--	--	--	--	--	--	--	--
08/11/2005	--		63.27	--	--	20.88	42.39	--	--	--	--	--	--	--	--
11/18/2005	--		63.27	--	--	22.15	41.12	--	--	--	--	--	--	--	--
02/01/2006	P		63.27	--	--	14.90	48.37	<50	<0.50	<0.50	<0.50	<0.50	2.3	2.0	6.5
5/30/2006	--		63.27	--	--	18.39	44.88	--	--	--	--	--	--	--	--
8/10/2006	--		63.27	--	--	20.63	42.64	--	--	--	--	--	--	--	--
11/2/2006	--		63.27	--	--	20.32	42.95	--	--	--	--	--	--	--	--
2/6/2007	P		63.27	--	--	18.52	44.75	<50	<0.50	<0.50	<0.50	<0.50	4.4	0.89	6.87
5/8/2007	--		63.27	--	--	18.41	44.86	--	--	--	--	--	--	--	--
8/14/2007	--		63.27	--	--	22.38	40.89	--	--	--	--	--	--	--	--
11/13/2007	--		63.27	--	--	19.95	43.32	--	--	--	--	--	--	--	--
2/29/2008	P		63.27	--	--	15.91	47.36	<50	<0.50	<0.50	<0.50	<0.50	1.4	1.03	7.35
5/17/2008	--		63.27	--	--	20.22	43.05	--	--	--	--	--	--	--	--
8/12/2008	--		63.27	--	--	21.05	42.22	--	--	--	--	--	--	--	--
10/21/2008	--		63.27	--	--	23.72	39.55	--	--	--	--	--	--	--	--
1/20/2009	P		63.27	--	--	19.90	43.37	<50	<0.50	<0.50	<0.50	<0.50	1.2	1.09	6.79
4/21/2009	--		63.27	--	--	18.16	45.11	--	--	--	--	--	--	--	--
7/21/2009	--		63.27	--	--	19.38	43.89	--	--	--	--	--	--	--	--
2/17/2010	P		63.27	--	--	16.63	46.64	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	6.49
8/10/2010	--		**63.27**	--	--	**21.70**	**41.57**	--	--	--	--	--	--	--	--

SYMBOLS & ABBREVIATIONS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
BTEX = Benzene, toluene, ethylbenzene and xylenes
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = Feet below ground surface
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Not purged prior to sampling
P = Purged prior to sampling
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter

FOOTNOTES:
a = 1,1 DCE; this footnote is no longer applicable.
b = 1,2 DCA; this footnote is no longer applicable.
c = Chlorobenzene; this footnote is no longer applicable.
d = Sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. Results may still be used for intended purpose.
e = The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
f = Discrete peak @ C5 for GRO/TPH-g.
g = Site was re-surveyed to NAVD' 88 on January 26, 2004.
h = Well was dry.
i = Hydrocarbon result for GRO partly due to individual peak(s) in quantitative range.
j = Initial analysis within holding time but required dilution.
k = TOC recorded incorrectly (61.86 instead of 61.89).
l = The hydrocarbon pattern for GRO in the sample does not match that of the gasoline standard used to calculate results. The values reported for these samples are in part due to the PCE peak that falls within the GRO (C6-C12) window.
m = Well inaccessible.
n = Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
o = The reporting limits are elevated due to high levels of non-target compounds.

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.

Groundwater samples were analyzed by EPA method 8015B for GRO and EPA method 8260B for BTEX, fuel oxygenates, ethanol, and PCE.

Values for pH and DO levels are 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 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 3. Historical Ground-Water Flow Direction and Gradient

ARCO Service Station #0276, 10600 MacArthur Blvd., Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
12/17/2000	South-Southeast	0.003
12/28/2001	Southeast	0.002
11/27/2002	South-Southeast	0.003
7/22/2003	South	0.007
11/7/2003	Southwest	0.002
2/3/2004	South-Southwest	0.002
5/4/2004	South-Southwest	0.003
8/12/2004	South	0.004
11/10/2004	Southwest	0.004
2/3/2005	Southwest	0.003
5/9/2005	South-Southwest	0.004
8/11/2005	South-Southwest	0.007
11/18/2005	Southwest	0.005
2/1/2006	Southwest	0.002
5/30/2006	South-Southwest	0.007
8/10/2006	South-Southwest	0.004
11/2/2006	South-Southwest	0.004
2/6/2007	South-Southwest	0.005
5/8/2007	South-Southwest	0.005
8/14/2007	South-Southwest	0.004
11/13/2007	South-Southwest	0.003
2/29/2008	South-Southwest	0.001
5/17/2008	Southwest	0.005
8/12/2008	Southwest	0.004
10/21/2008	Southwest	0.003
1/20/2009	Southwest	0.002
4/21/2009	Southwest	0.002
7/21/2009	Southwest	0.003
2/17/2010	South	0.02
8/10/2010	**Southwest**	**0.003**

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.

APPENDIX A

BAI GROUNDWATER SAMPLING DATA PACKAGE
(Includes Field Data Sheets, Non-Hazardous Waste Data Form, Laboratory Analytical Report with Chain-Of-Custody Documentation, and Field Procedures)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

FIELD DATA REPORT

DATE: 8/10/10
PERSONNEL: SB & EF
WEATHER: overcast

PROJECT NO.: 06-88-601
COMMENTS:

Equip:	Geosquirt	Tubing	Bailers	DO	wli	Ec/pH

Well ID	Time	MEASURING POINT TOC	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	0911		28.38									
MW-2	0918		16.52									
MW-3	0906		29.14									
MW-4	0905		28.57									
MW-5	0924		28.30									
MW-6	1026		33.78									
MW-7	1011		22.32									
MW-9	0941		26.54									
RW-1	0903		28.93									
MW-3	1021		21.70									

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BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-2
Project Name/Location: BP 276 Project #: 06-88-601
Sampler's Name: SB & EF Date: 8/10/10
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC
Casing Diameter: 2 inch
Total Well Depth: 25.50 feet
Depth to Water: - 16.52 feet
Water Column Thickness: = feet
Unit Casing Volume*: x gallon / foot
Casing Water Volume: = gallons
Casing Volume: x 3 each
Estimated Purge Volume: = gallons
Free product measurement (if present):

***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.

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0923	1.05	107	—	507.4	65.1	7.88	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: — gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 0925 Purged Dry? (Y / (N))

Comments: NP

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-5
Project Name/Location: BP 276 Project #: 06-98-601
Sampler's Name: SB + EF Date: 8/10/10
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:	2	inch	***UNIT CASING VOLUMES**
Total Well Depth:	46.92	feet	2" = 0.16 gal/lin ft.
Depth to Water:	- 28.30	feet	3" = 0.37 gal/lin ft.
Water Column Thickness:	=	feet	4" = 0.65 gal/lin ft.
Unit Casing Volume*:	x	gallon / foot	6" = 1.47 gal/lin ft.
Casing Water Volume:	=	gallons	
Casing Volume:	x 3	each	
Estimated Purge Volume:	=	gallons	

Free product measurement (if present): —

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0935	3.08	2	—	659.9	64.7	6.97	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: — gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 0935 Purged Dry? (Y / (N))

Comments: NP

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-6
Project Name/Location: BP 276 Project #: 06-88-601
Sampler's Name: SB & EF Date: 8/10/10
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:		2	inch
Total Well Depth:		48.38	feet
Depth to Water:	-	33.78	feet
Water Column Thickness:	=	14.6	feet
Unit Casing Volume*:	x	0.16	gallon / foot
Casing Water Volume:	=	2.3	gallons
Casing Volume:	x	3	each
Estimated Purge Volume:	=	7.0	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	1033	1.51	-38		1284	66.1	6.54	
2.5	1039	X	X	X	1352	66.2	6.60	
5	1042	X	X	X	1476	660	6.65	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 5 gallons
Depth to Water at Sample Collection: feet
Sample Collection Time: 1045 Purged Dry? (Y / (N))

Comments:

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-7
Project Name/Location: BP 274 Project #: 06-88-601
Sampler's Name: GB & IER Date: 4/10/10
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC
Casing Diameter: 2 inch
Total Well Depth: 36.76 feet
Depth to Water: - 22.32 feet
Water Column Thickness: = feet
Unit Casing Volume*: x gallon / foot
Casing Water Volume: = gallons
Casing Volume: x 3 each
Estimated Purge Volume: = gallons
Free product measurement (if present):

***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.

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1015	1.53	51	—	563.2	63.5	6.66	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: — gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 1015 Purged Dry? (Y / (N))

Comments: NP

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: MW-8
Project Name/Location: BP 276 Project #: 06-88-601
Sampler's Name: SD + EF Date: 8/10/10
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:		4	inch
Total Well Depth:		47.83	feet
Depth to Water:	-	26.54	feet
Water Column Thickness:	=	21.29	feet
Unit Casing Volume*:	x	0.65	gallon / foot
Casing Water Volume:	=	13.8	gallons
Casing Volume:	x	3	each
Estimated Purge Volume:	=	41.5	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	0945	1.90	-27	—	568.5	66.5	7.0	
5.0	0953	X	X	X	652.1	66.9	6.7	
10.0	0958	X	X	X	677.1	66.9	6.7	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 10.0 gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 1005 Purged Dry? (Y / (N))

Comments:

NO. 857311

NON-HAZARDOUS WASTE DATA FORM

1. BESI #

GENERATOR

2. Generator's Name and Mailing Address

BP WEST COAST PRODUCTS, LLC
P.O. BOX 80249
RANCHO SANTA MARGARITA, CA 92688

Generator's Site Address (if different than mailing address)

BP 276
10600 MacArthur blvd
Oakland, CA

Generator's Phone: (949) 460-5200

24-HOUR EMERGENCY PHONE: (949) 699-3706

3. Transporter 1 Company Name: Broadbent & Associates, Inc. — Phone #: (530) 566-1400

4. Transporter 2 Company Name: Gomes Excavating — Phone #: (707) 374-2881

5. Designated Facility Name and Site Address

INTRAT, INC.
1105 AIRPORT RD #C
RIO VISTA, CA 94571

Phone #: (530) 753-1829

6. Waste Shipping Name and Description	7. Containers No.	7. Containers Type	8. Total Quantity	9. Unit Wt/Vol	10. Profile No.
A. NON-HAZARDOUS WATER	1	TT	15	G	
B.					
C.					
D.					

11. Special Handling Instructions and Additional Information

WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

WELL PURGING / DECON WATER

12. GENERATOR'S CERTIFICATION: I certify the materials described above on this data form are non-hazardous.

Generator's/Offeror's Printed/Typed Name: Eric Ferro — Signature: [signature] — Month: 8 — Day: 16 — Year: 10

TRANSPORTER

13. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Eric Ferro — Signature: [signature] — Month: 8 — Day: 16 — Year: 10

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

FACILITY

14. Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Printed/Typed Name — Signature — Month — Day — Year

GENERATOR (ORIGINAL)

Calscience
Environmental
Laboratories, Inc.

August 27, 2010

Tom Sparrowe
Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Subject: **Calscience Work Order No.: 10-08-1072**
Client Reference: ARCO 276

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 8/13/2010 and analyzed in accordance with the attached chain-of-custody.

Calscience Environmental Laboratories certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 08/13/10
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 276

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-08-1072-1-E**	**08/10/10 09:25**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 07:50**	**100813B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	76	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	**10-08-1072-2-E**	**08/10/10 09:35**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 09:26**	**100813B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	74	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	**10-08-1072-3-E**	**08/10/10 10:45**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 09:58**	**100813B02**

Comment(s): -LW = Quantitation of unknown hydrocarbon(s) in sample based on gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	230	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	77	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	**10-08-1072-4-E**	**08/10/10 10:15**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 10:30**	**100813B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	900	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	89	38-134	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 08/13/10
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 276

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-8	**10-08-1072-5-E**	**08/10/10 10:05**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 11:34**	**100813B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	73	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-880**	**N/A**	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10 07:18**	**100813B02**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	81	38-134	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	08/13/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-08-1072
Chico, CA 95926-2642	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: ARCO 276

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-08-1072-1-A**	**08/10/10 09:25**	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10 07:36**	**100813L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	2.0	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Tetrachloroethene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Toluene	ND	0.50	1		Ethanol	ND	50	1	
Xylenes (total)	ND	0.50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	109	80-128		Dibromofluoromethane	101	80-127	
Toluene-d8	98	80-120		1,4-Bromofluorobenzene	93	68-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	**10-08-1072-2-B**	**08/10/10 09:35**	**Aqueous**	**GC/MS BB**	**08/17/10**	**08/18/10 08:04**	**100817L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.5	5		Methyl-t-Butyl Ether (MTBE)	140	2.5	5	
1,2-Dibromoethane	ND	2.5	5		Tert-Butyl Alcohol (TBA)	ND	50	5	
1,2-Dichloroethane	5.2	2.5	5		Diisopropyl Ether (DIPE)	ND	2.5	5	
Ethylbenzene	ND	2.5	5		Ethyl-t-Butyl Ether (ETBE)	ND	2.5	5	
Tetrachloroethene	24	2.5	5		Tert-Amyl-Methyl Ether (TAME)	14	2.5	5	
Toluene	ND	2.5	5		Ethanol	ND	250	5	
Xylenes (total)	ND	2.5	5						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	108	80-128		Dibromofluoromethane	104	80-127	
Toluene-d8	95	80-120		1,4-Bromofluorobenzene	84	68-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	**10-08-1072-3-A**	**08/10/10 10:45**	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10 08:34**	**100813L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	12	25		Methyl-t-Butyl Ether (MTBE)	ND	12	25	
1,2-Dibromoethane	ND	12	25		Tert-Butyl Alcohol (TBA)	ND	250	25	
1,2-Dichloroethane	ND	12	25		Diisopropyl Ether (DIPE)	ND	12	25	
Ethylbenzene	ND	12	25		Ethyl-t-Butyl Ether (ETBE)	ND	12	25	
Tetrachloroethene	830	12	25		Tert-Amyl-Methyl Ether (TAME)	ND	12	25	
Toluene	ND	12	25		Ethanol	ND	1200	25	
Xylenes (total)	ND	12	25						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	111	80-128		Dibromofluoromethane	106	80-127	
Toluene-d8	100	80-120		1,4-Bromofluorobenzene	90	68-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received:	08/13/10
1324 Mangrove Ave, Ste 212	Work Order No:	10-08-1072
Chico, CA 95926-2642	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L

Project: ARCO 276

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	**10-08-1072-4-A**	**08/10/10 10:15**	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10 09:04**	**100813L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	1.1	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Tetrachloroethene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Toluene	ND	0.50	1		Ethanol	ND	50	1	
Xylenes (total)	ND	0.50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	107	80-128		Dibromofluoromethane	104	80-127	
Toluene-d8	112	80-120		1,4-Bromofluorobenzene	99	68-120	

MW-8	**10-08-1072-5-A**	**08/10/10 10:05**	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10 09:33**	**100813L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	84	2.0	4	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	0.50	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Tetrachloroethene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	8.6	0.50	1	
Toluene	ND	0.50	1		Ethanol	ND	50	1	
Xylenes (total)	ND	0.50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	107	80-128		Dibromofluoromethane	102	80-127	
Toluene-d8	94	80-120		1,4-Bromofluorobenzene	93	68-120	

Method Blank	**099-10-025-1,682**	**N/A**	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10 00:18**	**100813L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Tetrachloroethene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Toluene	ND	0.50	1		Ethanol	ND	50	1	
Xylenes (total)	ND	0.50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	110	80-128		Dibromofluoromethane	98	80-127	
Toluene-d8	97	80-120		1,4-Bromofluorobenzene	90	68-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	08/13/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-08-1072
Chico, CA 95926-2642		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L
Project: ARCO 276			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-10-025-1,686**	**N/A**	**Aqueous**	**GC/MS BB**	**08/17/10**	**08/18/10 00:26**	**100817L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Tetrachloroethene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Toluene	ND	0.50	1		Ethanol	ND	50	1	
Xylenes (total)	ND	0.50	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,2-Dichloroethane-d4	108	80-128		Dibromofluoromethane	104	80-127	
Toluene-d8	97	80-120		1,4-Bromofluorobenzene	86	68-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 08/13/10
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-2	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10**	**100813S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	92	93	38-134	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 08/13/10
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-08-1079-1	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/14/10**	**100813S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	114	113	76-124	1	0-20	
Carbon Tetrachloride	103	104	74-134	1	0-20	
Chlorobenzene	110	108	80-120	2	0-20	
1,2-Dibromoethane	119	117	80-120	2	0-20	
1,2-Dichlorobenzene	109	107	80-120	1	0-20	
1,2-Dichloroethane	112	111	80-120	1	0-20	
1,1-Dichloroethene	113	112	73-127	0	0-20	
Ethylbenzene	112	112	78-126	0	0-20	
Toluene	108	112	80-120	4	0-20	
Trichloroethene	108	105	77-120	3	0-20	
Vinyl Chloride	115	115	72-126	0	0-20	
Methyl-t-Butyl Ether (MTBE)	100	101	67-121	1	0-49	
Tert-Butyl Alcohol (TBA)	111	112	36-162	2	0-30	
Diisopropyl Ether (DIPE)	108	99	60-138	9	0-45	
Ethyl-t-Butyl Ether (ETBE)	99	103	69-123	4	0-30	
Tert-Amyl-Methyl Ether (TAME)	90	92	65-120	2	0-20	
Ethanol	154	132	30-180	15	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: 08/13/10
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-08-1175-2	**Aqueous**	**GC/MS BB**	**08/17/10**	**08/18/10**	**100817S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	104	102	76-124	3	0-20	
Carbon Tetrachloride	107	104	74-134	3	0-20	
Chlorobenzene	105	106	80-120	2	0-20	
1,2-Dibromoethane	107	106	80-120	1	0-20	
1,2-Dichlorobenzene	104	106	80-120	2	0-20	
1,2-Dichloroethane	109	109	80-120	0	0-20	
1,1-Dichloroethene	111	112	73-127	1	0-20	
Ethylbenzene	109	109	78-126	1	0-20	
Toluene	111	112	80-120	1	0-20	
Trichloroethene	102	102	77-120	1	0-20	
Vinyl Chloride	103	112	72-126	8	0-20	
Methyl-t-Butyl Ether (MTBE)	104	103	67-121	1	0-49	
Tert-Butyl Alcohol (TBA)	106	99	36-162	7	0-30	
Diisopropyl Ether (DIPE)	104	104	60-138	1	0-45	
Ethyl-t-Butyl Ether (ETBE)	102	109	69-123	7	0-30	
Tert-Amyl-Methyl Ether (TAME)	97	92	65-120	5	0-20	
Ethanol	60	78	30-180	27	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-880	**Aqueous**	**GC 1**	**08/13/10**	**08/14/10**	**100813B02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	90	93	78-120	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-025-1,682	**Aqueous**	**GC/MS BB**	**08/13/10**	**08/13/10**	**100813L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	115	120	80-120	73-127	4	0-20	
Carbon Tetrachloride	112	109	74-134	64-144	2	0-20	
Chlorobenzene	112	111	80-120	73-127	1	0-20	
1,2-Dibromoethane	118	115	79-121	72-128	3	0-20	
1,2-Dichlorobenzene	109	109	80-120	73-127	0	0-20	
1,2-Dichloroethane	118	121	80-120	73-127	3	0-20	LQ
1,1-Dichloroethene	114	113	78-126	70-134	1	0-28	
Ethylbenzene	115	113	80-120	73-127	2	0-20	
Toluene	114	116	80-120	73-127	1	0-20	
Trichloroethene	120	116	79-127	71-135	3	0-20	
Vinyl Chloride	113	111	72-132	62-142	2	0-20	
Methyl-t-Butyl Ether (MTBE)	98	95	69-123	60-132	3	0-20	
Tert-Butyl Alcohol (TBA)	103	93	63-123	53-133	10	0-20	
Diisopropyl Ether (DIPE)	93	94	59-137	46-150	1	0-37	
Ethyl-t-Butyl Ether (ETBE)	98	91	69-123	60-132	8	0-20	
Tert-Amyl-Methyl Ether (TAME)	92	95	70-120	62-128	3	0-20	
Ethanol	149	111	28-160	6-182	29	0-57	

Total number of LCS compounds : 17
Total number of ME compounds : 1
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Date Received: N/A
Work Order No: 10-08-1072
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 276

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-10-025-1,686	**Aqueous**	**GC/MS BB**	**08/17/10**	**08/17/10**	**100817L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	98	101	80-120	73-127	3	0-20	
Carbon Tetrachloride	102	102	74-134	64-144	1	0-20	
Chlorobenzene	103	101	80-120	73-127	2	0-20	
1,2-Dibromoethane	106	103	79-121	72-128	3	0-20	
1,2-Dichlorobenzene	103	105	80-120	73-127	2	0-20	
1,2-Dichloroethane	104	103	80-120	73-127	1	0-20	
1,1-Dichloroethene	112	110	78-126	70-134	2	0-28	
Ethylbenzene	106	103	80-120	73-127	3	0-20	
Toluene	103	102	80-120	73-127	1	0-20	
Trichloroethene	100	100	79-127	71-135	0	0-20	
Vinyl Chloride	113	110	72-132	62-142	3	0-20	
Methyl-t-Butyl Ether (MTBE)	101	101	69-123	60-132	0	0-20	
Tert-Butyl Alcohol (TBA)	100	98	63-123	53-133	3	0-20	
Diisopropyl Ether (DIPE)	107	100	59-137	46-150	7	0-37	
Ethyl-t-Butyl Ether (ETBE)	103	99	69-123	60-132	4	0-20	
Tert-Amyl-Methyl Ether (TAME)	94	99	70-120	62-128	6	0-20	
Ethanol	76	63	28-160	6-182	19	0-57	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 10-08-1072

Qualifier	Definition
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.

Work Order Number: 10-08-1072

Qualifier	Definition
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 276 **Req Due Date (mm/dd/yy):** STD-TAT **Rush TAT:** Yes ___ No X

BP/ARC Facility No: 276 **Lab Work Order Number:** 1072

Lab Name:	Cal Science	BP/ARC Facility Address:	10600 MacArthur Boulevard	Consultant/Contractor:	Broadbent & Associates, Inc.
Lab Address:	7440 Lincoln Way	City, State, ZIP Code:	Oakland, CA 94605	Consultant/Contractor Project No:	06-88-601-5-822
Lab PM:	Richard Villafania	Lead Regulatory Agency:	ACEH	Address:	875 Cotting Ln., Suite G, Vacaville, CA 95688
Lab Phone:	714-895-5494 / 714-895-7501 (fax)	California Global ID No.:	T0600108312	Consultant/Contractor PM:	Tom Sparrowe
Lab Shipping Accnt:	9255	Enfos Proposal No:	000X7-0007	Phone:	707-455-7290 / 707-455-7295 (fax)
Lab Bottle Order No:		Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___	Email EDD To:	tsparrowe@broadbentinc.com
Other Info:		Stage:	Operate (5) Activity: Monitoring/MNA (822)	Invoice To:	BP/ARC ___ Contractor ___
BP/ARC EBM:	Chuck Carmel				
EBM Phone:	925-275-3803				
EBM Email:	charles.carmel@bp.com				

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix:	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: GRO (8015M)	BTEX / 5 Oxys (8260)	EDB / 1,2-DCA (8260)	EtOH / PCE (8260)							Report Type & QC Level
1	MW-2	8/10/10	0925		X			6				X			X	X	X	X							Standard X
2	MW-5	"	0935		X			6				X			X	X	X	X							Full Data Package ___
3	MW-6	"	1045		X			6				X			X	X	X	X							
4	MW-7	"	1015		X			6				X			X	X	X	X							**Comments**
5	MW-8	"	1005		X			6				X			X	X	X	X							Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name:	Eric Turner	**Relinquished By / Affiliation**	**Date**	**Time**	**Accepted By / Affiliation**	**Date**	**Time**
Sampler's Company:	BAI		8/11/10	1600			
Shipment Method:	GSO Ship Date: 8/12/10						
Shipment Tracking No:	106470760					8/13/10	1000

Special Instructions: Please cc results to bpedf@broadbentinc.com

650

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: _____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

(1072)

ORC

GSO
GOLDEN STATE OVERNIGHT
1-800-322-5555
www.gso.com

[redacted]

GARDEN GROVE
92841 18 lb 3/CSI

D

83892389 1008122013

D92843A

CSL-06

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-08-1672

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: BAI

DATE: 08/13/10

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.4 °C + 0.5 °C (CF) = 1.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only Initial: PS

CUSTODY SEALS INTACT:

☑ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: WSC

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Residual Chlorine / Dissolved Sulfide received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☑	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☑VOAh ☐VOA**na₂** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na₂** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐500PB ☐500PB**na**

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na₂** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:** 091209B **Labeled/Checked by:** WSC

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** PS

Preservative: **h:** HCL **n:** HNO_3 **na₂:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** WSC

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-08-1072

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Sample(s)/Container(s) NOT RECEIVED but listed on COC**
- ☑ **Sample(s)/Container(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
  - ☐ **Without Label(s)**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

#7) received 2 vials/HCL labeled as Trip blank. no date and time. (crossed)

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis
7	B	2							

Comments: _____

*Transferred at Client's request.

Initial / Date: WS 08/13/10

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 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 EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Monitoring Report - Semi-Annually**
Submittal Title:	**3Q10 GW Monitoring**
Facility Global ID:	**T0600108312**
Facility Name:	**ARCO #0276**
File Name:	**10081072.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/10/2010 3:37:04 PM**
Confirmation Number:	**4417146086**

VIEW QC REPORT

VIEW DETECTIONS REPORT