Atlantic Richfield Company

Shannon Couch
Operations Project Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3804
Fax: (925) 275-3815
E-Mail: shannon.couch@bp.com

RECEIVED

3:05 pm, Nov 01, 2011

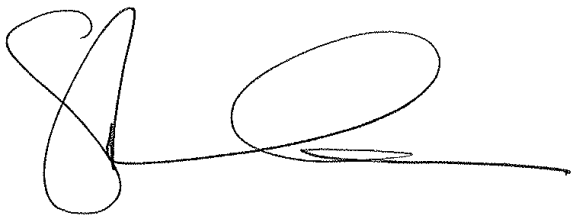
Alameda County
Environmental Health

October 31, 2011

Re: Third Quarter 2011 Monitoring Report
Atlantic Richfield Company Station #2169
889 West Grand Avenue, Oakland, California
ACEH Case #RO0000072

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,



Shannon Couch
Operations Project Manager

Attachment

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
Chico, CA 95926
Voice (530) 566-1400
Fax (530) 566-1401

Creating Valuable Solutions, Building Trust

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

October 31, 2011

Project No. 06-88-621

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

Attn.: Ms. Shannon Couch

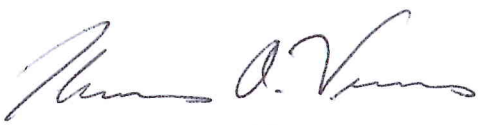
Re: Third Quarter 2011 Monitoring Report, Atlantic Richfield Company Station #2169, 889 West Grand Avenue, Oakland, California; ACEH Case #RO0000072

Dear Ms. Couch:

Attached is the Third Quarter 2011 Monitoring Report for Atlantic Richfield Company Station #2169 located at 889 West Grand Avenue, Oakland, Alameda County, California. This report presents results of groundwater sampling recently conducted and a summary of current developments at the Site through the Third Quarter of 2011.

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

Sincerely,
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, PE
Senior Engineer

Enclosures

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

THIRD QUARTER 2011
MONITORING REPORT
ARCO STATION #2169, OAKLAND, CALIFORNIA

Broadbent & Associates, Inc. (BAI) is pleased to present this *Third Quarter 2011 Monitoring Report* on behalf of Atlantic Richfield Company (a BP affiliated company) for ARCO Station #2169 located in Oakland, Alameda County, California. Quarterly reporting is being submitted to the Alameda County Environmental Health Services Agency (ACEH) consistent with their requirements under the legal authority of the California Regional Water Quality Control Board, as codified by the California Code of Regulations Title 23, Section 2652(d). Details of work performed, discussion of results, and recommendations are provided below.

Facility Name / Address:	ARCO Station #2169 / 889 West Grand Avenue, Oakland
Client Project Manager / Title:	Ms. Shannon Couch / RM Operations Project Manager
BAI Contact:	Mr. Tom Venus, PE / (530) 566-1400
BAI Project No.:	06-88-621
Primary Regulatory Agency / ID No.:	ACEH, Case #RO0000072 (GeoTracker ID #T0600100112)
Current phase of project:	Monitoring, Offsite Assessment
List of Acronyms / Abbreviations:	See end of report text for list of acronyms/abbreviations used in report.

WORK PERFORMED THIS QUARTER (Third Quarter 2011):

1. Submitted *Second Quarter 2011 Status Report* (BAI, 7/5/2011).
2. Conducted groundwater monitoring/sampling for Third Quarter 2011 on August 26, 2011.

WORK SCHEDULED FOR NEXT QUARTER (Fourth Quarter 2011):

1. Submit *Third Quarter 2011 Monitoring Report* (contained herein).
2. No environmental field work is presently scheduled at Station #2169 during Fourth Quarter 2011.

ADDITIONAL WORK RECOMMENDED FOR NEXT QUARTER (Fourth Quarter 2011)

1. Submit revised offsite assessment work plan.

GROUNDWATER MONITORING PLAN SUMMARY:

Groundwater level gauging:	A-1, A-2, A-5, A-6, ADR-1, ADR-2, AR-2	(1Q & 3Q)
Groundwater sample collection:	A-1, A-5, A-6, ADR-1	(1Q & 3Q)
	A-2, ADR-2, AR-2	(3Q)
Biodegradation indicator parameter monitoring:	A-1, A-5, A-6, ADR-1	(1Q & 3Q)
	A-2, ADR-2, AR-2	(3Q)

QUARTERLY RESULTS SUMMARY:

LNAPL

LNAPL observed this quarter:	No	(yes\no)
LNAPL recovered this quarter:	None	(gal)
Cumulative LNAPL recovered:	N/A	(gal)

Groundwater Elevation and Gradient:

Depth to groundwater:	9.81 (A-5) to 11.39(AR-2)	(ft below TOC)
Gradient direction:	Northeast	(compass direction)
Gradient magnitude:	0.003	(ft/ft)
Average change in elevation:	-1.64	(ft since last measurement)

Laboratory Analytical Data

Summary: GRO detected in six wells up to 5,500 µg/L in A-1. Benzene was detected in four wells up to 320 µg/L in A-1. MTBE was detected in three wells up to 40 µg/L in ADR-2. Toluene, Ethylbenzene, Total Xylenes, TBA and TAME were also detected in select wells.

ACTIVITIES CONDUCTED & RESULTS:

Third Quarter 2011 groundwater monitoring was conducted on August 26, 2011 by BAI personnel in accordance with the new monitoring plan summary detailed above. This monitoring plan comprises the wells remaining following the "raze & rebuild" renovation of ARCO Station #2169 in the second half of 2010. No irregularities were noted during water level gauging. Light, Non-Aqueous Phase Liquid (LNAPL, or free product) was not noted to be present in the wells monitored during this event, although "sheen" was reported in well ADR-2. Depth to water measurements ranged from 9.81 ft at A-5 to 11.39 ft at AR-2. Resulting groundwater surface elevations ranged from 5.89 ft at A-2 to 6.14 ft at ADR-1. Groundwater elevations are summarized in Table 1. Water level elevations yielded an irregular potentiometric groundwater gradient to the Northeast at approximately 0.003 ft/ft. Field methods used during groundwater monitoring are provided in Appendix A. Field data sheets are included in Appendix B. A Site Location Map is presented as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Groundwater samples were collected on August 26, 2011. Samples were collected from each of the wells consistent with the new monitoring program. 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 8015M; for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Tert-Butyl Alcohol (TBA) and Ethanol by EPA Method 8260. No significant irregularities were encountered during analysis of the samples with exception that the laboratory flagged the GRO concentrations for A-2 as "LW - Quantitation of unknown hydrocarbon(s) in sample based on gasoline", and flagged the EPA Method 8260 analysis results for A-2 as "BH - reporting limits raised due to high level non-target analytes." The laboratory analytical report, including chain-of-custody documentation, is provided in Appendix C.

Hydrocarbons in the GRO range were detected above the laboratory reporting limit in six wells sampled at concentrations up to 5,500 micrograms per liter (µg/L, parts per billion, ppb) in well A-1. Benzene was detected above the laboratory reporting limit in four wells sampled at concentrations up to 320 µg/L in well A-1. Toluene was detected above the laboratory reporting limit in three wells concentrations up to 260 µg/L in well A-1. Ethylbenzene was detected above the laboratory reporting limit in four wells sampled at concentrations up to 230 µg/L in well A-1. Total Xylenes were detected above the laboratory reporting limit in four wells sampled at concentrations up to 650 µg/L in well A-1. MTBE was detected above the laboratory reporting limit in three wells sampled at concentrations up to 40 µg/L in well ADR-2. TBA was detected above the laboratory limit in ADR-2 at a concentration of 11 µg/L. TAME was detected above the laboratory limit in ADR-2 at a concentration of 14 µg/L. The remaining analytes were not detected above their laboratory reporting limits in the wells sampled this last monitoring event. Groundwater monitoring 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. Groundwater monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix D.

DISCUSSION:

Groundwater levels were between historic minimum and maximum elevations for the seven wells remaining in the monitoring program. However, groundwater elevations decreased slightly over one and a half feet (-1.64 ft) since the last groundwater monitoring event on March 11, 2011. Groundwater elevations on August 26, 2011 yielded a potentiometric groundwater gradient to the Northeast at approximately 0.003 ft/ft, similar to that calculated in First Quarter 2011 but inconsistent with earlier historic gradient data presented in Table 3. The change in gradient direction is likely from having so few wells remaining in the monitoring schedule, and that those remaining are laid out primarily in an almost straight line along Market

Street. The exceptions are AR-2 and A-6, with AR-2 not even constructed like a standard monitoring well being horizontal slotted pipes attached with a T-joint to a vertical riser in the UST basin.

Detected analytical concentrations were within the historic minimum and maximum ranges recorded for each well during the Third Quarter 2011 monitoring event with the following exceptions: Toluene reached historic maximum concentrations within A-1; Benzene, and Total Xylenes reached historic maximum concentrations within ADR-1; and TAME reached historic maximum concentrations within ADR-2. It was also noted that the laboratory flagged the GRO concentrations for A-2 as "LW - Quantitation of unknown hydrocarbon(s) in sample based on gasoline", and flagged the EPA Method 8260 analysis results for A-2 as "BH - reporting limits raised due to high level non-target analytes." Recent and historic laboratory analytical results are summarized in Table 1 and Table 2.

RECOMMENDATIONS:

Groundwater monitoring and sampling is next scheduled to be conducted at ARCO Station #2169 during First Quarter 2012. During this next monitoring event, each of the seven wells will be purged prior to collection of samples to see if 'fresher' samples are not flagged by the laboratory with the 'LW' qualification.

It is recommended that the pending offsite groundwater boring investigation be discussed with ACEH. The *Preferential Pathway Evaluation and Soil & Groundwater Investigation Work Plan* was submitted to ACEH by BAI on April 6, 2009. Proposed access agreements were sent to the owners of record of the properties at 885 22nd Street and 949 West Grand Avenue. According to the Alameda County Assessor's Office, Mr. Harold Williams, Sr. (given contact address of 866 54th Street, Oakland, California 94608) is the owner of record for 885 22nd Street, also known as Alameda County Assessor's Parcel No. (APN) 3-29-15. The purpose of a single groundwater boring on this property was to assess the southern offsite extent of petroleum hydrocarbon-contaminated groundwater from ARCO Station #2169. Also according to the Alameda County Assessor's Office, Mr. Myumg S. Kim (given contact address of 2601 Telegraph Avenue, Oakland, California 94612) is the owner of record for the city block across Market Street with the address of 949 West Grand Avenue, also known as Alameda County APN 5-411-1-4. The purpose of four groundwater borings on this property was to assess the western extent of petroleum hydrocarbon-contaminated groundwater from ARCO Station #2169. The dense network of existing underground and overhead utilities in the City of Oakland Right-of-Ways for Market Street and 22nd Street had originally pushed BAI to propose the offsite groundwater borings on the private properties. However, due to the protracted stalemate obtaining access to the two private properties, BAI proposes discussing with the ACEH alternative boring locations possibly within the City of Oakland Right-of-Ways (ROWs) for Market Street and 22nd Street. BAI is currently obtaining updated utility location information to identify the limited few potential drilling locations in the ROWs.

LIMITATIONS:

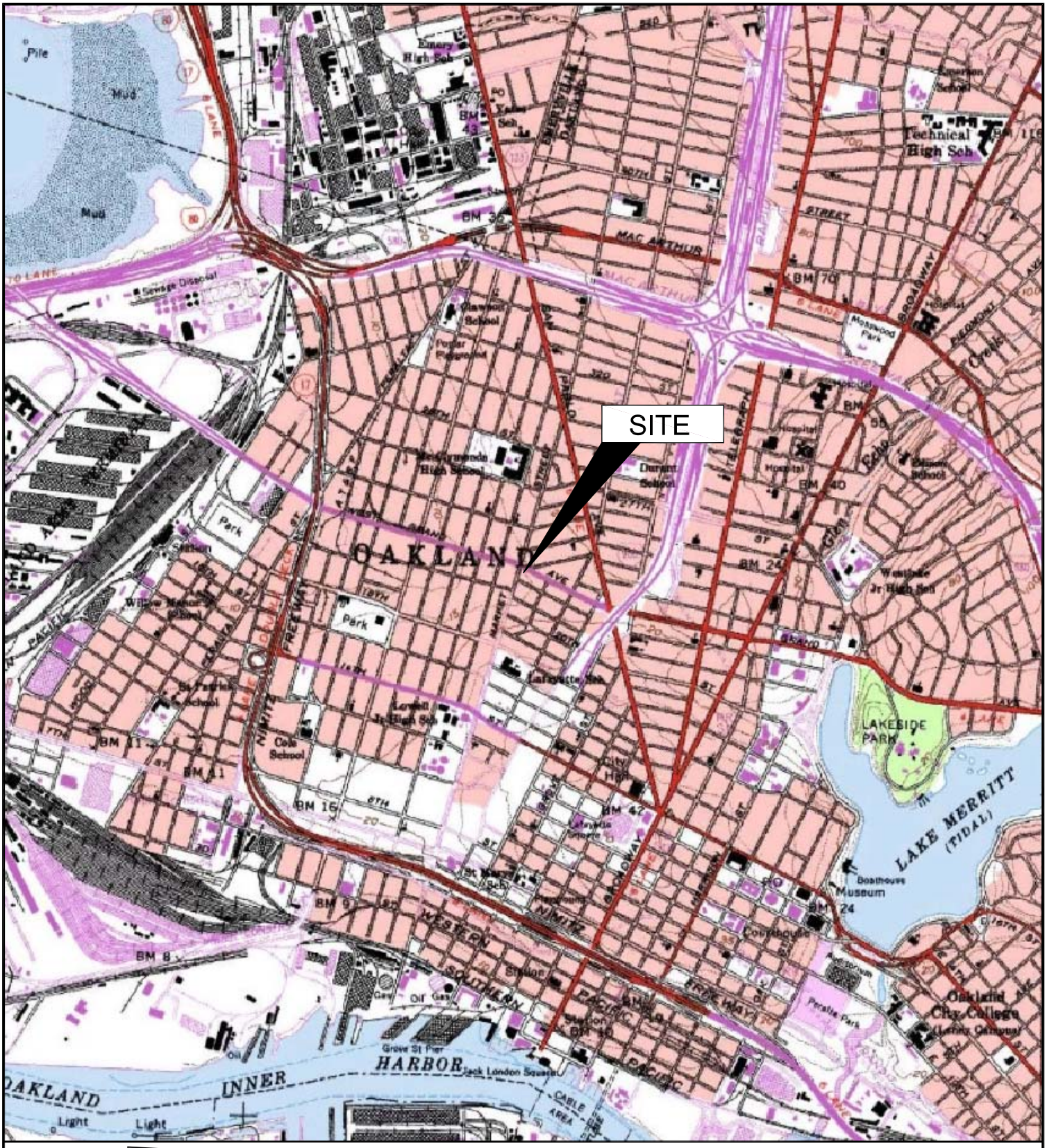
The findings presented in this report are based upon observations of field personnel, points investigated, results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California), and our understanding of ACEH requirements. Our services were performed in accordance 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 the 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
Drawing 2: Groundwater Elevation Contours and Analytical Summary Map, 26 August 2011

LIST OF COMMONLY USED ACCRONYMS/ABBREVIATIONS:

ACEH:	Alameda County Environmental Health	ft/ft:	feet per foot
BAI:	Broadbent & Associates, Inc.	gal:	Gallons
BTEX:	Benzene, Toluene, Ethylbenzene, Total Xylenes	GRO:	Gasoline-Range Organics
1,2-DCA:	1,2-Dichloroethane	LNAPL:	Light Non-Aqueous Phase Liquid
DIPE:	Di-Isopropyl Ether	MTBE:	Methyl Tertiary Butyl Ether
DO:	Dissolved Oxygen	NO_3:	Nitrate as Nitrogen
DRO:	Diesel-Range Organics	ppb:	parts per billion
EDB:	1,2-Dibromomethane	SO_4:	Sulfate
Eh:	Oxidation Reduction Potential	TAME:	Tert-Amyl Methyl Ether
EPA:	Environmental Protection Agency	TBA:	Tertiary Butyl Ether
ETBE:	Ethyl Tertiary Butyl Ether	TOC:	Top of Casing
Fe^{2+}:	Ferrous Iron	µg/L:	micrograms per liter



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0 2000 4000

APPROXIMATE SCALE (ft)

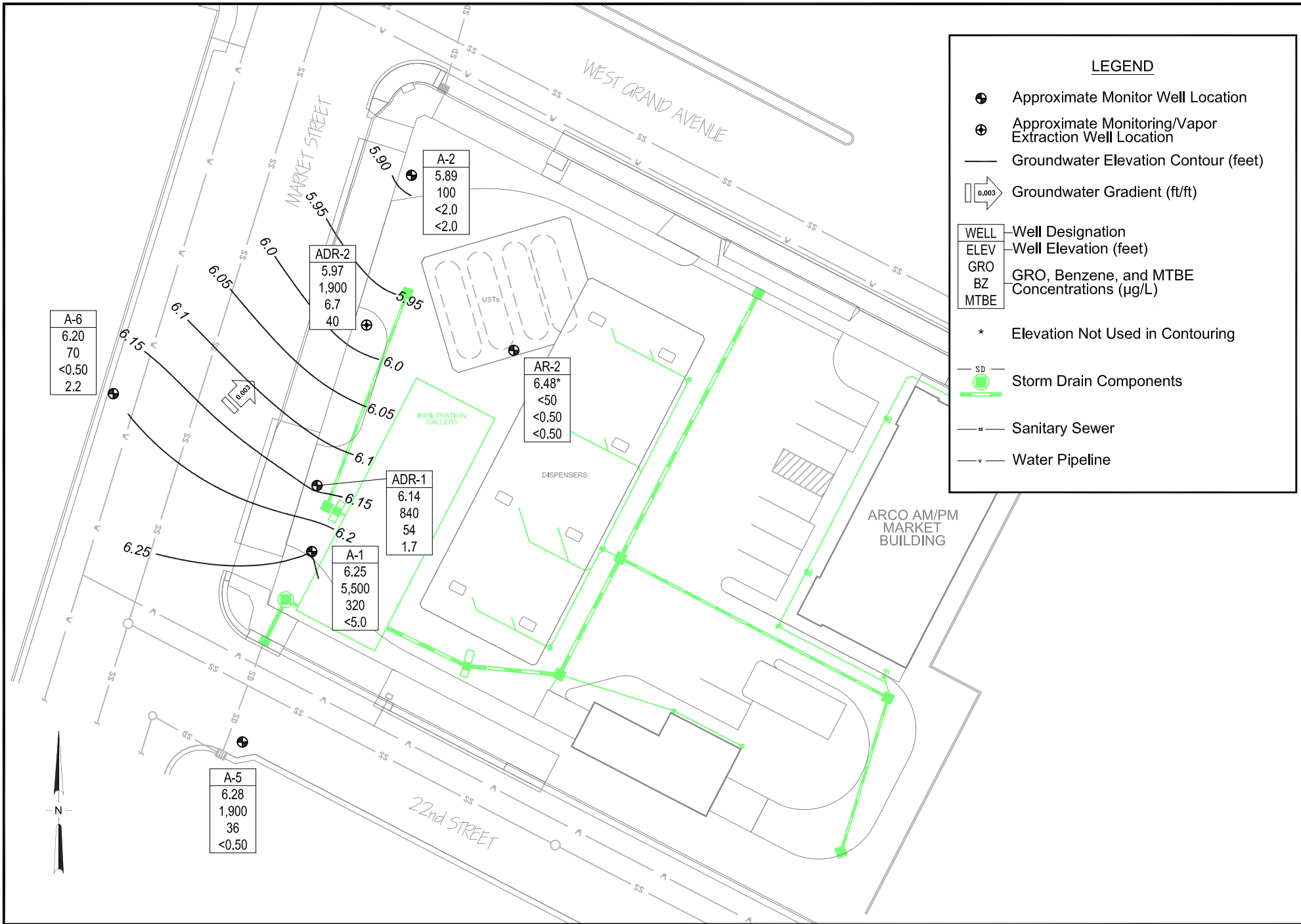
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-621 Date: 9/1/09

ARCO Service Station #2169
889 West Grand Avenue
Oakland, California

Site Location Map

Drawing
1



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SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-88-621 Date: 9/20/2011

ARCO Station #2169
889 West Grand Avenue
Oakland, California

Groundwater Elevation Contours and Analytical Summary Map
26 August 2011

Drawing
2

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-1															
6/26/2000	--	14.16	9.00	25.00	10.75	3.41	--	--	--	--	--	--	--	--	
7/20/2000	--		9.00	25.00	11.01	3.15	3,900	1,100	28	12	46	25	--	--	
9/19/2000	--		9.00	25.00	11.26	2.90	4,800	2,400	27	20	57	32	--	--	
12/26/2000	--		9.00	25.00	10.96	3.20	429	104	2.85	12.2	9.91	18.7	--	--	
3/20/2001	--		9.00	25.00	9.59	4.57	<500	13.9	7.12	13.9	23.2	<25	--	--	
6/12/2001	--		9.00	25.00	10.83	3.33	140	2.2	<0.5	8.7	9.2	25	--	--	
9/23/2001	--		9.00	25.00	11.43	2.73	<50	<0.50	<0.50	<0.50	<0.50	4.5	--	--	
12/28/2001	--		9.00	25.00	8.66	5.50	930	250	7.6	21	13	<25	--	--	
3/21/2002	--		9.00	25.00	8.43	5.73	<50	<0.5	<0.5	<0.5	1.2	<2.5	--	--	
4/17/2002	--		9.00	25.00	9.36	4.80	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/14/2002	--		9.00	25.00	11.12	3.04	170	8.4	<0.5	<0.5	1.4	4.9	5.7	7.4	b
11/27/2002	--		9.00	25.00	11.11	3.05	98	2.9	0.75	<0.5	<0.5	6.4	1.6	7.0	b
2/12/2003	--		9.00	25.00	10.10	4.06	73	9.3	<0.50	1	0.53	2.9	2.1	7.2	d
5/22/2003	--		9.00	25.00	10.18	3.98	400	88	1.6	4.6	11	4.9	1.3	7.4	
7/23/2003	--		9.00	25.00	10.85	3.31	140	3.2	<0.50	<0.50	0.56	10	10.8	7.4	
11/13/2003	P		9.00	25.00	11.35	2.81	<50	0.64	<0.50	<0.50	<0.50	4.2	4.3	7.75	f
02/16/2004	P	16.75	9.00	25.00	9.65	7.10	99	18	<0.50	1.2	0.96	3.2	7.2	7.6	f, i
05/06/2004	P		9.00	25.00	10.57	6.18	<50	0.73	<0.50	<0.50	<0.50	1.9	1.23	6.93	
09/02/2004	P		9.00	25.00	11.05	5.70	64	1.1	<0.50	<0.50	<0.50	1.7	12.1	8.7	
11/29/2004	P		9.00	25.00	10.50	6.25	<50	1.4	<0.50	<0.50	<0.50	<0.50	0.62	7.0	
02/02/2005	P		9.00	25.00	9.18	7.57	56	14	<0.50	<0.50	0.55	5.1	3.2	7.2	
05/09/2005	P		9.00	25.00	9.28	7.47	52	7.8	<0.50	0.53	0.52	2.7	2.1	7.2	
08/11/2005	P		9.00	25.00	10.70	6.05	420	61	<0.50	1.8	1.0	4.2	3.2	6.8	
02/09/2006	P		9.00	25.00	9.04	7.71	170	60	1.5	3.5	5.1	5.6	1.69	7.1	o
8/11/2006	P		9.00	25.00	10.44	6.31	200	18	<0.50	0.73	0.60	3.7	--	7.2	
2/7/2007	NP		9.00	25.00	10.34	6.41	270	5.5	<0.50	0.95	1.2	20	1.15	7.27	
8/14/2007	NP		9.00	25.00	10.43	6.32	3,500	350	21	110	68	1.8	1.32	7.46	
2/22/2008	P		9.00	25.00	8.75	8.00	2,600	160	7.2	16	11	<2.5	4.16	7.65	
8/12/2008	NP		9.00	25.00	10.30	6.45	7,400	420	28	190	170	<2.5	0.54	9.38	
1/8/2009	NP		9.00	25.00	10.07	6.68	14,000	400	130	530	790	<10	0.49	7.26	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-1 Cont.															
9/4/2009	NP	16.75	9.00	25.00	11.22	5.53	990	19	2.2	0.80	1.5	7.4	0.48	7.25	
3/5/2010	P		9.00	25.00	7.84	8.91	800	12	1.3	5.6	3.6	3.3	0.84	7.09	
3/11/2011	NP		9.00	25.00	9.02	7.73	4900	260	68	43	380	<5.0	2.11	7.3	
8/26/2011	**P**		**9.00**	**25.00**	**10.50**	**6.25**	**5,500**	**320**	**260**	**230**	**650**	**<5.0**	**0.63**	**7.1**	
A-2															
6/26/2000	--	14.55	10.00	25.00	11.27	3.28	--	--	--	--	--	--	--	--	
7/20/2000	--		10.00	25.00	11.52	3.03	<50	<0.5	<0.5	<0.5	<1.0	<3	--	--	
9/19/2000	--		10.00	25.00	11.63	2.92	--	--	--	--	--	--	--	--	
12/26/2000	--		10.00	25.00	11.44	3.11	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		10.00	25.00	10.08	4.47	--	--	--	--	--	--	--	--	
6/12/2001	--		10.00	25.00	11.35	3.20	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/23/2001	--		10.00	25.00	11.92	2.63	--	--	--	--	--	--	--	--	
12/28/2001	--		10.00	25.00	9.31	5.24	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		10.00	25.00	9.05	5.50	--	--	--	--	--	--	--	--	
4/17/2002	--		10.00	25.00	9.88	4.67	52	<0.5	<0.5	<0.5	<0.5	26	--	--	
8/14/2002	--		10.00	25.00	11.62	2.93	<50	<0.5	<0.5	<0.5	1.2	<2.5	3.7	7.2	c
11/27/2002	--		10.00	25.00	11.56	2.99	--	--	--	--	--	--	--	--	
2/12/2003	--		10.00	25.00	10.75	3.80	<50	<0.50	<0.50	<0.50	<0.50	12	2.9	7.1	d
5/22/2003	--		10.00	25.00	10.72	3.83	--	--	--	--	--	--	--	--	
7/23/2003	--		10.00	25.00	11.39	3.16	<50	<0.50	<0.50	<0.50	<0.50	2.6	1.3	6.8	
11/13/2003	--		10.00	25.00	11.60	2.95	--	--	--	--	--	--	--	--	
02/16/2004	--	17.18	10.00	25.00	10.27	6.91	--	--	--	--	--	--	--	--	i
05/06/2004	--		10.00	25.00	11.05	6.13	--	--	--	--	--	--	--	--	
09/02/2004	P		10.00	25.00	11.45	5.73	130	<0.50	<0.50	<0.50	<0.50	2.5	5.1	7.4	
11/29/2004	--		10.00	25.00	11.12	6.06	--	--	--	--	--	--	--	--	
02/02/2005	--		10.00	25.00	9.73	7.45	--	--	--	--	--	--	--	--	
05/09/2005	--		10.00	25.00	12.82	4.36	--	--	--	--	--	--	--	--	
08/11/2005	P		10.00	25.00	11.29	5.89	120	<0.50	<0.50	<0.50	<0.50	1.2	1.6	7.1	m
02/09/2006	--		10.00	25.00	10.43	6.75	--	--	--	--	--	--	--	--	
8/11/2006	P		10.00	25.00	11.12	6.06	<50	<0.50	<0.50	<0.50	<0.50	1.4	1.1	7.0	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-2 Cont.															
2/7/2007	--	17.18	10.00	25.00	11.07	6.11	--	--	--	--	--	--	--	--	
8/14/2007	NP		10.00	25.00	11.28	5.90	<50	<0.50	<0.50	<0.50	<0.50	0.65	0.64	7.57	
2/22/2008	--		10.00	25.00	9.50	7.68	--	--	--	--	--	--	--	--	
8/12/2008	NP		10.00	25.00	11.28	5.90	64	<0.50	<0.50	<0.50	<0.50	0.96	0.57	9.44	
1/8/2009	--		10.00	25.00	10.90	6.28	--	--	--	--	--	--	--	--	
9/4/2009	NP		10.00	25.00	11.77	5.41	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.43	7.39	
3/5/2010	--		10.00	25.00	8.53	8.65	--	--	--	--	--	--	--	--	
3/11/2011	P		10.00	25.00	9.67	7.51	76	<0.50	<0.50	<0.50	<0.50	<0.50	0.84	7.3	p (GRO)
8/26/2011	**P**		**10.00**	**25.00**	**11.29**	**5.89**	**100**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	**1.01**	**7.6**	**r (GRO), s**
A-3															
6/26/2000	--	15.75	9.00	29.50	11.98	3.77	--	--	--	--	--	--	--	--	
7/20/2000	--		9.00	29.50	12.21	3.54	--	--	--	--	--	--	--	--	
9/19/2000	--		9.00	29.50	12.50	3.25	--	--	--	--	--	--	--	--	
12/26/2000	--		9.00	29.50	12.17	3.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		9.00	29.50	10.70	5.05	--	--	--	--	--	--	--	--	
6/12/2001	--		9.00	29.50	12.09	3.66	--	--	--	--	--	--	--	--	
9/23/2001	--		9.00	29.50	12.65	3.10	--	--	--	--	--	--	--	--	
12/28/2001	--		9.00	29.50	9.94	5.81	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		9.00	29.50	9.69	6.06	--	--	--	--	--	--	--	--	
4/17/2002	--		9.00	29.50	10.61	5.14	--	--	--	--	--	--	--	--	
8/14/2002	--		9.00	29.50	12.27	3.48	--	--	--	--	--	--	--	--	
11/27/2002	--		9.00	29.50	12.22	3.53	--	--	--	--	--	--	--	--	
2/12/2003	--		9.00	29.50	11.40	4.35	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.9	d
5/22/2003	--		9.00	29.50	11.42	4.33	--	--	--	--	--	--	--	--	
7/23/2003	--		9.00	29.50	12.00	3.75	--	--	--	--	--	--	--	--	
02/16/2004	--	18.37	9.00	29.50	10.94	7.43	--	--	--	--	--	--	--	--	g, i
05/06/2004	--		9.00	29.50	11.75	6.62	--	--	--	--	--	--	--	--	
09/02/2004	--		9.00	29.50	12.15	6.22	--	--	--	--	--	--	--	--	
11/29/2004	--		9.00	29.50	11.87	6.50	--	--	--	--	--	--	--	--	
02/02/2005	--		9.00	29.50	10.42	7.95	--	--	--	--	--	--	--	--	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-3 Cont.															
05/09/2005	--	18.37	9.00	29.50	10.49	7.88	--	--	--	--	--	--	--	--	
08/11/2005	--		9.00	29.50	12.02	6.35	--	--	--	--	--	--	--	--	
02/09/2006	--		9.00	29.50	11.27	7.10	--	--	--	--	--	--	--	--	
8/11/2006	--		9.00	29.50	11.83	6.54	--	--	--	--	--	--	--	--	
2/7/2007	--		9.00	29.50	11.82	6.55	--	--	--	--	--	--	--	--	
8/14/2007	--		9.00	29.50	12.06	6.31	--	--	--	--	--	--	--	--	
2/22/2008	--		9.00	29.50	10.25	8.12	--	--	--	--	--	--	--	--	
8/12/2008	--		9.00	29.50	12.10	6.27	--	--	--	--	--	--	--	--	
1/8/2009	--		9.00	29.50	11.71	6.66	--	--	--	--	--	--	--	--	
9/4/2009	--		9.00	29.50	12.57	5.80	--	--	--	--	--	--	--	--	
3/5/2010	--		9.00	29.50	9.13	9.24	--	--	--	--	--	--	--	--	
3/11/2011	--		9.00	29.50	--	--	--	--	--	--	--	--	--	--	q
A-4															
6/26/2000	--	15.25	8.00	28.00	10.99	4.26	--	--	--	--	--	--	--	--	
7/20/2000	--		8.00	28.00	11.16	4.09	--	--	--	--	--	--	--	--	
9/19/2000	--		8.00	28.00	11.97	3.28	--	--	--	--	--	--	--	--	
12/26/2000	--		8.00	28.00	11.19	4.06	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		8.00	28.00	9.81	5.44	--	--	--	--	--	--	--	--	
6/12/2001	--		8.00	28.00	11.12	4.13	--	--	--	--	--	--	--	--	
9/23/2001	--		8.00	28.00	11.63	3.62	--	--	--	--	--	--	--	--	
12/28/2001	--		8.00	28.00	8.41	6.84	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		8.00	28.00	8.63	6.62	--	--	--	--	--	--	--	--	
4/17/2002	--		8.00	28.00	9.68	5.57	--	--	--	--	--	--	--	--	
8/14/2002	--		8.00	28.00	11.31	3.94	--	--	--	--	--	--	--	--	
11/27/2002	--		8.00	28.00	11.25	4.00	--	--	--	--	--	--	--	--	
2/12/2003	--		8.00	28.00	10.37	4.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.9	7.1	d
5/22/2003	--		8.00	28.00	10.42	4.83	--	--	--	--	--	--	--	--	
7/23/2003	--		8.00	28.00	11.02	4.23	--	--	--	--	--	--	--	--	
02/16/2004	--	18.01	8.00	28.00	9.65	8.36	--	--	--	--	--	--	--	--	g, i
05/06/2004	--		8.00	28.00	10.68	7.33	--	--	--	--	--	--	--	--	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-4 Cont.															
09/02/2004	--	18.01	8.00	28.00	10.83	7.18	--	--	--	--	--	--	--	--	
11/29/2004	--		8.00	28.00	10.50	7.51	--	--	--	--	--	--	--	--	
02/02/2005	--		8.00	28.00	9.22	8.79	--	--	--	--	--	--	--	--	
05/09/2005	--		8.00	28.00	8.98	9.03	--	--	--	--	--	--	--	--	
08/11/2005	--		8.00	28.00	10.99	7.02	--	--	--	--	--	--	--	--	
02/09/2006	--		8.00	28.00	10.15	7.86	--	--	--	--	--	--	--	--	
8/11/2006	--		8.00	28.00	10.30	7.71	--	--	--	--	--	--	--	--	
2/7/2007	--		8.00	28.00	10.63	7.38	--	--	--	--	--	--	--	--	
8/14/2007	--		8.00	28.00	10.70	7.31	--	--	--	--	--	--	--	--	
2/22/2008	--		8.00	28.00	8.90	9.11	--	--	--	--	--	--	--	--	
8/12/2008	--		8.00	28.00	10.60	7.41	--	--	--	--	--	--	--	--	
1/8/2009	--		8.00	28.00	10.90	7.11	--	--	--	--	--	--	--	--	
9/4/2009	--		8.00	28.00	11.80	6.21	--	--	--	--	--	--	--	--	
3/5/2010	--		8.00	28.00	7.64	10.37	--	--	--	--	--	--	--	--	
3/11/2011	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	q
A-5															
6/26/2000	--	13.51	8.00	30.00	10.04	3.47	--	--	--	--	--	--	--	--	
7/20/2000	--		8.00	30.00	10.31	3.20	730	140	11	<0.5	8.9	3	--	--	
9/19/2000	--		8.00	30.00	10.55	2.96	160	13	<0.5	2.8	1.9	<3	--	--	
12/26/2000	--		8.00	30.00	10.37	3.14	8,120	465	108	659	1,450	<250	--	--	
3/20/2001	--		8.00	30.00	8.81	4.70	7,990	1,110	473	611	1,580	<250	--	--	
6/12/2001	--		8.00	30.00	10.13	3.38	450	91	18	35	95	<5.0	--	--	
9/23/2001	--		8.00	30.00	10.80	2.71	110	20	<0.5	5	5	2.7	--	--	
12/28/2001	--		8.00	30.00	8.17	5.34	320	24	2	20	27	5	--	--	
3/21/2002	--		8.00	30.00	7.78	5.73	2,500	420	85	130	350	31	--	--	
4/17/2002	--		8.00	30.00	8.68	4.83	1,300	190	36	67	210	<25	--	--	
8/14/2002	--		8.00	30.00	10.41	3.10	840	150	<5.0	68	41	<25	1.4	6.8	b
11/27/2002	--		8.00	30.00	10.50	3.01	300	26	2.3	17	6	<0.5	1.16	7.2	b
2/12/2003	--		8.00	30.00	10.81	2.70	<500	74	7	34	45	<5.0	1.0	7.3	d
5/22/2003	--		8.00	30.00	9.46	4.05	500	100	9	28	47	<5.0	1.0	7.6	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-5 Cont.															
7/23/2003	--	13.51	8.00	30.00	10.29	3.22	900	100	5.7	65	57	<5.0	4.5	8.4	
11/13/2003	NP		8.00	30.00	11.24	2.27	1,800	210	5.1	190	140	<5.0	4.3	7.32	f
02/16/2004	NP	16.09	8.00	30.00	9.45	6.64	680	52	15	50	77	<0.50	5.0	7.8	h, i
05/06/2004	P		8.00	30.00	10.28	5.81	1,500	140	13	72	110	<2.5	1.03	6.93	
09/02/2004	NP		8.00	30.00	10.78	5.31	690	69	1.3	42	35	<1.0	1.3	7.1	
11/29/2004	NP		8.00	30.00	10.05	6.04	<5,000	360	<50	190	290	<50	1.0	7.0	
02/02/2005	NP		8.00	30.00	8.37	7.72	220	31	2.3	10	13	<0.50	0.6	7.4	
05/09/2005	NP		8.00	30.00	8.45	7.64	110	1.7	<0.50	1.4	1.1	<0.50	2.5	7.6	
08/11/2005	NP		8.00	30.00	10.11	5.98	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.3	
02/09/2006	NP		8.00	30.00	9.02	7.07	<50	0.62	<0.50	<0.50	<0.50	<0.50	0.89	7.3	o
8/11/2006	NP		8.00	30.00	9.77	6.32	400	13	3.4	8.0	58	<0.50	2.16	7.2	
2/7/2007	P		8.00	30.00	9.90	6.19	10,000	670	120	1,100	3,100	<10	2.12	7.03	
8/14/2007	NP		8.00	30.00	9.70	6.39	28,000	260	68	3,000	7,800	<10	1.37	7.80	
2/22/2008	NP		8.00	30.00	8.02	8.07	27,000	410	98	2,600	4,400	<50	1.36	7.42	
8/12/2008	NP		8.00	30.00	9.50	6.59	31,000	140	<50	1,800	3,900	<50	0.62	9.70	
1/8/2009	NP		8.00	30.00	9.29	6.80	39,000	300	53	2,400	5,400	<50	0.67	7.59	
9/4/2009	NP		8.00	30.00	10.42	5.67	130	<0.50	<0.50	<0.50	<0.50	<0.50	0.46	7.19	
3/5/2010	P		8.00	30.00	7.55	8.54	110	1.4	<0.50	6.1	7.3	<0.50	0.59	7.18	
3/11/2011	NP		8.00	30.00	8.30	7.79	190	7.4	<0.50	15	10	<0.50	2.33	7.6	p (GRO)
8/26/2011	**P**		**8.00**	**30.00**	**9.81**	**6.28**	**1,900**	**36**	**1.4**	**190**	**52**	**<0.50**	**0.57**	**7.0**	
A-6															
6/26/2000	--	13.51	8.00	28.50	10.09	3.42	--	--	--	--	--	--	--	--	
7/20/2000	--		8.00	28.50	10.91	2.60	170	<0.5	<0.5	0.6	2	6	--	--	
9/19/2000	--		8.00	28.50	11.27	2.24	<50	<0.5	<0.5	<0.5	<1.0	6	--	--	
12/26/2000	--		8.00	28.50	10.65	2.86	56.2	<0.5	<0.5	<0.5	<0.5	8.17	--	--	
3/20/2001	--		8.00	28.50	8.72	4.79	216	<0.5	<0.5	<0.5	1.8	19.9	--	--	
6/12/2001	--		8.00	28.50	10.80	2.71	80	0.62	<0.5	<0.5	<0.5	15	--	--	
9/23/2001	--		8.00	28.50	10.79	2.72	450	1.7	1.9	2.3	3.3	53	--	--	
12/28/2001	--		8.00	28.50	8.05	5.46	270	0.98	3.5	0.77	1.4	26	--	--	
3/21/2002	--		8.00	28.50	7.83	5.68	130	<0.5	<0.5	<0.5	<0.5	19	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-6 Cont.															
4/17/2002	--	13.51	8.00	28.50	8.73	4.78	<50	<0.5	<0.5	<0.5	<0.5	16	--	--	
8/14/2002	--		8.00	28.50	10.43	3.08	980	4.8	2.6	2	4.9	75	1.5	7.1	b
11/27/2002	--		8.00	28.50	10.47	3.04	280	<0.5	0.74	<0.5	<0.5	16	0.9	6.9	b
2/12/2003	--		8.00	28.50	10.44	3.07	51	<0.50	<0.50	<0.50	<0.50	9.9	0.8	7.1	d
5/22/2003	--		8.00	28.50	9.43	4.08	<50	<0.50	<0.50	<0.50	<0.50	11	1.2	8.2	
7/23/2003	--		8.00	28.50	10.27	3.24	120	<0.50	<0.50	<0.50	<0.50	14	>20	9.6	
11/13/2003	NP		8.00	28.50	11.20	2.31	<50	<0.50	<0.50	<0.50	<0.50	2.3	6.2	9.0	f
02/16/2004	NP	16.10	8.00	28.50	9.76	6.34	50	<0.50	<0.50	<0.50	<0.50	3.9	6.5	8.3	h, i
05/06/2004	P		8.00	28.50	10.03	6.07	110	<0.50	<0.50	<0.50	<0.50	7.1	1.01	7.02	
09/02/2004	NP		8.00	28.50	10.47	5.63	56	<0.50	<0.50	<0.50	<0.50	4.4	3.2	7.4	
11/29/2004	NP		8.00	28.50	9.99	6.11	<50	<0.50	<0.50	<0.50	<0.50	2.9	0.92	6.9	
02/02/2005	NP		8.00	28.50	8.46	7.64	150	<0.50	<0.50	<0.50	<0.50	14	0.5	7.4	
05/09/2005	NP		8.00	28.50	8.55	7.55	93	<0.50	<0.50	<0.50	<0.50	12	3.0	7.2	
08/11/2005	NP		8.00	28.50	10.13	5.97	780	<0.50	<0.50	<0.50	<0.50	14	1.0	6.9	
02/09/2006	NP		8.00	28.50	9.23	6.87	210	<0.50	<0.50	<0.50	<0.50	17	1.27	6.8	o
8/11/2006	NP		8.00	28.50	9.95	6.15	920	<0.50	<0.50	<0.50	<0.50	21	1.6	7.0	
2/7/2007	P		8.00	28.50	9.72	6.38	170	<0.50	<0.50	<0.50	1.4	7.1	2.18	7.24	
8/14/2007	NP		8.00	28.50	9.82	6.28	<50	<0.50	<0.50	<0.50	<0.50	2.3	1.72	8.22	
2/22/2008	NP		8.00	28.50	8.07	8.03	350	<0.50	<0.50	<0.50	<0.50	11	0.79	7.48	
8/12/2008	NP		8.00	28.50	9.70	6.40	<50	<0.50	<0.50	<0.50	<0.50	2.4	0.58	9.58	
1/8/2009	NP		8.00	28.50	9.45	6.65	<50	<0.50	<0.50	<0.50	<0.50	1.6	0.61	7.32	
9/4/2009	NP		8.00	28.50	10.60	5.50	<50	<0.50	<0.50	<0.50	<0.50	4.9	0.51	7.18	
3/5/2010	P		8.00	28.50	7.27	8.83	320	<0.50	<0.50	<0.50	<0.50	4.1	0.65	7.11	
3/11/2011	NP		8.00	28.50	8.37	7.73	160	<0.50	<0.50	<0.50	<0.50	5.7	1.56	7.7	p (GRO)
8/26/2011	**P**		**8.00**	**28.50**	**9.90**	**6.20**	**70**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.2**	**1.22**	**7.3**	
ADR-1															
6/26/2000	--	13.95	5.00	22.00	10.55	3.40	--	--	--	--	--	--	--	--	
7/20/2000	--		5.00	22.00	10.85	3.10	180	29	<0.5	0.8	<1.0	22	--	--	
9/19/2000	--		5.00	22.00	11.08	2.87	120	7.4	<0.5	1.2	<1.0	22	--	--	
12/26/2000	--		5.00	22.00	10.93	3.02	<50	1.29	<0.5	<0.5	<0.5	14.7	--	--	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ADR-1 Cont.															
3/20/2001	--	13.95	5.00	22.00	9.32	4.63	225	23.4	<0.5	8.71	4.13	10.8	--	--	
6/12/2001	--		5.00	22.00	10.65	3.30	250	23	0.5	13	4.2	7.5	--	--	
9/23/2001	--		5.00	22.00	11.25	2.70	<50	1.4	<0.5	<0.5	0.57	2.8	--	--	
12/28/2001	--		5.00	22.00	8.43	5.52	250	16	<0.5	1.2	4.1	6.8	--	--	
3/21/2002	--		5.00	22.00	8.27	5.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
4/17/2002	--		5.00	22.00	9.17	4.78	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/14/2002	--		5.00	22.00	11.88	2.07	<50	1.1	<0.5	<0.5	<0.5	<2.5	3.4	6.7	
11/27/2002	--		5.00	22.00	10.91	3.04	<50	0.54	<0.5	<0.5	<0.5	1.1	1.8	6.8	
2/12/2003	--		5.00	22.00	9.95	4.00	<50	<0.50	<0.50	<0.50	<0.50	0.73	1.9	7.2	d
5/22/2003	--		5.00	22.00	9.86	4.09	<50	0.96	<0.50	<0.50	<0.50	3.5	1.2	7.3	
7/23/2003	--		5.00	22.00	10.59	3.36	<50	2.5	<0.50	0.56	<0.50	4	>20	9.4	
11/13/2003	--		5.00	22.00	11.15	2.80	<50	0.60	<0.50	<0.50	<0.50	1.6	8.5	8.2	f
02/16/2004	NP	16.56	5.00	22.00	9.43	7.13	<50	<0.50	<0.50	<0.50	<0.50	1.6	5.5	9.6	f, i
05/07/2004	NP		5.00	22.00	10.41	6.15	<500	5.3	<5.0	<5.0	<5.0	<5.0	1.72	7.0	
09/02/2004	NP		5.00	22.00	10.73	5.83	<50	<0.50	<0.50	<0.50	<0.50	0.84	18.1	8.4	
11/29/2004	NP		5.00	22.00	10.30	6.26	<50	3.0	<0.50	<0.50	<0.50	<0.50	0.77	6.9	
02/02/2005	NP		5.00	22.00	9.02	7.54	<50	<0.50	<0.50	<0.50	<0.50	3.4	0.5	7.5	
05/09/2005	NP		5.00	22.00	8.92	7.64	<50	<0.50	<0.50	<0.50	<0.50	2.6	2.9	7.3	
08/11/2005	NP		5.00	22.00	10.57	5.99	67	2.8	<0.50	<0.50	<0.50	4.0	0.6	6.0	
02/09/2006	NP		5.00	22.00	10.05	6.51	<50	<0.50	<0.50	<0.50	<0.50	2.9	1.09	7.0	o
8/11/2006	NP		5.00	22.00	10.20	6.36	76	<0.50	<0.50	<0.50	<0.50	2.2	1.06	7.1	
2/7/2007	NP		5.00	22.00	10.15	6.41	<50	<0.50	<0.50	<0.50	<0.50	3.8	0.64	7.33	
8/14/2007	NP		5.00	22.00	10.30	6.26	560	11	1.7	12	2.5	3.6	0.94	7.38	
2/22/2008	NP		5.00	22.00	8.55	8.01	120	<0.50	<0.50	<0.50	<0.50	3.9	1.52	6.95	
8/12/2008	NP		5.00	22.00	10.20	6.36	1,400	46	7.7	13	19	6.5	0.50	9.32	
1/8/2009	NP		5.00	22.00	9.95	6.61	740	<0.50	0.94	<0.50	0.58	2.4	0.47	7.36	
9/4/2009	NP		5.00	22.00	11.06	5.50	810	<0.50	0.65	<0.50	<0.50	<0.50	0.61	7.17	
3/5/2010	NP		5.00	22.00	7.62	8.94	62	<0.50	<0.50	<0.50	<0.50	0.92	1.33	7.01	
3/11/2011	NP		5.00	22.00	8.88	7.68	<50	<0.50	<0.50	<0.50	<0.50	1.4	1.60	7.3	
8/26/2011	**P**		**5.00**	**22.00**	**10.42**	**6.14**	**840**	**54**	**2.7**	**13**	**48**	**1.7**	**0.46**	**7.0**	

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ADR-2															
6/26/2000	--	14.64	5.00	22.00	11.22	3.42	--	--	--	--	--	--	--	--	
7/20/2000	--		5.00	22.00	11.60	3.04	12,000	410	2.5	540	720	23	--	--	
9/19/2000	--		5.00	22.00	11.81	2.83	1,400	530	5	680	740	34	--	--	
12/26/2000	--		5.00	22.00	11.52	3.12	901	26.6	<5.0	21.4	32.5	32.8	--	--	
3/20/2001	--		5.00	22.00	10.10	4.54	--	--	--	--	--	--	--	--	j
6/12/2001	--		5.00	22.00	11.41	3.23	--	--	--	--	--	--	--	--	j
9/23/2001	--		5.00	22.00	11.98	2.66	5,300	370	<5.0	550	96	60	--	--	
12/28/2001	--		5.00	22.00	9.48	5.16	2,600	190	<5.0	160	29	61	--	--	
3/21/2002	--		5.00	22.00	9.10	5.54	180	6	<0.5	4.5	3.2	15	--	--	
4/17/2002	--		5.00	22.00	9.93	4.71	730	86	<0.5	13	<0.5	<25	--	--	
8/14/2002	--		5.00	22.00	12.09	2.55	1,300	170	<10	100	47	<50	0.9	7.0	b
11/27/2002	--		5.00	22.00	11.66	2.98	1,800	240	3.1	120	14	74	0.6	6.9	b
2/12/2003	--		5.00	22.00	10.74	3.90	760	120	<5.0	15	5.2	22	1.3	7.1	d
5/22/2003	--		5.00	22.00	10.67	3.97	520	110	<5.0	7.1	<5.0	9.7	0.7	7.6	
7/23/2003	--		5.00	22.00	11.38	3.26	140	2.8	<0.50	5	0.98	8.4	>20	9.4	
02/16/2004	--	17.24	5.00	22.00	10.26	6.98	--	--	--	--	--	--	--	--	f, i
05/06/2004	--		5.00	22.00	11.05	6.19	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	22.00	11.50	5.74	<500	67	<5.0	71	12	5.6	0.7	7.4	
11/29/2004	--		5.00	22.00	11.20	6.04	--	--	--	--	--	--	--	--	
02/02/2005	--		5.00	22.00	9.76	7.48	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	22.00	11.18	6.06	--	--	--	--	--	--	--	--	
08/11/2005	NP		5.00	22.00	11.30	5.94	1,900	200	<2.5	160	9.6	9.0	0.6	6.6	
02/09/2006	--		5.00	22.00	9.60	7.64	--	--	--	--	--	--	--	--	
8/11/2006	NP		5.00	22.00	11.13	6.11	570	54	<1.0	2.2	<1.0	4.6	0.8	7.1	
2/7/2007	--		5.00	22.00	11.08	6.16	--	--	--	--	--	--	--	--	
8/14/2007	NP		5.00	22.00	11.28	5.96	520	5.4	<0.50	3.6	<0.50	5.3	0.65	7.37	
2/22/2008	--		5.00	22.00	9.47	7.77	--	--	--	--	--	--	--	--	
8/12/2008	NP		5.00	22.00	11.27	5.97	560	0.92	<0.50	0.80	<0.50	4.2	0.71	9.40	
1/8/2009	--		5.00	22.00	10.88	6.36	--	--	--	--	--	--	--	--	
9/4/2009	NP		5.00	22.00	11.79	5.45	330	0.66	<0.50	<0.50	<0.50	1.9	0.55	7.38	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ADR-2 Cont.															
3/5/2010	--	17.24	5.00	22.00	8.55	8.69	--	--	--	--	--	--	--	--	
3/11/2011	NP		5.00	22.00	9.65	7.59	230	0.55	<0.50	0.56	<0.50	1.9	1.27	7.6	p (GRO)
8/26/2011	**P**		**5.00**	**22.00**	**11.27**	**5.97**	**1,900**	**6.7**	**<0.50**	**7.1**	**<0.50**	**40**	**1.18**	**7.3**	**j**
AR-1															
6/26/2000	--	15.61	8.00	28.00	11.59	4.02	--	--	--	--	--	--	--	--	
7/20/2000	--		8.00	28.00	12.06	3.55	<50	<0.5	<0.5	<0.5	<1.0	6	--	--	
9/19/2000	--		8.00	28.00	11.89	3.72	<50	<0.5	<0.5	<0.5	<1.0	<3	--	--	
12/26/2000	--		8.00	28.00	11.95	3.66	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
03/20/2001	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	a
6/12/2001	--		8.00	28.00	11.87	3.74	<50	<0.5	<0.5	<0.5	<0.5	17	--	--	
9/23/2001	--		8.00	28.00	12.42	3.19	--	--	--	--	--	--	--	--	
12/28/2001	--		8.00	28.00	7.62	7.99	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		8.00	28.00	9.37	6.24	--	--	--	--	--	--	--	--	
4/17/2002	--		8.00	28.00	10.43	5.18	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/14/2002	--		8.00	28.00	12.08	3.53	<50	<0.5	<0.5	<0.5	1.3	<2.5	2.2	7.9	
11/27/2002	--		8.00	28.00	12.00	3.61	--	--	--	--	--	--	--	--	
2/12/2003	--		8.00	28.00	10.89	4.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	7.9	d
5/22/2003	--		8.00	28.00	11.18	4.43	--	--	--	--	--	--	--	--	
7/23/2003	--		8.00	28.00	11.73	3.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	7.7	
11/13/2003	--		8.00	28.00	12.05	3.56	--	--	--	--	--	--	--	--	
02/16/2004	--	18.18	8.00	28.00	10.35	7.83	--	--	--	--	--	--	--	--	
05/06/2004	--		8.00	28.00	11.60	6.58	--	--	--	--	--	--	--	--	
09/02/2004	P		8.00	28.00	11.88	6.30	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	7.8	
11/29/2004	--		8.00	28.00	11.55	6.63	--	--	--	--	--	--	--	--	
02/02/2005	--		8.00	28.00	9.92	8.26	--	--	--	--	--	--	--	--	
05/09/2005	--		8.00	28.00	10.19	7.99	--	--	--	--	--	--	--	--	
08/11/2005	P		8.00	28.00	11.80	6.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	7.4	7.6	n
02/09/2006	--		8.00	28.00	10.49	7.69	--	--	--	--	--	--	--	--	
8/11/2006	P		8.00	28.00	11.48	6.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.42	8.1	
2/7/2007	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	e

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Well ID and Date Monitored	P/NP	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	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-1 Cont.															
8/14/2007	--	18.18	8.00	28.00	--	--	--	--	--	--	--	--	--	--	e
2/22/2008	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	e
8/12/2008	NP		8.00	28.00	11.57	6.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.42	9.51	
1/8/2009	--		8.00	28.00	11.43	6.75	--	--	--	--	--	--	--	--	
9/4/2009	NP		8.00	28.00	12.52	5.66	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.62	7.61	
3/5/2010	--		8.00	28.00	8.66	9.52	--	--	--	--	--	--	--	--	
3/11/2011	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	q
AR-2															
6/26/2000	--	15.28	8.50	28.50	11.79	3.49	--	--	--	--	--	--	--	--	
7/20/2000	--		8.50	28.50	12.07	3.21	<50	<0.5	<0.5	<0.5	<1.0	<3	--	--	
9/19/2000	--		8.50	28.50	12.08	3.20	<50	<0.5	<0.5	<0.5	<1.0	<3	--	--	
12/26/2000	--		8.50	28.50	11.95	3.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		8.50	28.50	10.50	4.78	--	--	--	--	--	--	--	--	
6/12/2001	--		8.50	28.50	11.73	3.55	<50	<0.5	<0.5	<0.5	<0.5	82	--	--	
9/23/2001	--		8.50	28.50	12.43	2.85	--	--	--	--	--	--	--	--	
12/28/2001	--		8.50	28.50	8.60	6.68	<50	<0.5	<0.5	<0.5	<0.5	30	--	--	
3/21/2002	--		8.50	28.50	9.49	5.79	--	--	--	--	--	--	--	--	
4/17/2002	--		8.50	28.50	10.37	4.91	<50	<0.5	<0.5	<0.5	<0.5	3.2	--	--	
8/14/2002	--		8.50	28.50	12.13	3.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.4	7.9	
11/27/2002	--		8.50	28.50	12.08	3.20	--	--	--	--	--	--	--	--	
2/12/2003	--		8.50	28.50	11.15	4.13	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	7.5	d
5/22/2003	--		8.50	28.50	11.18	4.10	--	--	--	--	--	--	--	--	
7/23/2003	--		8.50	28.50	11.85	3.43	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	8.2	
11/13/2003	--		8.50	28.50	11.98	3.30	--	--	--	--	--	--	--	--	f
02/16/2004	--	17.87	8.50	28.50	10.69	7.18	--	--	--	--	--	--	--	--	f, i
05/06/2004	--		8.50	28.50	11.55	6.32	--	--	--	--	--	--	--	--	
09/02/2004	--		8.50	28.50	--	--	--	--	--	--	--	--	--	--	k
09/20/2004	NP		8.50	28.50	11.98	5.89	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	10.4	
11/29/2004	--		8.50	28.50	12.62	5.25	--	--	--	--	--	--	--	--	
02/02/2005	--		8.50	28.50	10.12	7.75	--	--	--	--	--	--	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-2 Cont.															
05/09/2005	--	17.87	8.50	28.50	10.13	7.74	--	--	--	--	--	--	--	--	
08/11/2005	NP		8.50	28.50	11.73	6.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	7.3	
02/09/2006	--		8.50	28.50	10.03	7.84	--	--	--	--	--	--	--	--	
8/11/2006	NP		8.50	28.50	11.61	6.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	7.4	
2/7/2007	--		8.50	28.50	11.52	6.35	--	--	--	--	--	--	--	--	
8/14/2007	NP		8.50	28.50	11.75	6.12	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.86	7.41	
2/22/2008	--		8.50	28.50	9.82	8.05	--	--	--	--	--	--	--	--	
8/12/2008	NP		8.50	28.50	11.78	6.09	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.37	9.13	
1/8/2009	--		8.50	28.50	11.40	6.47	--	--	--	--	--	--	--	--	
9/4/2009	NP		8.50	28.50	11.32	6.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.53	7.56	
3/5/2010	--		8.50	28.50	9.04	8.83	--	--	--	--	--	--	--	--	
3/11/2011	NP		8.50	28.50	9.80	8.07	150	<0.50	<0.50	<0.50	<0.50	<0.50	2.40	8.6	p (GRO)
8/26/2011	**P**		**8.50**	**28.50**	**11.39**	**6.48**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.03**	**8.4**	

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = Feet below ground surface
ft MSL = Feet above mean sea level
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft MSL
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether analyzed by EPA Method 8021B unless otherwise noted
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft MSL
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter

Footnotes:
a = Well was covered by stockpiled soil and not accessible
b = GRO/TPH-g chromatogram pattern: Gasoline C6-C10
c = Primary and confirmation results for xylene varied by greater than 40% RPD. The values may still be useful for their intended purpose
d = TPH-g, BTEX, and MTBE analyzed using EPA Method 8260B starting first quarter 2003
e = Well inaccessible
f = ORC sock in well
g = Well removed from annual sampling schedule
h = ORC sock removed prior to gauging
i = Site re-survey to NAV'88 datum on January 30, 2004
j = Sheen in well
k = Car parked over well AR-2 during monitoring event on 9/2/04. Well was sampled 9/20/04
m = Hydrocarbon result partly due to individual peak(s) in quant. range
n = Possible low bias for GRO due to CCV falling outside acceptance criteria
o = Initial analysis within holding time but failed QA/QC criteria
p = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
q = Well decommissioned 6/16/2010
r = Quantitated against gasoline
s = Reporting limits raised due to high level of non-target analytes

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

Top and bottom of screen depths for wells ADR-1 and ADR-2 are estimated from EMCON sampling sheets

Values for DO and pH 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 the present

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

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-1									
7/20/2000	--	--	25	--	--	--	--	--	
9/19/2000	--	--	32	--	--	--	--	--	
12/26/2000	--	--	18.7	--	--	--	--	--	
3/20/2001	--	--	<25	--	--	--	--	--	
6/12/2001	--	--	25	--	--	--	--	--	
9/23/2001	--	--	4.5	--	--	--	--	--	
12/28/2001	--	--	<25	--	--	--	--	--	
3/21/2002	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
8/14/2002	--	--	4.9	--	--	--	--	--	
11/27/2002	--	--	6.4	--	--	--	--	--	
2/12/2003	<40	<20	2.9	<0.50	<0.50	<0.50	--	--	
5/22/2003	<100	<20	4.9	<0.50	<0.50	<0.50	--	--	
7/23/2003	<100	<20	10	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	4.2	<0.50	<0.50	<0.50	--	--	
02/16/2004	<100	<20	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	
05/06/2004	<100	<20	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/02/2005	<100	<20	5.1	<0.50	<0.50	<0.50	<0.50	<0.50	a
05/09/2005	<100	<20	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	a
02/09/2006	<300	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/11/2006	<300	<20	3.7	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<300	<20	20	<0.50	<0.50	<0.50	<0.50	<0.50	
8/14/2007	<300	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
2/22/2008	<1,500	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
8/12/2008	<1,500	<50	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
1/8/2009	<6,000	<200	<10	<10	<10	<10	<10	<10	
9/4/2009	<300	<10	7.4	<0.50	<0.50	<0.50	<0.50	<0.50	
3/5/2010	<300	<10	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<3,000	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-1 Cont.									
8/26/2011	**<3,000**	**<100**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	
A-2									
7/20/2000	--	--	<3	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	<2.5	--	--	--	--	--	
12/28/2001	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	26	--	--	--	--	--	
8/14/2002	--	--	<2.5	--	--	--	--	--	
2/12/2003	<40	<20	12	<0.50	<0.50	<0.50	--	--	
7/23/2003	<100	<20	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	a
8/11/2006	<300	<20	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
8/14/2007	<300	<20	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
8/12/2008	<300	<10	0.96	<0.50	<0.50	<0.50	<0.50	<0.50	
9/4/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/26/2011	**<1,200**	**<40**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	**<2.0**	
A-3									
12/26/2000	--	--	<2.5	--	--	--	--	--	
12/28/2001	--	--	<2.5	--	--	--	--	--	
2/12/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	
A-4									
12/26/2000	--	--	<2.5	--	--	--	--	--	
12/28/2001	--	--	<2.5	--	--	--	--	--	
2/12/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	
A-5									
7/20/2000	--	--	3	--	--	--	--	--	
9/19/2000	--	--	<3	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-5 Cont.									
12/26/2000	--	--	<250	--	--	--	--	--	
3/20/2001	--	--	<250	--	--	--	--	--	
6/12/2001	--	--	<5.0	--	--	--	--	--	
9/23/2001	--	--	2.7	--	--	--	--	--	
12/28/2001	--	--	5	--	--	--	--	--	
3/21/2002	--	--	31	--	--	--	--	--	
4/17/2002	--	--	<25	--	--	--	--	--	
8/14/2002	--	--	<25	--	--	--	--	--	
11/27/2002	--	--	<0.5	--	--	--	--	--	
2/12/2003	<400	<200	<5.0	<5.0	<5.0	<5.0	--	--	
5/22/2003	<1,000	<200	<5.0	<5.0	<5.0	<5.0	--	--	
7/23/2003	<1,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
11/13/2003	<1,000	<200	<5.0	<5.0	<5.0	<5.0	--	--	
02/16/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
05/06/2004	<500	<100	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
09/02/2004	<200	<40	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
11/29/2004	<10,000	<2,000	<50	<50	<50	<50	<50	<50	
02/02/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
05/09/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
02/09/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/11/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<6,000	<400	<10	<10	<10	<10	<10	<10	
8/14/2007	<6,000	<400	<10	<10	<10	<10	<10	<10	d (1,2-DCA)
2/22/2008	<30,000	<1,000	<50	<50	<50	<50	<50	<50	
8/12/2008	<30,000	<1,000	<50	<50	<50	<50	<50	<50	
1/8/2009	<30,000	<1,000	<50	<50	<50	<50	<50	<50	
9/4/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/5/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/26/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-6									
7/20/2000	--	--	6	--	--	--	--	--	
9/19/2000	--	--	6	--	--	--	--	--	
12/26/2000	--	--	8.17	--	--	--	--	--	
3/20/2001	--	--	19.9	--	--	--	--	--	
6/12/2001	--	--	15	--	--	--	--	--	
9/23/2001	--	--	53	--	--	--	--	--	
12/28/2001	--	--	26	--	--	--	--	--	
3/21/2002	--	--	19	--	--	--	--	--	
4/17/2002	--	--	16	--	--	--	--	--	
8/14/2002	--	--	75	--	--	--	--	--	
11/27/2002	--	--	16	--	--	--	--	--	
2/12/2003	<40	<20	9.9	<0.50	<0.50	<0.50	--	--	
5/22/2003	<100	<20	11	<0.50	<0.50	0.6	--	--	
7/23/2003	<100	<20	14	<0.50	<0.50	0.54	<0.50	<0.50	
11/13/2003	<100	<20	2.3	<0.50	<0.50	<0.50	--	--	
02/16/2004	<100	<20	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	
05/06/2004	<100	<20	7.1	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	
02/02/2005	<100	<20	14	<0.50	<0.50	0.91	<0.50	<0.50	a
05/09/2005	<100	<20	12	<0.50	<0.50	0.66	<0.50	<0.50	
08/11/2005	<100	<20	14	<0.50	<0.50	2.2	<0.50	<0.50	a
02/09/2006	<300	<20	17	<0.50	<0.50	1.2	<0.50	<0.50	b
8/11/2006	<300	<20	21	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<300	<20	7.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/14/2007	<300	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
2/22/2008	<300	<10	11	<0.50	<0.50	0.89	<0.50	<0.50	
8/12/2008	<300	<10	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	
1/8/2009	<300	<10	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
9/4/2009	<300	<10	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
3/5/2010	<300	<10	4.1	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	5.7	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-6 Cont.									
8/26/2011	**<300**	**<10**	**2.2**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
ADR-1									
7/20/2000	--	--	22	--	--	--	--	--	
9/19/2000	--	--	22	--	--	--	--	--	
12/26/2000	--	--	14.7	--	--	--	--	--	
3/20/2001	--	--	10.8	--	--	--	--	--	
6/12/2001	--	--	7.5	--	--	--	--	--	
9/23/2001	--	--	2.8	--	--	--	--	--	
12/28/2001	--	--	6.8	--	--	--	--	--	
3/21/2002	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
8/14/2002	--	--	<2.5	--	--	--	--	--	
11/27/2002	--	--	1.1	--	--	--	--	--	
2/12/2003	<40	<20	0.73	<0.50	<0.50	<0.50	--	--	
5/22/2003	<100	<20	3.5	<0.50	<0.50	<0.50	--	--	
7/23/2003	<100	<20	4	<0.50	<0.50	<0.50	<0.50	<0.50	
11/13/2003	<100	<20	1.6	<0.50	<0.50	<0.50	--	--	
02/16/2004	<100	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
05/07/2004	<1,000	<200	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
09/02/2004	<100	<20	0.84	<0.50	<0.50	<0.50	<0.50	<0.50	
11/29/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/02/2005	<100	<20	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	a
05/09/2005	<100	<20	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	a
02/09/2006	<300	<20	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/11/2006	<300	<20	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<300	<20	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	
8/14/2007	<300	<20	3.6	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
2/22/2008	<300	<10	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	
8/12/2008	<600	<20	6.5	<1.0	<1.0	<1.0	<1.0	<1.0	
1/8/2009	<300	<10	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ADR-1 Cont.									
9/4/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/5/2010	<300	<10	0.92	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
8/26/2011	**<300**	**<10**	**1.7**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
ADR-2									
7/20/2000	--	--	23	--	--	--	--	--	
9/19/2000	--	--	34	--	--	--	--	--	
12/26/2000	--	--	32.8	--	--	--	--	--	
9/23/2001	--	--	60	--	--	--	--	--	
12/28/2001	--	--	61	--	--	--	--	--	
3/21/2002	--	--	15	--	--	--	--	--	
4/17/2002	--	--	<25	--	--	--	--	--	
8/14/2002	--	--	<50	--	--	--	--	--	
11/27/2002	--	--	74	--	--	--	--	--	
2/12/2003	<400	<200	22	<5.0	<5.0	<5.0	--	--	
5/22/2003	<1,000	<200	9.7	<5.0	<5.0	<5.0	--	--	
7/23/2003	<100	<20	8.4	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<1,000	<200	5.6	<5.0	<5.0	<5.0	<5.0	<5.0	
08/11/2005	<500	<100	9.0	<2.5	<2.5	<2.5	<2.5	<2.5	a
8/11/2006	<600	<40	4.6	<1.0	<1.0	<1.0	<1.0	<1.0	a, c
8/14/2007	<300	<20	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
8/12/2008	<300	<10	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	
9/4/2009	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
8/26/2011	**<300**	**11**	**40**	**<0.50**	**<0.50**	**14**	**<0.50**	**<0.50**	
AR-1									
7/20/2000	--	--	6	--	--	--	--	--	
9/19/2000	--	--	<3	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	17	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
AR-1 Cont.									
12/28/2001	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
8/14/2002	--	--	<2.5	--	--	--	--	--	
2/12/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	
7/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/11/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/12/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/4/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
AR-2									
7/20/2000	--	--	<3	--	--	--	--	--	
9/19/2000	--	--	<3	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	82	--	--	--	--	--	
12/28/2001	--	--	30	--	--	--	--	--	
4/17/2002	--	--	3.2	--	--	--	--	--	
8/14/2002	--	--	<2.5	--	--	--	--	--	
2/12/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	
7/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/20/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
8/11/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/14/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	d (1,2-DCA)
8/12/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/4/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/26/2011	**<300**	**<10**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

Symbols & Abbreviations:
-- = 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
g/L = Micrograms per Liter

Footnotes:
a = Calibration verification was within method limits but outside contract limits for ethanol
b = Initial analysis within holding time but failed QA/QC criteria
c = Possible high bias due to CCV failing outside acceptance criteria for TBA.
d = CCV recovery above limit; analyte not detected

Notes:
All volatile organic compounds analyzed using EPA Method 8260B

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 Groundwater Gradient - Direction and Magnitude

ARCO Service Station #2169, 889 W. Grand Ave., Oakland, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
7/20/2000	Northwest	0.004
9/19/2000	West-Northwest	0.003
12/26/2000	Northwest	0.004
3/20/2001	Northwest	0.003
6/12/2001	Northwest	0.004
9/23/2001	Northwest	0.004
12/28/2001	Variable	Variable
3/21/2002	Northwest	0.004
4/17/2002	Northwest	0.003
8/14/2002	West	0.003
11/27/2002	West	0.003
2/12/2003	South	0.005
5/22/2003	West to Northwest	0.002 to 0.003
7/23/2003	Southwest to Northwest	0.005 to 0.004
11/13/2003	Southwest	0.009
2/16/2004	Southwest	0.009
5/6/2004	Southwest	0.004
9/2/2004	West-Northwest	0.005
11/29/2004	West to Southwest	0.005 to 0.006
2/2/2005	Northwest to Southwest	0.005
5/9/2005	Northwest	0.01
8/11/2005	West	0.004
2/9/2006	West	0.003
8/11/2006	Northwest*	0.005
2/7/2007	North-Northwest*	0.004
8/14/2007	Northwest	0.005
2/22/2008	North-Northwest	0.005
8/12/2008	North-Northwest	0.005
1/8/2009	North-Northwest	0.003
9/4/2009	Northwest	0.002
3/5/2010	West-Northwest	0.006
3/11/2011	Northeast	0.002
8/26/2011	**Northeast**	**0.003**

Symbols & Abbreviations:
* = Base map provided to Broadbent & Associates, Inc. incorrectly oriented north arrow 47° east of true north. Flow directions from Broadbent & Associates, Inc. reports for Third Quarter 2006 and First Quarter 2007 corrected in table above

Notes:
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

FIELD METHODS

QUALITY ASSURANCE/QUALITY CONTROL
FIELD METHODS

Field methods discussed herein were implemented to provide for accuracy and reliability of field activities, data collection, sample collection, and handling. Discussion of these methods is provided below.

1.0 Equipment Calibration

Equipment calibration was performed per equipment manufacturer specifications before use.

2.0 Depth to Groundwater and Light Non-Aqueous Phase Liquid Measurement

Depth to groundwater was measured in wells identified for gauging in the scope of work using a decontaminated water level indicator. The depth to water measurement was taken from a cut notch or permanent mark at the top of the well casing to which the well head elevation was originally surveyed.

Once depth to water was measured, an oil/water interface meter or a new disposable bailer was utilized to evaluate the presence and, if present, to measure the "apparent" thickness of light non-aqueous phase liquid (LNAPL) in the well. If LNAPL was present in the well, groundwater purging and sampling were not performed, unless sampling procedures in the scope of work specified collection of samples in the presence of LNAPL. Otherwise, time allowing, LNAPL was bailed from the well using either a new disposable bailer, or the disposal bailer previously used for initial LNAPL assessment. Bailing of LNAPL continued until the thickness of LNAPL (or volume) stabilized in each bailer pulled from the well, or LNAPL was no longer present. After LNAPL thickness either stabilized or was eliminated, periodic depth to water and depth to LNAPL measurements were collected as product came back into the well to evaluate product recovery rate and to aid in further assessment of LNAPL in the subsurface. LNAPL thickness measurements were recorded as "apparent." If a bailer was used for LNAPL thickness measurement, the field sampler noted the bailer entry diameter and chamber diameter to enable correction of thickness measurements. Recovered LNAPL was stored on-site in a labeled steel drum(s) or other appropriate container(s) prior to disposal.

3.0 Well Purging and Groundwater Sample Collection

Well purging and groundwater sampling were performed in wells specified in the scope of work after measuring depth to groundwater and evaluating the presence of LNAPL. Purging and sampling were performed using one of the methods detailed below. The method used was noted in the field records. Purge water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal or on-site treatment (in cases where treatment using an on-site system is authorized).

3.1 Purging a Predetermined Well Volume

Purging a predetermined well volume is performed per ASTM International (ASTM) D4448-01. This purging method has the objective of removing a predetermined volume of stagnant water from the well prior to sampling. The volume of stagnant water

is defined as either the volume of water contained within the well casing, or the volume within the well casing and sand/gravel in the annulus if natural flow through these is deemed insufficient to keep them flushed out.

This purging method involves removal of a minimum of three stagnant water volumes from the well using a decontaminated pump with new disposable plastic discharge or suction tubing, dedicated well tubing, or using a new disposable or decontaminated reusable bailer. If a new disposable bailer was used for assessment of LNAPL, that bailer may be used for purging. The withdrawal rate used is one that minimizes drawdown while satisfying time constraints.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. Parameters are considered stable when two (2) consecutive readings recorded three (3) minutes apart fall within ranges provided below in Table 1. In the event that the parameters have not stabilized and five (5) well casing volumes have been removed, purging activities will cease and be considered complete. Once the well is purged, a groundwater sample(s) is collected from the well using a new disposable bailer. If a new disposable bailer was used for purging, that bailer may be used to collect the sample(s). A sample is not collected if the well is inadvertently purged dry.

Table 1. Criteria for Defining Stabilization of Water-Quality Indicator Parameters

Parameter	Stabilization Criterion
Temperature	± 0.2ºC (± 0.36ºF)
pH	± 0.1 standard units
Conductivity	± 3%
Dissolved oxygen	± 10%
Oxidation reduction potential	± 10 mV
Turbidity[1]	± 10% or 1.0 NTU (whichever is greater)

3.2 Low-Flow Purging and Sampling

“Low-Flow”, “Minimal Drawdown”, or "Low-Stress” purging is performed per ASTM D6771-02. It is a method of groundwater removal from within a well’s screened interval that is intended to minimize drawdown and mixing of the water column in the well casing. This is accomplished by pumping the well using a decontaminated pump with new disposable plastic discharge or suction tubing or dedicated well tubing at a low flow rate while evaluating the groundwater elevation during pumping.

[1] As stated in ASTM D6771-02, turbidity is not a chemical parameter and not indicative of when formation-quality water is being purged; however, turbidity may be helpful in evaluating stress on the formation during purging. Turbidity measurements are taken at the same time that stabilization parameter measurements are made, or, at a minimum, once when purging is initiated and again just prior to sample collection, after stabilization parameters have stabilized. To avoid artifacts in sample analysis, turbidity should be as low as possible when samples are collected. If turbidity values are persistently high, the withdrawal rate is lowered until turbidity decreases. If high turbidity persists even after lowering the withdrawal rate, the purging is stopped for a period of time until turbidity settles, and the purging process is then restarted. If this fails to solve the problem, the purging/sampling process for the well is ceased, and well maintenance or redevelopment is considered.

The low flow pumping rate is well specific and is generally established at a volume that is less than or equal to the natural recovery rate of the well. A pump with adjustable flow rate control is positioned with the intake at or near the mid-point of the submerged well screen. The pumping rate used during low-flow purging is low enough to minimize mobilization of particulate matter and drawdown (stress) of the water column. Low-flow purging rates will vary based on the individual well characteristics; however, the purge rate should not exceed 1.0 Liter per minute (L/min) or 0.25 gallon per minute (gal/min). Low-flow purging should begin at a rate of approximately 0.1 L/min (0.03 gal/min)[2], or the lowest rate possible, and be adjusted based on an evaluation of drawdown. Water level measurements should be recorded at approximate one (1) to two (2) minute intervals until the low-flow rate has been established, and drawdown is minimized. As a general rule, drawdown should not exceed 25% of the distance between the top of the water column and the pump in-take.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. The frequency between measurements will be at an interval of one (1) to three (3) minutes; however, if a flow cell is used, the frequency will be determined based on the time required to evacuate one cell volume. Stabilization is defined as three (3) consecutive readings recorded several minutes apart falling within ranges provided in Table 1. Samples will be collected by filling appropriate containers from the pump discharge tubing at a rate not to exceed the established pumping rate.

3.3 Minimal Purge, Discrete Depth, and Passive Sampling

Per ASTM D4448-01, sampling techniques that do not rely on purging, or require only minimal purging, may be used if a particular zone within a screened interval is to be sampled or if a well is not capable of yielding sufficient groundwater for purging. To properly use these sampling techniques, a water sample is collected within the screened interval with little or no mixing of the water column within the casing. These techniques include minimal purge sampling which uses a dedicated sampling pump capable of pumping rates of less than 0.1 L/min (0.03 gal/min)[2], discrete depth sampling using a bailer that allows groundwater entry at a controlled depth (e.g. differential pressure bailer), or passive (diffusion) sampling. These techniques are based on certain studies referenced in ASTM D4448-01 that indicate that under certain conditions, natural groundwater flow is laminar and horizontal with little or no mixing within the well screen.

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[2] According to ASTM D4448-01, studies have indicated that at flow rates of 0.1 L/min, low-density polyethylene (LDPE) and plasticized polypropylene tubing materials are prone to sorption. Therefore, TFE-fluorocarbon or other appropriate tubing material is used, particularly when tubing lengths of 50 feet or longer are used.

4.0 Decontamination

Reusable groundwater sampling equipment were cleaned using a solution of Alconox or other acceptable detergent, rinsed with tap water, and finally rinsed with distilled water prior to use in each well. Decontamination water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal.

5.0 Sample Containers, Labeling, and Storage

Samples were collected in laboratory prepared containers with appropriate preservative (if preservative was required). Samples were properly labeled (site name, sample I.D., sampler initials, date, and time of collection) and stored chilled (refrigerator or ice chest with ice) until delivery to a certified laboratory, under chain of custody procedures.

6.0 Chain of Custody Record and Procedure

The field sampler was personally responsible for care and custody of the samples collected until they were properly transferred to another party. To document custody and transfer of samples, a Chain of Custody Record was prepared. The Chain of Custody Record provided identification of the samples corresponding to sample labels and specified analyses to be performed by the laboratory. The original Chain of Custody Record accompanied the shipment, and a copy of the record was stored in the project file. When the samples were transferred, the individuals relinquishing and receiving them signed, dated, and noted the time of transfer on the record.

7.0 Field Records

Daily Report and data forms were completed by staff personnel to provide daily record of significant events, observations, and measurements. Field records were signed, dated, and stored in the project file.

APPENDIX B

FIELD DATA SHEETS

ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

DAILY REPORT

Page 1 of ___

Project: RP 2165 Project No.: 06-98-621

Field Representative(s): SB & JP Day: Friday Date: 8/26/11

Time Onsite: From: 0750 To: 1250; From: _____ To: _____; From: _____ To: _____

X Signed HASP X Safety Glasses X Hard Hat X Steel Toe Boots X Safety Vest

X UST Emergency System Shut-off Switches Located X Proper Gloves

X Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Cloudy

Equipment In Use: _____

Visitors: _____

TIME:	WORK DESCRIPTION:
0750	On-site fill out paperwork and conduct Safety meeting
0900	Set up on ~~MW-6~~ A-6 Sample @ 0930
0945	Set up on A-5 Sample @ 1005
1015	Fuel Truck on-site
	USA mark on Street ~~and~~ are done
1038	Statewide off site
1040	fuel Truck off site
1042	Set up on A-1 Sample @ 1100
1102	Set up on AOR-1 Sample @ 1120
1125	Set up on AOR-2 Sample @ 1145
1151	Set up on A-2 Sample @ 1210
1217	Set up on AR-2 Sample @ 1240
1250	Off site

Signature: _____

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

FIELD DATA REPORT

DATE: 8/26/11
PERSONNEL: SB & JP
WEATHER: Cloudy

PROJECT NO.: 06-83-621
COMMENTS: BP 21604

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
A-1	1044	TOC	10.50									
A-3	1155	"	11.29									
A-5	0952	"	9.81									
A-6	0918	"	9.90									
AR-2	1222	"	11.39									
ADR-1	1104	"	10.42									Clean
ADR-2	1127	"	11.27									

G:\ADMINISTRATION\BAI FORMS\WATER LVL MEAS FORM

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: A-1
Project Name/Location: BP/ARCO 2169 Project #: 06-88-621
Sampler's Name: SB + JP Date: 8/26/11
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC
Casing Diameter: 3 inch
Total Well Depth: 23.70 feet
Depth to Water: - 10.50 feet
Water Column Thickness: = 13.20 feet
Unit Casing Volume*: x 0.37 gallon / foot
Casing Water Volume: = 4.88 gallons
Casing Volume: x 3 each
Estimated Purge Volume: = 14.65 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	0.63	-17	—	720.7	21.4	7.3	
2	1050	X	X	X	805.8	20.9	7.2	
4	1054	X	X	X	847.4	20.7	7.1	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4.0 gallons
Depth to Water at Sample Collection: feet
Sample Collection Time: 1100
Purged Dry? (Y / (N))

Comments:

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

Groundwater Sampling Data Sheet

Well I.D.: A-2
Project Name/Location: BP/ARCO 2165 Project #: 06-88-621
Sampler's Name: SB & JP Date: 8/26/11
Purging Equipment: Bailer
Sampling Equipment: Bailer
Casing Type: PVC

Casing Diameter:		3	inch
Total Well Depth:		24.65	feet
Depth to Water:	-	11.29	feet
Water Column Thickness:	=	13.36	feet
Unit Casing Volume*:	x	0.37	gallon / foot
Casing Water Volume:	=	4.9	gallons
Casing Volume:	x	3	each
Estimated Purge Volume:	=	14.8	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	1157	1.01	-70	—	357.7	22.6	8.2	
2	1201	X	X	X	381.3	20.6	7.6	
4	1203	X	X	X	382.9	20.3	7.6	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 4.0 gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 1210
Purged Dry? (Y / (N))

Comments:

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: A-5
Project Name/Location: BP/ARCO 7169 Project #: 06-88-621
Sampler's Name: SD + JR Date: 8/26/11
Purging Equipment: Bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:	2	inch	
Total Well Depth:	24.18	feet	
Depth to Water:	- 9.81	feet	
Water Column Thickness:	= 14.37	feet	
Unit Casing Volume*:	x 0.16	gallon / foot	
Casing Water Volume:	= 2.29	gallons	
Casing Volume:	x 3	each	
Estimated Purge Volume:	= 6.89	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	0958	0.57	3	—	896.5	19.8	7.2	
1	0959	X	X	X	911.9	19.9	7.0	
2	1001	X	X	X	909.3	19.7	6.9	
3	1003	X	X	X	933.7	19.4	7.0	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 3.0 gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 1005 Purged Dry? (Y / (N))

Comments:

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: A-6
Project Name/Location: BP/ARCO 2169 Project #: 06-88-621
Sampler's Name: SB Date: 8/26/11
Purging Equipment: Bailer
Sampling Equipment: Bailer
Casing Type: PVC
Casing Diameter: 2 inch
Total Well Depth: 26.65 feet
Depth to Water: - 9.90 feet
Water Column Thickness: = 16.75 feet
Unit Casing Volume*: x 0.16 gallon / foot
Casing Water Volume: = 2.6 gallons
Casing Volume: x 3 each
Estimated Purge Volume: = 7.8 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	0922	1.22	51	—	714.6	21.5	8.0	
1	0923	X	X	X	713.3	21.5	7.4	
2	0924	X	X	X	725.4	21.2	7.3	
3	0927	X	X	X	730.6	21.1	7.3	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 3.0 gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 0930 Purged Dry? (Y / (N))

Comments:

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: ADR - 1
Project Name/Location: BP/ARCO 2169 Project #: 06-88-621
Sampler's Name: SB & JR Date: 8/26/11
Purging Equipment: Bailer
Sampling Equipment: Bailer
Casing Type: PVC

Casing Diameter:	4	inch	
Total Well Depth:	20.56	feet	
Depth to Water:	- 10.42	feet	
Water Column Thickness:	= 10.14	feet	
Unit Casing Volume*:	x 0.65	gallon / foot	
Casing Water Volume:	= 6.69	gallons	
Casing Volume:	x 3	each	
Estimated Purge Volume:	= 20.0	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~~ C)	pH	Observations
0	1107	0.46	-45	-	1017	22.5	7.0	
3	1110	X	X	X	1025	21.8	7.0	
6	1114	X	X	X	977.8	21.4	7.0	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 6.0 gallons
Depth to Water at Sample Collection: Feet
Sample Collection Time: 1120 Purged Dry? (Y / (N))

Comments:

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: AOR-7
Project Name/Location: BP/ARCO 2165 Project #: 06-88-621
Sampler's Name: SR & DP Date: 8/26/11
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:	4	inch	
Total Well Depth:	25.86	feet	
Depth to Water:	- 11.27	feet	
Water Column Thickness:	= 14.59	feet	
Unit Casing Volume*:	x 0.65	gallon / foot	
Casing Water Volume:	= 9.48	gallons	
Casing Volume:	x 3	each	
Estimated Purge Volume:	= 28.45	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	1130	1.18	-72	—	835.5	21.6	7.5	
2	1132	X	X	X	836.7	21.0	7.3	
4	1137	X	X	X	836.2	21.2	7.5	
6	1140	X	X	X	869.8	20.6	7.3	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 6.0 gallons
Depth to Water at Sample Collection: — feet
Sample Collection Time: 1145
Purged Dry? (Y (N))

Comments: Sheen

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ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

Groundwater Sampling Data Sheet

Well I.D.: AR-2
Project Name/Location: BP/ARCO 2169 Project #: 06-88-621
Sampler's Name: SB & JD Date: 8/26/11
Purging Equipment: bailer
Sampling Equipment: bailer
Casing Type: PVC

Casing Diameter:		4	inch
Total Well Depth:		28.65	feet
Depth to Water:	-	11.39	feet
Water Column Thickness:	=	17.26	feet
Unit Casing Volume*:	x	0.65	gallon / foot
Casing Water Volume:	=	11.22	gallons
Casing Volume:	x	3	each
Estimated Purge Volume:	=	33.65	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	1224	2.03	6	—	387.0	22.1	8.5	
2	1229	X	X	X	390.8	21.5	8.4	
4	1231	X	X	X	416.3	20.4	8.4	
6	1234	X	X	X	450.1	20.4	8.4	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 6.0 gallons
Depth to Water at Sample Collection: feet
Sample Collection Time: 1240 Purged Dry? (Y / N)

Comments:

APPENDIX C

LABORATORY REPORT
AND CHAIN-OF-CUSTODY DOCUMENTATION

Calscience
Environmental & Marine Chemistry Laboratories

CALSCIENCE

WORK ORDER NUMBER: 11-08-1982

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Broadbent & Associates, Inc.

Client Project Name: ARCO 2169

Attention: Tom Venus
1324 Mangrove Ave, Ste 212
Chico, CA 95926-2642

Approved for release on 09/12/2011 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

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 analyses, 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. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.	Date Received: 08/30/11
1324 Mangrove Ave, Ste 212	Work Order No: 11-08-1982
Chico, CA 95926-2642	Preparation: EPA 5030C
	Method: EPA 8015B (M)

Project: ARCO 2169

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-1	**11-08-1982-1-E**	**08/26/11 11:00**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 05:45**	**110902B03**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	5500	250	5		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	88	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-2	**11-08-1982-2-E**	**08/26/11 12:10**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 02:30**	**110902B03**

Comment(s): -LW Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	100	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	80	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-5	**11-08-1982-3-E**	**08/26/11 10:05**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 03:02**	**110902B03**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	1900	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	119	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-6	**11-08-1982-4-E**	**08/26/11 09:30**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 03:35**	**110902B03**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	70	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: 08/30/11
1324 Mangrove Ave, Ste 212	Work Order No: 11-08-1982
Chico, CA 95926-2642	Preparation: EPA 5030C
	Method: EPA 8015B (M)

Project: ARCO 2169

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AR-2	**11-08-1982-5-E**	**08/26/11 12:40**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 04:07**	**110902B03**

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

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	78	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ADR-1	**11-08-1982-6-E**	**08/26/11 11:20**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 00:53**	**110902B03**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	840	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	91	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ADR-2	**11-08-1982-7-C**	**08/26/11 11:45**	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11 05:12**	**110902B03**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	1900	50	1		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	100	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-1,144**	**N/A**	**Aqueous**	**GC 22**	**09/02/11**	**09/02/11 23:16**	**110902B03**

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	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	08/30/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-08-1982
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L

Project: ARCO 2169

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-1	**11-08-1982-1-A**	**08/26/11 11:00**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 18:38**	**110831L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	320	12	25		Methyl-t-Butyl Ether (MTBE)	ND	5.0	10	
1,2-Dibromoethane	ND	5.0	10		Tert-Butyl Alcohol (TBA)	ND	100	10	
1,2-Dichloroethane	ND	5.0	10		Diisopropyl Ether (DIPE)	ND	5.0	10	
Ethylbenzene	230	12	25		Ethyl-t-Butyl Ether (ETBE)	ND	5.0	10	
Toluene	260	5.0	10		Tert-Amyl-Methyl Ether (TAME)	ND	5.0	10	
Xylenes (total)	650	5.0	10		Ethanol	ND	3000	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	98	68-120			Dibromofluoromethane	90	80-127		
1,2-Dichloroethane-d4	92	80-128			Toluene-d8	96	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-2	**11-08-1982-2-A**	**08/26/11 12:10**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 19:06**	**110831L01**

Comment(s): -BH Reporting limits raised due to high level of non-target analytes.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.0	4		Methyl-t-Butyl Ether (MTBE)	ND	2.0	4	
1,2-Dibromoethane	ND	2.0	4		Tert-Butyl Alcohol (TBA)	ND	40	4	
1,2-Dichloroethane	ND	2.0	4		Diisopropyl Ether (DIPE)	ND	2.0	4	
Ethylbenzene	ND	2.0	4		Ethyl-t-Butyl Ether (ETBE)	ND	2.0	4	
Toluene	ND	2.0	4		Tert-Amyl-Methyl Ether (TAME)	ND	2.0	4	
Xylenes (total)	ND	2.0	4		Ethanol	ND	1200	4	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	90	68-120			Dibromofluoromethane	90	80-127		
1,2-Dichloroethane-d4	85	80-128			Toluene-d8	100	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-5	**11-08-1982-3-A**	**08/26/11 10:05**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 19:34**	**110831L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	36	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	190	5.0	10		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	1.4	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	52	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	99	68-120			Dibromofluoromethane	94	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	99	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	08/30/11
1324 Mangrove Ave, Ste 212		Work Order No:	11-08-1982
Chico, CA 95926-2642		Preparation:	EPA 5030C
		Method:	EPA 8260B
		Units:	ug/L
Project: ARCO 2169			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
A-6	**11-08-1982-4-A**	**08/26/11 09:30**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 12:11**	**110831L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	2.2	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	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	68-120			Dibromofluoromethane	105	80-127		
1,2-Dichloroethane-d4	105	80-128			Toluene-d8	102	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
AR-2	**11-08-1982-5-B**	**08/26/11 12:40**	**Aqueous**	**GC/MS L**	**09/01/11**	**09/01/11 17:54**	**110901L01**

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	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	93	68-120			Dibromofluoromethane	96	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	98	80-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ADR-1	**11-08-1982-6-A**	**08/26/11 11:20**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 20:29**	**110831L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	54	2.0	4		Methyl-t-Butyl Ether (MTBE)	1.7	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	13	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	2.7	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	48	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	68-120			Dibromofluoromethane	97	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	100	80-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

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

Date Received: 08/30/11
Work Order No: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ARCO 2169

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ADR-2	**11-08-1982-7-A**	**08/26/11 11:45**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 20:56**	**110831L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	6.7	0.50	1		Methyl-t-Butyl Ether (MTBE)	40	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	11	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	7.1	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	14	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	98	68-120			Dibromofluoromethane	91	80-127		
1,2-Dichloroethane-d4	92	80-128			Toluene-d8	102	80-120		

Method Blank	**099-12-703-1,842**	**N/A**	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11 11:44**	**110831L01**

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	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	91	68-120			Dibromofluoromethane	106	80-127		
1,2-Dichloroethane-d4	113	80-128			Toluene-d8	94	80-120		

Method Blank	**099-12-703-1,844**	**N/A**	**Aqueous**	**GC/MS L**	**09/01/11**	**09/01/11 11:54**	**110901L01**

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	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	90	68-120			Dibromofluoromethane	96	80-127		
1,2-Dichloroethane-d4	100	80-128			Toluene-d8	96	80-120		

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: 08/30/11
Work Order No: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
ADR-1	**Aqueous**	**GC 22**	**09/02/11**	**09/03/11**	**110902S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	86	88	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: 08/30/11
Work Order No: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8260B

Project ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
A-6	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11**	**110831S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	107	110	76-124	2	0-20	
Carbon Tetrachloride	116	119	74-134	3	0-20	
Chlorobenzene	104	105	80-120	1	0-20	
1,2-Dibromoethane	108	109	80-120	1	0-20	
1,2-Dichlorobenzene	102	101	80-120	1	0-20	
1,2-Dichloroethane	110	110	80-120	1	0-20	
Ethylbenzene	108	110	78-126	2	0-20	
Toluene	104	106	80-120	1	0-20	
Trichloroethene	107	111	77-120	4	0-20	
Methyl-t-Butyl Ether (MTBE)	121	123	67-121	1	0-49	LM,AY
Tert-Butyl Alcohol (TBA)	114	106	36-162	7	0-30	
Diisopropyl Ether (DIPE)	119	120	60-138	0	0-45	
Ethyl-t-Butyl Ether (ETBE)	112	113	69-123	1	0-30	
Tert-Amyl-Methyl Ether (TAME)	112	113	65-120	1	0-20	
Ethanol	100	130	30-180	26	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: 08/30/11
Work Order No: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8260B

Project ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-08-2061-2	**Aqueous**	**GC/MS L**	**09/01/11**	**09/01/11**	**110901S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	108	110	76-124	2	0-20	
Carbon Tetrachloride	110	114	74-134	3	0-20	
Chlorobenzene	100	103	80-120	3	0-20	
1,2-Dibromoethane	101	100	80-120	1	0-20	
1,2-Dichlorobenzene	96	103	80-120	7	0-20	
1,2-Dichloroethane	102	106	80-120	4	0-20	
Ethylbenzene	102	108	78-126	4	0-20	
Toluene	106	108	80-120	2	0-20	
Trichloroethene	104	108	77-120	4	0-20	
Methyl-t-Butyl Ether (MTBE)	101	107	67-121	6	0-49	
Tert-Butyl Alcohol (TBA)	102	112	36-162	9	0-30	
Diisopropyl Ether (DIPE)	95	104	60-138	9	0-45	
Ethyl-t-Butyl Ether (ETBE)	96	104	69-123	8	0-30	
Tert-Amyl-Methyl Ether (TAME)	108	110	65-120	2	0-20	
Ethanol	96	116	30-180	19	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Broadbent & Associates, Inc.	Date Received:	N/A
1324 Mangrove Ave, Ste 212	Work Order No:	11-08-1982
Chico, CA 95926-2642	Preparation:	EPA 5030C
	Method:	EPA 8015B (M)

Project: ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-1,144	**Aqueous**	**GC 22**	**09/02/11**	**09/02/11**	**110902B03**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	89	91	78-120	2	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: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8260B

Project: ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,842	**Aqueous**	**GC/MS L**	**08/31/11**	**08/31/11**	**110831L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	104	80-120	73-127	1	0-20	
Carbon Tetrachloride	112	114	74-134	64-144	1	0-20	
Chlorobenzene	103	103	80-120	73-127	1	0-20	
1,2-Dibromoethane	97	104	79-121	72-128	7	0-20	
1,2-Dichlorobenzene	99	99	80-120	73-127	0	0-20	
1,2-Dichloroethane	109	109	80-120	73-127	0	0-20	
Ethylbenzene	107	105	80-120	73-127	2	0-20	
Toluene	103	102	80-120	73-127	1	0-20	
Trichloroethene	107	101	79-127	71-135	6	0-20	
Methyl-t-Butyl Ether (MTBE)	106	113	69-123	60-132	7	0-20	
Tert-Butyl Alcohol (TBA)	96	93	63-123	53-133	3	0-20	
Diisopropyl Ether (DIPE)	107	111	59-137	46-150	3	0-37	
Ethyl-t-Butyl Ether (ETBE)	102	109	69-123	60-132	7	0-20	
Tert-Amyl-Methyl Ether (TAME)	105	109	70-120	62-128	4	0-20	
Ethanol	97	92	28-160	6-182	6	0-57	

Total number of LCS compounds : 15
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.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 11-08-1982
Preparation: EPA 5030C
Method: EPA 8260B

Project: ARCO 2169

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,844	**Aqueous**	**GC/MS L**	**09/01/11**	**09/01/11**	**110901L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	98	97	80-120	73-127	1	0-20	
Carbon Tetrachloride	101	103	74-134	64-144	2	0-20	
Chlorobenzene	100	99	80-120	73-127	1	0-20	
1,2-Dibromoethane	91	97	79-121	72-128	6	0-20	
1,2-Dichlorobenzene	95	95	80-120	73-127	0	0-20	
1,2-Dichloroethane	100	98	80-120	73-127	2	0-20	
Ethylbenzene	103	102	80-120	73-127	2	0-20	
Toluene	104	101	80-120	73-127	3	0-20	
Trichloroethene	99	96	79-127	71-135	4	0-20	
Methyl-t-Butyl Ether (MTBE)	92	100	69-123	60-132	8	0-20	
Tert-Butyl Alcohol (TBA)	99	98	63-123	53-133	1	0-20	
Diisopropyl Ether (DIPE)	91	96	59-137	46-150	5	0-37	
Ethyl-t-Butyl Ether (ETBE)	89	96	69-123	60-132	8	0-20	
Tert-Amyl-Methyl Ether (TAME)	96	97	70-120	62-128	2	0-20	
Ethanol	126	103	28-160	6-182	20	0-57	

Total number of LCS compounds : 15
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

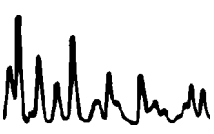
Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 11-08-1982

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.
ET	Sample was extracted past end of recommended maximum 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.
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/LCSD Recovery Percentage is within Marginal Exceedance (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.

Qualifier	Definition
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.



Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

11-08-1982

BP/ARC Project Name: ARCO 2169 | Req Due Date (mm/dd/yy): STD-TAT | Rush TAT: Yes ___ No X

BP/ARC Facility No: 2169 | Lab Work Order Number:

Lab Name: Cal science	BP/ARC Facility Address: 889 W. Grand Avenue	Consultant/Contractor: Broadbent & Associates, Inc.
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Oakland, CA 94607	Consultant/Contractor Project No: 06-88-621-401-880
Lab PM: Richard Villafania	Lead Regulatory Agency: ACEH	Address: 1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0600100112	Consultant/Contractor PM: Tom Venus
Lab Shipping Accnt: 9255	Enfos Proposal No: 0060C-0001	Phone: 530-566-1400 / 530-566-1401 (fax)
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: tvenus@broadbentinc.com
Other Info:	Stage: Execute (4) Activity: Project Spend (80)	Invoice To: BP/ARC X Contractor ___

BP/ARC EBM: Shannon Couch
EBM Phone: 925-275-3804
EBM Email: shannon.couch@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 (8015)	BTEX (8260)	5 Oxys (8260)	EDB (8260)	1,2-DCA (8260)	Ethanol (8260)					Report Type & QC Level / Comments
1	A-1	8/26/11	1100		X			6				X			X	X	X	X	X	X					
2	A-2	"	1210		X			6				X			X	X	X	X	X	X					
3	A-5	"	1005		X			6				X			X	X	X	X	X	X					
4	A-6	"	0930		X			6				X			X	X	X	X	X	X					
5	AR-2	"	1240		X			6				X			X	X	X	X	X	X					
6	ADR-1	"	1120		X			6				X			X	X	X	X	X	X					
7	ADR-2	"	1145		X			6				X			X	X	X	X	X	X					
8	TB - 2169 - 8/08 26	8/26/11	1245		X			2				X													ON HOLD

Sampler's Name: Sam Bardley	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: BAI		8/29/11	1600			
Shipment Method: GSO Ship Date: 8/29/11					8/30/11	1100
Shipment Tracking No: 1071583623						

Special Instructions:

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

1982

GSO GOLDEN STATE OVERNIGHT

1-800-322-5555

WWW.GSO.COM

SHIPPING AIR BILL

PACKAGE

1 FROM

DATE 8/29/11

COMPANY Broadmoor

ADDRESS 875 Cotting Lane

ADDRESS

CITY Vacaville STE/ROOM G

ZIP CODE 95688

SENDERS NAME Sam Kelley PHONE NUMBER (530) 688-7770

2 TO

COMPANY CAL SCIENCE

NAME Kristina PHONE NUMBER 714-895-5494

ADDRESS 7440 LINCOLN WAY

ADDRESS

CITY GARDEN GROVE STE/ROOM

ZIP CODE 92841

3 YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

SPECIAL INSTRUCTIONS

4 PACKAGE INFORMATION

- ☐ LETTER (MAX 8 OZ)
- ☐ PACKAGE (WT) _____
- ☐ DECLARED VALUE $_____
- ☐ COD AMOUNT $_____ (CASH NOT ACCEPTED)

5 DELIVERY SERVICE

- ☒ PRIORITY OVERNIGHT BY 10:30 AM
- ☐ EARLY PRIORITY BY 8:00 AM
- ☐ SATURDAY DELIVERY

*DELIVERY TIMES MAY BE LATER IN SOME AREAS • CONSULT YOUR SERVICE GUIDE OR CALL GOLDEN STATE OVERNIG

6 RELEASE SIGNATURE _____ SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION 12PT 926 LSD

TIME DRIVER # ROUTE #

9 GSO TRACKING NUMBER 107158363

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-08-1 9 F 2

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Broadbent DATE: 08/30/11

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

Temperature 2.1 °C + 0.5 °C (CF) = 2.6 °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 Initial: JF

CUSTODY SEALS INTACT:

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

☐ 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 / Res. Chlorine / Diss. Sulfide / Diss. Oxygen 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 ☑6 VOAh ☐VOA**na**$_2$ ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na**$_2$ ☐1AGB**s**

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

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na**$_2$ ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:** 110705B **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:** JL

Preservative: **h:** HCL **n:** HNO_3 **na**$_2$:$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** JL

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 11-08-1 9 8 2

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**
- ☐ **Sample container(s) not labeled**
- ☐ **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) 3 of 6 vials received. broken (Frozen)

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

Comments: _____

*Transferred at Client's request.

Initial / Date: WS 08/30/11

APPENDIX D

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!

Submittal Type:	**GEO_WELL**
Submittal Title:	**3Q11 GEO_WELL 2169**
Facility Global ID:	**T0600100112**
Facility Name:	**ARCO #02169**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/19/2011 3:36:37 PM**
Confirmation Number:	**6649930596**

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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:	**3Q11 GW Monitoring**
Facility Global ID:	**T0600100112**
Facility Name:	**ARCO #02169**
File Name:	**11081982.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**9/19/2011 3:26:44 PM**
Confirmation Number:	**7824991881**

VIEW QC REPORT

VIEW DETECTIONS REPORT

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