

Atlantic Richfield Company

Shannon Couch
Operations Project Manager

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3804
Mobile: (510) 798-8314
E-Mail: Shannon.Couch1@bp.com

October 26, 2012

Re: Third Quarter 2012 Monitoring Report
Atlantic Richfield Company Station #2111
1156 Davis Street, San Leandro, California
ACEH Case #RO0000494

RECEIVED

2:40 pm, Nov 01, 2012

Alameda County
Environmental Health

"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:

October 26, 2012

Project No. 06-88-615

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

Attn.: Ms. Shannon Couch

Re: Third Quarter 2012 Monitoring Report, Atlantic Richfield Company Station #2111,
1156 Davis Street, San Leandro, Alameda County, California;
ACEH Case #RO0000494

Dear Ms. Couch:

Attached is the *Third Quarter 2012 Monitoring Report* for Atlantic Richfield Company (a BP affiliated company) Station #2111 located at 1156 Davis Street, San Leandro, California (Site). This report presents a status update and the results of groundwater monitoring conducted at the Site during the Third Quarter 2012.

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

Sincerely,

BROADBENT & ASSOCIATES, INC.



Alexander J. Martinez
Senior Staff Geologist



Kristene Tidwell, P.G., C.H.G.
Senior Geologist



Enclosures

cc: Ms. Dilan Roe, Alameda County Environmental Health (Submitted via ACEH ftp site)
Mr. Karl Busche, City of San Leandro Environmental Services Division, 835 East 14th Street,
San Leandro, California 94577 (Submitted via GeoTracker)
Electronic copy uploaded to GeoTracker

**THIRD QUARTER 2012
MONITORING REPORT
ATLANTIC RICHFIELD COMPANY STATION #2111
SAN LEANDRO, CALIFORNIA**

Broadbent & Associates, Inc. (Broadbent) is pleased to present this *Third Quarter 2012 Monitoring Report* on behalf of Atlantic Richfield Company (ARC, a BP affiliated company) Station #2111(the Site) located at 1156 Davis Street, San Leandro, Alameda County, California. Monitoring activities at the Site were performed in accordance with an agency directive issued by the Alameda County Environmental Health (ACEH). Details of work performed, discussion of results, and recommendations are provided below.

Facility Name / Address:	<u>Station #2111 / 1156 Davis Street, San Leandro, California</u>
Client Project Manager / Title:	<u>Ms. Shannon Couch/ Operations Project Manager</u>
Broadbent Contact:	<u>Ms. Kristene Tidwell, (707) 455-7290</u>
Broadbent Project No.:	<u>06-88-615</u>
Primary Regulatory Agency / ID No.:	<u>ACEH / Case #RO0000494</u>
Current phase of project:	<u>Assessment</u>
List of Acronyms / Abbreviations:	<u>See end of report text for list of acronyms/abbreviations used in report.</u>

WORK PERFORMED THIS QUARTER (Third Quarter 2012):

1. Prepared and submitted *Second Quarter 2012 Status Report* on July 17, 2012.
2. Conducted groundwater monitoring/sampling for Third Quarter on August 30, 2012.
3. Performed Remediation System Removal on July 11, 2012.

WORK SCHEDULED FOR NEXT QUARTER (Fourth Quarter 2012):

1. Submit *Third Quarter 2012 Monitoring Report* (contained herein).
2. No environmental field activities are presently scheduled for Fourth Quarter 2012.
3. Submit addendum to Down Gradient Assessment Work Plan.

QUARTERLY MONITORING PLAN SUMMARY:

Groundwater level gauging:	<u>MW-1 through MW-8</u>	(Semi-Annually, 1Q & 3Q)
Groundwater sample collection:	<u>MW-1 through MW-5, MW-7 and MW-8</u>	(Semi-Annually, 1Q & 3Q)
	<u>MW-6</u>	(Annually, 3Q)

QUARTERLY RESULTS SUMMARY:

LNAPL

LNAPL observed this quarter:	<u>No</u>	(yes\no)
LNAPL recovered this quarter:	<u>None</u>	(gal)
Cumulative LNAPL recovered:	<u>None</u>	(gal)

Groundwater Elevation and Gradient:

Depth to groundwater:	<u>14.22 (MW-6) to 17.92 (MW-1)</u>	(ft below TOC)
Gradient direction:	<u>Northwest</u>	(compass direction)
Gradient magnitude:	<u>0.005</u>	(ft/ft)
Average change in elevation:	<u>-0.41</u>	(ft since last measurement)

Laboratory Analytical Data

Summary:

Analytical results are as follows:

- GRO was detected in two wells with a maximum concentration of 230 µg/L in well MW-7
 - MTBE was detected in six wells with a maximum concentration of 210 µg/L in well MW-7
 - TBA was detected in two wells with a maximum concentration of 14,000 µg/L in well MW-7
-

ACTIVITIES CONDUCTED & RESULTS:

Third Quarter 2012 groundwater monitoring was conducted at the Site on August 30, 2012 by Broadbent personnel in accordance with the monitoring plan summary detailed above. No other irregularities were noted during water level gauging. Depth to water measurements ranged from 14.22 ft at MW-6 to 17.92 ft at MW-1. Resulting groundwater surface elevations ranged from 21.43 ft in well MW-5 to 22.89 ft in well MW-7. Groundwater elevations are summarized in Table 1. Water level elevations yielded a potentiometric groundwater gradient to the west and west-northwest at approximately 0.005 ft/ft. Field methods used during groundwater monitoring are provided in Appendix A. Field data sheets and non-hazardous waste data forms are included in Appendix B. A Site Location Map is provided as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Groundwater samples were collected on August 30, 2012, consistent with the current monitoring schedule. No irregularities were reported during sampling this quarter. Samples were submitted under chain-of-custody protocol to Test America Laboratories, Inc. of Irvine, California, for analysis of GRO, by the EPA Method 8015B; for BTEX, MTBE, ETBE, TAME, DIPE, EDB, 1,2-DCA, TBA, and Ethanol by EPA Method 8260B. No irregularities were encountered during analysis of the samples. The laboratory analytical report, including chain-of-custody documentation, is provided in Appendix C.

Results of the sampling event are included in the laboratory analytical summary presented above. These results indicate that the highest overall concentrations of petroleum hydrocarbons are present in well MW-7. Concentrations of GRO, MTBE and TBA increased while benzene was not detected in well MW-7 relative to the First Quarter 2012. Other petroleum hydrocarbons have indicated a slight increase for MTBE in wells MW-1, MW-3, MW-5, and MW-8, but a slight decrease in well MW-2. The remaining analytes detected this quarter appear to be consistent with previous data. Further discussion of these results is presented below.

DISCUSSION:

Groundwater elevations were between historic minimum and maximum ranges for each well. Groundwater elevations yielded a potentiometric groundwater gradient to the west and west-northwest at approximately 0.005 ft/ft, generally consistent with the historic gradient data presented in Table 3.

Review of historical groundwater results indicate that well MW-7 contains the highest residual concentrations of petroleum hydrocarbons due to its location near the former Underground Storage Tanks (UST). Concentrations in well MW-7 indicate an increase since the First Quarter 2012. Downgradient well MW-2 decreased in concentrations for GRO and MTBE. The remaining wells

downgradient from well MW-7 do not contain GRO and benzene and remain consistent with previous low concentrations of MTBE.

RECOMMENDATIONS:

A work plan for offsite investigation was submitted to and approved by the ACEH in 2009. To date, access has not been obtained from the neighboring property owner to carry out this investigation. Since 2009, site conditions and the site regulatory framework have changed. An addendum to this work plan will be submitted shortly considering these new factors.

LIMITATIONS:

The findings presented in this report are based upon observations of field personnel, the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. 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 Atlantic Richfield Company. It is possible that variations in soil or groundwater conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

ATTACHMENTS:

- Drawing 1: Site Location Map, Station #2111, 1156 Davis Street, San Leandro, California
Drawing 2: Groundwater Elevation Contour and Analytical Summary Map, August 30, 2012
- Table 1: Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
Table 2: Summary of Fuel Additives Analytical Data
Table 3: Historical Groundwater Gradient - Direction and Magnitude
- Appendix A: Field Methods
Appendix B: Field Data Sheets and Non-Hazardous Waste Data Forms
Appendix C: Laboratory Report and Chain of Custody Documentation
Appendix D: GeoTracker Upload Confirmation Receipts

LIST OF COMMONLY USED ACCRONYMS/ABBREVIATIONS:

ACEH:	Alameda County Environmental Health	gal:	gallons
ARC:	Atlantic Richfield Company	GRO:	Gasoline Range Organics (C6-12)
BAI:	Broadbent & Associates, Inc.	LNAPL:	Light Non-Aqueous Phase Liquid
BTEX:	Benzene, Toluene, Ethylbenzene, Total Xylenes	MTBE:	Methyl Tertiary Butyl Ether
1,2-DCA:	1,2-Dichloroethane	TAME:	Tert-Amyl Methyl Ether
DIPE:	Di-Isopropyl Ether	TBA:	Tert-Butyl Alcohol
DO:	Dissolved Oxygen	TOC:	Top of Casing
EDB:	1,2-Dibromomethane	µg/L:	Micrograms Per Liter
ft/ft	feet per foot		

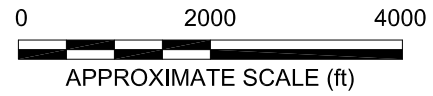
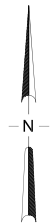
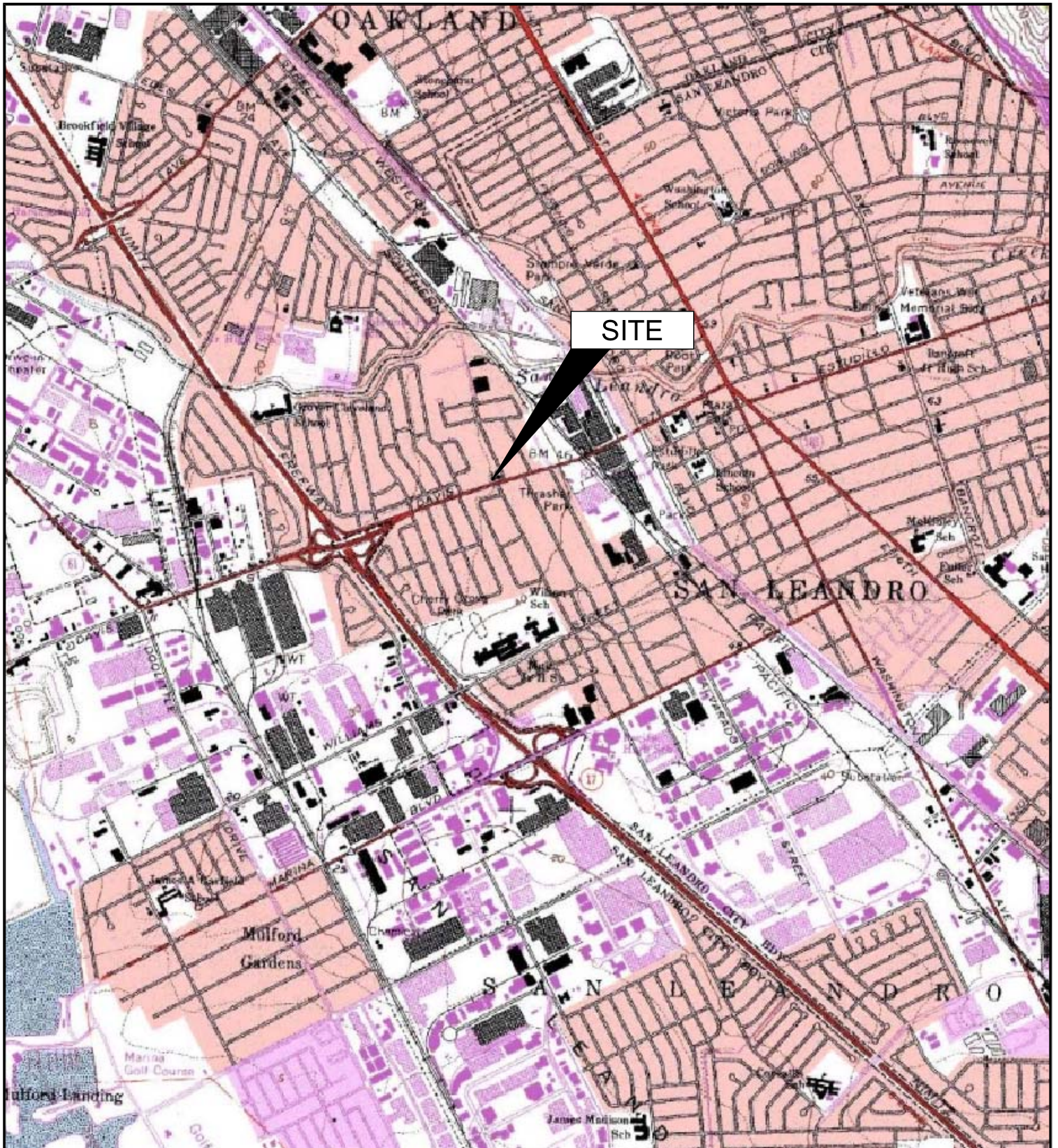


IMAGE SOURCE: USGS



1324 Mangrove Ave., Suite 212
Chico, California 95926

Project No.: 06-88-615 Date: 9/28/2012







Station #2111
1156 Davis Street
San Leandro, California

Site Location Map

Drawing

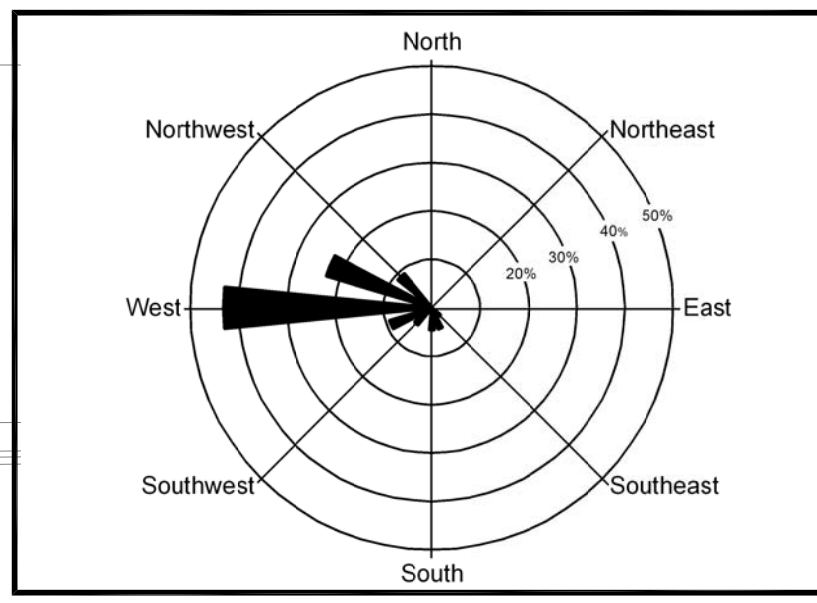
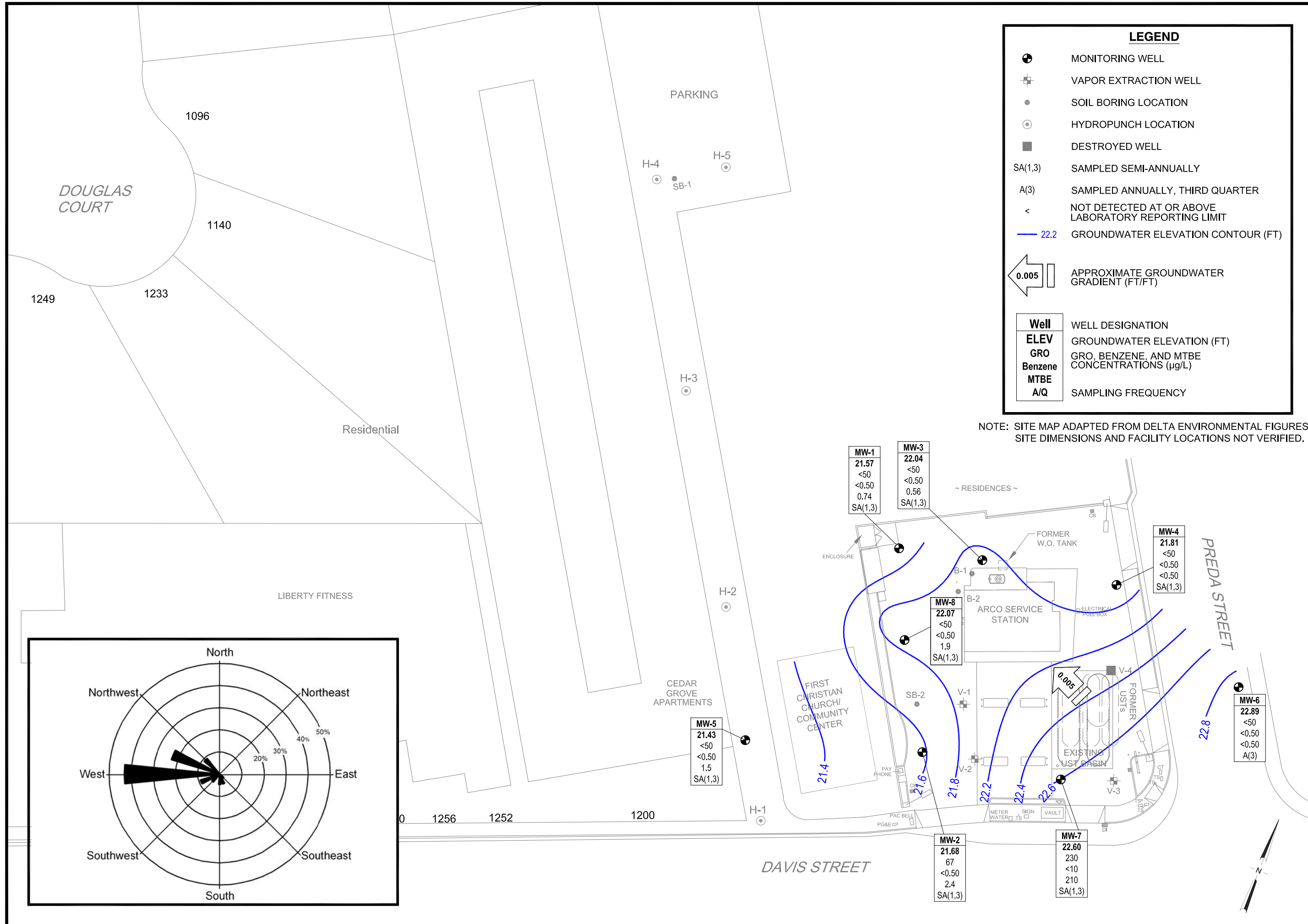
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LEGEND

-  MONITORING WELL
-  VAPOR EXTRACTION WELL
-  SOIL BORING LOCATION
-  HYDROPUNCH LOCATION
-  DESTROYED WELL
- SA(1,3) SAMPLED SEMI-ANNUALLY
- A(3) SAMPLED ANNUALLY, THIRD QUARTER
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- 22.2 GROUNDWATER ELEVATION CONTOUR (FT)
-  APPROXIMATE GROUNDWATER GRADIENT (FT/FT)

Well	WELL DESIGNATION
ELEV	GROUNDWATER ELEVATION (FT)
GRO	GRO, BENZENE, AND MTBE CONCENTRATIONS (µg/L)
Benzene	
MTBE	
A/Q	SAMPLING FREQUENCY

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



MW-1
21.57
<50
<0.50
0.74
SA(1,3)

MW-3
22.04
<50
<0.50
0.56
SA(1,3)

MW-4
21.81
<50
<0.50
<0.50
SA(1,3)

MW-8
22.07
<50
<0.50
1.9
SA(1,3)

MW-6
22.89
<50
<0.50
<0.50
A(3)

MW-5
21.43
<50
<0.50
1.5
SA(1,3)

MW-2
21.68
67
<0.50
2.4
SA(1,3)

MW-7
22.60
230
<10
210
SA(1,3)

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-1															
6/26/2000	--	39.60	12.50	26.00	16.46	23.14	--	--	--	--	--	--	--	--	
7/20/2000	--		12.50	26.00	16.89	22.71	360	110	<0.5	<0.5	2.7	2,100	--	--	
9/19/2000	--		12.50	26.00	17.62	21.98	290	76	<0.5	<0.5	2.3	1,500	--	--	
12/21/2000	--		12.50	26.00	17.39	22.21	257	64	2.89	1.31	4.57	1,080/1,060	--	--	
3/13/2001	--		12.50	26.00	15.70	23.90	<500	52.5	<5.0	<5.0	<5.0	1,430/1,370	--	--	
9/18/2001	--		12.50	26.00	18.24	21.36	<500	64	7.3	<5.0	52	810/1,100	--	--	
12/28/2001	--		12.50	26.00	15.95	23.65	<500	<5.0	<5.0	5	22	1,200/1,100	--	--	
3/14/2002	--		12.50	26.00	16.01	23.59	<50	<0.5	<0.5	<0.5	<0.5	34/40	--	--	
4/23/2002	--		12.50	26.00	15.43	24.17	<50	<0.5	<0.5	<0.5	<0.5	30	--	--	
7/17/2002	NP		12.50	26.00	17.50	22.10	<50	1.2	<0.50	<0.50	<0.50	29	6.9	6.9	
10/9/2002	--		12.50	26.00	18.27	21.33	240	4.9	<1.0	4.1	7.0	290	6.5	6.5	c
1/13/2003	--		12.50	26.00	15.37	24.23	760	34	11	17	56	300	6.8	6.8	c
04/07/03	--		12.50	26.00	16.61	22.99	<50	<0.50	<0.50	<0.50	<0.50	22	6.8	6.8	
7/9/2003	--		12.50	26.00	17.27	22.33	<2,500	<25	<25	<25	<25	690	6.7	6.7	
02/05/2004	NP	39.49	12.50	26.00	16.28	23.21	2,800	31	<25	<25	<25	1,100	0.9	6.5	m
04/05/2004	NP		12.50	26.00	16.25	23.24	5,800	46	<25	<25	<25	1,700	1.0	--	
07/13/2004	NP		12.50	26.00	17.57	21.92	<1,000	<10	<10	<10	<10	730	0.5	6.6	
11/04/2004	NP		12.50	26.00	17.78	21.71	560	<5.0	<5.0	<5.0	<5.0	380	0.8	6.5	
01/20/2005	NP		12.50	26.00	15.50	23.99	670	<5.0	<5.0	<5.0	<5.0	570	0.6	6.0	
04/11/2005	NP		12.50	26.00	14.82	24.67	<2,500	<25	<25	<25	25	1,100	0.9	6.9	
08/01/2005	NP		12.50	26.00	16.77	22.72	2,200	33	<10	110	<10	1,400	1.27	7.3	
10/21/2005	NP		12.50	26.00	17.71	21.78	<2,500	<25	<25	<25	<25	970	1.17	6.6	
01/18/2006	NP		12.50	26.00	14.70	24.79	300	<2.5	<2.5	<2.5	<2.5	330	1.07	6.6	n
04/14/2006	NP		12.50	26.00	13.41	26.08	330	<2.5	<2.5	<2.5	<2.5	310	0.79	6.6	
7/19/2006	NP		12.50	26.00	15.86	23.63	<250	<2.5	<2.5	<2.5	<2.5	180	1.2	6.7	q
10/24/2006	P		12.50	26.00	17.15	22.34	710	4.2	<2.5	19	13	360	--	6.68	
1/15/2007	P		12.50	26.00	16.81	22.68	470	2.8	<2.5	14	8.4	220	1.14	7.12	
4/18/2007	NP		12.50	26.00	16.69	22.80	100	<2.5	<2.5	<2.5	<2.5	150	1.20	6.85	
7/17/2007	NP		12.50	26.00	20.85	18.64	<50	<1.0	<1.0	<1.0	<1.0	94	1.91	6.98	
10/11/2007	NP		12.50	26.00	18.10	21.39	66	<0.50	<0.50	<0.50	<0.50	62	1.60	7.00	

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-1 Cont.															
1/8/2008	NP	39.49	12.50	26.00	15.97	23.52	140	<0.50	<0.50	<0.50	<0.50	90	1.19	5.60	n
4/8/2008	NP		12.50	26.00	16.53	22.96	88	<0.50	<0.50	<0.50	<0.50	110	1.73	6.89	
8/20/2008	NP		12.50	26.00	18.32	21.17	<50	<0.50	<0.50	<0.50	<0.50	3.3	2.37	6.95	
11/17/2008	NP		12.50	26.00	18.38	21.11	<50	<0.50	<0.50	<0.50	<0.50	21	0.94	6.96	
2/3/2009	NP		12.50	26.00	18.08	21.41	<50	<0.50	<0.50	<0.50	<0.50	16	1.66	6.95	
5/12/2009	NP		12.50	26.00	17.05	22.44	<50	<0.50	<0.50	<0.50	<0.50	9.3	0.88	6.88	
8/13/2009	NP		12.50	26.00	18.01	21.48	<50	<0.50	<0.50	<0.50	<0.50	5.5	0.14	7.02	u
2/18/2010	NP		12.50	26.00	16.14	23.35	<50	<0.50	<0.50	<0.50	<0.50	1.4	2.22	6.69	
7/23/2010	NP		12.50	26.00	17.11	22.38	<50	<0.50	<0.50	<0.50	<0.50	1.3	0.77	6.7	
2/10/2011	NP		12.50	26.00	16.42	23.07	<50	<0.50	<0.50	<0.50	<0.50	1.1	1.19	7.2	
8/30/2011	NP		12.50	26.00	17.13	22.36	<50	<0.50	<0.50	<0.50	<0.50	2.1	0.98	6.9	
2/17/2012	P		12.50	26.00	17.41	22.08	<50	<0.50	<0.50	<0.50	<0.50	0.85	1.39	7.05	
8/30/2012	P		12.50	26.00	17.92	21.57	<50	<0.50	<0.50	<0.50	<1.0	0.74	1.71	7.04	
MW-2															
6/26/2000	--	37.99	12.00	26.00	14.60	23.39	--	--	--	--	--	--	--	--	a
7/20/2000	--		12.00	26.00	15.14	22.85	95,000	2,300	18,000	2,500	19,000	13,000	--	--	
9/19/2000	--		12.00	26.00	15.95	22.04	63,000	1,200	6,300	2,000	14,000	19,000	--	--	
12/21/2000	--		12.00	26.00	15.60	22.39	5,010	360	189	213	626	54,300/89,200	--	--	b
12/21/2000	--		12.00	26.00	15.60	22.39	45,900	--	2,130	1,160	9,460	22,400/24,700	--	--	
3/13/2001	--		12.00	26.00	13.77	24.22	<20,000	525	466	408	1,460	91,700/76,000	--	--	b
3/13/2001	--		12.00	26.00	13.77	24.22	3,650	98.1	<5.0	<5.0	6.42	3,590/3,260	--	--	
9/18/2001	--		12.00	26.00	16.86	21.13	--	--	--	--	--	--	--	--	a
12/28/2001	--		12.00	26.00	14.28	23.71	31,000	1,500	3,800	1,300	4,800	9,300/8,800	--	--	
3/14/2002	--		12.00	26.00	14.15	23.84	1,800	25	43	43	270	990/960	--	--	
4/23/2002	--		12.00	26.00	13.60	24.39	9,000	220	110	470	2,500	8,500	--	--	
7/17/2002	NP		12.00	26.00	15.75	22.24	74,000	280	290	820	10,000	19,000/0.4	6.8	6.8	a, c
10/9/02	NP		12.00	26.00	16.69	21.30	--	--	--	--	--	--	--	--	g
1/13/03	--		12.00	26.00	13.59	24.40	--	--	--	--	--	--	--	--	g, h
04/07/03	--		12.00	26.00	14.70	23.29	--	--	--	--	--	--	--	--	g, h
07/09/03	--		12.00	26.00	15.48	22.51	--	--	--	--	--	--	--	--	g, h

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-2 Cont.															
02/05/2004	NP	37.86	12.00	26.00	14.43	23.43	--	--	--	--	--	--	--	--	g,m
04/05/2004	NP		12.00	26.00	14.35	23.51	2,300	33	<5.0	<5.0	200	750	0.6	--	
07/13/2004	NP		12.00	26.00	15.79	22.07	59,000	380	<50	2,100	7,900	5,800	0.3	6.4	
08/31/2004	--		12.00	26.00	15.89	21.97	--	--	--	--	--	--	--	--	
11/04/2004	--		12.00	26.00	15.92	21.94	--	--	--	--	--	--	--	--	g, h
01/20/2005	NP		12.00	26.00	13.71	24.15	30,000	450	<50	1,300	3,300	7,000	0.7	6.2	o
04/11/2005	NP		12.00	26.00	12.70	25.16	11,000	170	<50	580	630	2,700	0.9	6.8	
08/01/2005	NP		12.00	26.00	14.89	22.97	24,000	170	<50	1,100	2,700	2,700	0.64	6.9	
10/21/2005	--		12.00	26.00	16.05	21.81	--	--	--	--	--	--	--	--	a
01/18/2006	NP		12.00	26.00	12.81	25.05	21,000	71	<50	470	1,400	1,600	1.18	6.6	a
04/14/2006	NP		12.00	26.00	12.24	25.62	7,800	78	<50	94	130	2,100	0.81	6.7	a
7/19/2006	NP		12.00	26.00	14.00	23.86	4,900	31	<10	98	75	930	1.1	6.5	q
10/24/2006	--		12.00	26.00	15.38	22.48	--	--	--	--	--	--	--	6.45	g
1/15/2007	P		12.00	26.00	15.00	22.86	5,000	51	<10	49	34	1,400	1.85	7.13	
4/18/2007	NP		12.00	26.00	14.82	23.04	3,000	39	<10	32	22	1,100	1.95	7.10	
7/17/2007	NP		12.00	26.00	18.00	19.86	1,100	53	<10	28	<10	1,300	4.84	7.09	n
10/11/2007	NP		12.00	26.00	16.38	21.48	1,800	17	<10	<10	11	1,000	1.52	7.05	
1/8/2008	NP		12.00	26.00	14.10	23.76	1,900	65	<10	37	28	1,300	1.06	4.22	n
4/8/2008	NP		12.00	26.00	14.70	23.16	200	34	<0.50	<0.50	<0.50	690	3.24	6.95	
8/20/2008	NP		12.00	26.00	16.66	21.20	990	21	<10	<10	<10	190	1.54	6.91	
11/17/2008	NP		12.00	26.00	19.28	18.58	290	9.3	<5.0	<5.0	<5.0	89	0.71	6.75	
2/3/2009	NP		12.00	26.00	16.45	21.41	86	3.5	<2.5	<2.5	<2.5	31	2.71	6.96	
5/12/2009	NP		12.00	26.00	15.30	22.56	390	1.3	<0.50	<0.50	0.82	25	0.82	6.96	
8/13/2009	NP		12.00	26.00	16.88	20.98	330	<10	<10	<10	<10	39	0.81	7.12	u
2/18/2010	NP		12.00	26.00	14.20	23.66	950	<5.0	<5.0	<5.0	<5.0	<5.0	1.18	6.94	
7/23/2010	NP		12.00	26.00	15.37	22.49	330	<2.0	<2.0	<2.0	<2.0	6.5	1.70	6.7	v (GRO)
2/10/2011	NP		12.00	26.00	14.53	23.33	960	<4.0	<4.0	<4.0	<4.0	12	0.58	6.8	v (GRO)
8/30/2011	NP		12.00	26.00	15.35	22.51	200	<0.50	<0.50	<0.50	<0.50	4.5	0.67	6.7	w (GRO)
2/17/2012	P		12.00	26.00	15.63	22.23	190	<2.5	<2.5	<2.5	<2.5	2.9	0.80	7.00	w (GRO)
8/30/2012	P		12.00	26.00	16.18	21.68	67	<0.50	<0.50	<0.50	<1.0	2.4	1.23	6.92	

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-3														
6/26/2000	--	39.32	12.00	26.00	15.96	23.36	--	--	--	--	--	--	--	--
7/20/2000	--		12.00	26.00	16.42	22.90	<50	<0.5	<0.5	<0.5	<1.0	130	--	--
9/19/2000	--		12.00	26.00	17.18	22.14	190	17	<0.5	1.4	2.4	160	--	--
12/21/2000	--		12.00	26.00	16.97	22.35	187	17.8	<0.5	2.47	2.5	143/125	--	--
3/13/2001	--		12.00	26.00	15.17	24.15	72.4	2.83	<0.5	<0.5	<0.5	126/122	--	--
9/18/2001	--		12.00	26.00	17.81	21.51	140	6.4	<0.5	3.5	1.6	110/75	--	--
12/28/2001	--		12.00	26.00	15.44	23.88	130	5.9	<0.5	0.99	0.55	90/63	--	--
3/14/2002	--		12.00	26.00	15.50	23.82	<50	<0.5	<0.5	<0.5	<0.5	100/88	--	--
4/23/2002	--		12.00	26.00	14.96	24.36	<50	<0.5	<0.5	<0.5	<0.5	77	--	--
7/17/2002	NP		12.00	26.00	17.09	22.23	<50	<0.50	<0.50	<0.50	<0.50	47	7.2	7.2
10/9/2002	NP		12.00	26.00	17.87	21.45	<50	<0.50	<0.50	<0.50	<0.50	26/29	7.2	7.2
1/13/2003	NP		12.00	26.00	14.78	24.54	<50	<0.50	<0.50	<0.50	<0.50	59	6.8	6.8 l
04/07/03	NP		12.00	26.00	16.15	23.17	88	<0.50	<0.50	<0.50	<0.50	75	7.0	7.0
7/9/2003	--		12.00	26.00	16.79	22.53	100	<0.50	<0.50	<0.50	<0.50	52	6.5	6.5
02/05/2004	NP	39.19	12.00	26.00	15.66	23.53	240	<0.50	<0.50	<0.50	<0.50	37	0.5	-- m
04/05/2004	NP		12.00	26.00	15.78	23.41	140	<0.50	<0.50	<0.50	0.60	53	1.0	6.6
07/13/2004	NP		12.00	26.00	17.20	21.99	120	<0.50	<0.50	<0.50	<0.50	35	0.8	6.7
11/04/2004	NP		12.00	26.00	17.32	21.87	160	<0.50	<0.50	<0.50	<0.50	25	0.8	6.5
01/20/2005	NP		12.00	26.00	15.07	24.12	160	<0.50	<0.50	<0.50	<0.50	27	0.6	6.1
04/11/2005	NP		12.00	26.00	14.24	24.95	<50	<0.50	<0.50	<0.50	<0.50	21	0.6	6.1
08/01/2005	NP		12.00	26.00	16.29	22.90	<50	<0.50	<0.50	<0.50	<0.50	23	1.04	7.2
10/21/2005	NP		12.00	26.00	17.41	21.78	88	<0.50	<0.50	<0.50	<0.50	19	1.9	6.6
01/18/2006	NP		12.00	26.00	13.80	25.39	73	<0.50	<0.50	<0.50	<0.50	13	1.13	6.6
04/14/2006	NP		12.00	26.00	12.55	26.64	<50	<0.50	<0.50	<0.50	<0.50	6.7	0.71	6.6
7/19/2006	NP		12.00	26.00	15.04	24.15	<50	<0.50	<0.50	<0.50	<0.50	11	2.0	6.6 q
10/24/2006	P		12.00	26.00	16.45	22.74	<50	<0.50	<0.50	<0.50	<0.50	33	--	6.77
1/15/2007	P		12.00	26.00	16.00	23.19	<50	<0.50	<0.50	0.61	<0.50	29	1.11	7.03
4/18/2007	NP		12.00	26.00	15.87	23.32	<50	<0.50	<0.50	<0.50	<0.50	9.5	1.67	7.07
7/17/2007	NP		12.00	26.00	19.40	19.79	<50	<0.50	<0.50	<0.50	<0.50	19	4.25	7.27
10/11/2007	NP		12.00	26.00	17.43	21.76	<50	<0.50	<0.50	<0.50	<0.50	5.3	1.62	7.10

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ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-3 Cont.															
1/8/2008	NP	39.19	12.00	26.00	15.16	24.03	<50	<0.50	<0.50	<0.50	<0.50	8.9	2.02	6.94	
4/8/2008	NP		12.00	26.00	15.75	23.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.98	6.80	
8/20/2008	NP		12.00	26.00	17.65	21.54	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.85	7.62	
11/17/2008	NP		12.00	26.00	17.76	21.43	<50	<0.50	<0.50	<0.50	<0.50	3.6	1.36	6.90	
2/3/2009	NP		12.00	26.00	17.36	21.83	<50	<0.50	<0.50	<0.50	<0.50	2.1	2.55	7.04	
5/12/2009	NP		12.00	26.00	16.30	22.89	<50	<0.50	<0.50	<0.50	<0.50	2.1	1.68	6.98	
8/13/2009	NP		12.00	26.00	18.75	20.44	<50	<0.50	<0.50	<0.50	<0.50	2.7	0.15	7.03	
2/18/2010	NP		12.00	26.00	15.31	23.88	<50	<0.50	<0.50	<0.50	<0.50	0.59	2.07	6.83	v (GRO)
7/23/2010	NP		12.00	26.00	16.34	22.85	<50	<0.50	<0.50	<0.50	<0.50	0.85	1.23	7.4	
2/10/2011	NP		12.00	26.00	15.63	23.56	<50	<0.50	<0.50	<0.50	<0.50	0.51	2.11	6.9	
8/30/2011	NP		12.00	26.00	16.45	22.74	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.83	6.9	
2/17/2012	P		12.00	26.00	16.70	22.49	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.85	7.12	
8/30/2012	P		12.00	26.00	17.15	22.04	<50	<0.50	<0.50	<0.50	<1.0	0.56	1.69	7.11	
MW-4															
8/30/202	--	NS	10.00	24.00	16.18	--	--	--	--	--	--	--	--	--	
6/26/2000	--	38.10	10.00	24.00	14.59	23.51	--	--	--	--	--	--	--	--	
7/20/2000	--		10.00	24.00	15.04	23.06	97	7.9	<0.5	<0.5	1.1	51	--	--	
9/19/2000	--		10.00	24.00	15.83	22.27	110	7	<0.5	<0.5	<1.0	60	--	--	
12/21/2000	--		10.00	24.00	15.59	22.51	120	5.6	<0.5	1.72	<0.5	46.3/48.6	--	--	
3/13/2001	--		10.00	24.00	13.73	24.37	76	0.796	<0.5	<0.5	<0.5	53.7/50	--	--	
9/18/2001	--		10.00	24.00	16.50	21.60	<50	<0.5	<0.5	<0.5	<0.5	25/26	--	--	
12/28/2001	--		10.00	24.00	14.03	24.07	<50	<0.5	<0.5	<0.5	<0.5	15/11	--	--	
3/14/2002	--		10.00	24.00	14.10	24.00	<50	<0.5	<0.5	<0.5	<0.5	31/28	--	--	
4/23/2002	--		10.00	24.00	13.57	24.53	<50	2.8	<0.5	<0.5	<0.5	42	--	--	
7/17/2002	NP		10.00	24.00	15.76	22.34	<50	<0.50	<0.50	<0.50	<0.50	16	7.1	7.1	
10/9/2002	NP		10.00	24.00	16.59	21.51	<50	2.2	<0.50	<0.50	<0.50	20/23	7.1	7.1	
1/13/2003	NP		10.00	24.00	13.43	24.67	52	<0.50	1.6	<0.50	<0.50	22	6.6	6.6	d
04/07/03	NP		10.00	24.00	14.74	23.36	65	<0.50	<0.50	<0.50	<0.50	24	6.6	6.6	
7/9/2003	--		10.00	24.00	15.44	22.66	120	<0.50	<0.50	<0.50	<0.50	34	6.6	6.6	
02/05/2004	NP	37.99	10.00	24.00	14.39	23.60	120	<0.50	<0.50	<0.50	<0.50	22	0.5	6.6	m

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-4 Cont.															
04/05/2004	NP	37.99	10.00	24.00	14.37	23.62	110	<0.50	<0.50	<0.50	<0.50	27	1.1	6.5	
07/13/2004	NP		10.00	24.00	15.96	22.03	77	<0.50	<0.50	<0.50	<0.50	27	0.6	6.6	
11/04/2004	NP		10.00	24.00	16.02	21.97	<50	<0.50	<0.50	<0.50	<0.50	19	1.2	6.7	
01/20/2005	NP		10.00	24.00	13.72	24.27	65	<0.50	<0.50	<0.50	<0.50	18	0.6	6.1	
04/11/2005	NP		10.00	24.00	12.80	25.19	51	<0.50	<0.50	<0.50	<0.50	14	0.7	6.2	
08/01/2005	NP		10.00	24.00	14.88	23.11	<50	<0.50	<0.50	<0.50	<0.50	18	1.46	7.3	
10/21/2005	NP		10.00	24.00	15.01	22.98	<50	<0.50	<0.50	<0.50	<0.50	15	1.24	7.6	
01/18/2006	NP		10.00	24.00	12.92	25.07	<50	<0.50	<0.50	<0.50	<0.50	8.9	0.77	6.5	
04/14/2006	NP		10.00	24.00	11.41	26.58	<50	<0.50	<0.50	<0.50	<0.50	4.2	0.84	6.6	
7/19/2006	NP		10.00	24.00	13.86	24.13	<50	<0.50	<0.50	<0.50	<0.50	3.4	1.0	6.7	
10/24/2006	P		10.00	24.00	15.35	22.64	<50	<0.50	<0.50	2.0	<0.50	3.5	--	6.90	
1/15/2007	P		10.00	24.00	14.96	23.03	<50	<0.50	<0.50	0.96	<0.50	3.8	--	7.04	
4/18/2007	NP		10.00	24.00	14.80	23.19	<50	<0.50	<0.50	<0.50	<0.50	5.6	5.33	6.93	
7/17/2007	NP		10.00	24.00	16.10	21.89	<50	<0.50	<0.50	<0.50	<0.50	6.6	3.73	6.87	
10/11/2007	NP		10.00	24.00	16.45	21.54	<50	<0.50	<0.50	<0.50	<0.50	0.81	2.68	7.07	
1/8/2008	NP		10.00	24.00	14.10	23.89	<50	<0.50	<0.50	<0.50	<0.50	1.2	3.50	6.74	
4/8/2008	NP		10.00	24.00	14.68	23.31	<50	<0.50	<0.50	<0.50	<0.50	1.7	2.54	6.80	
8/20/2008	NP		10.00	24.00	16.65	21.34	<50	<0.50	<0.50	<0.50	<0.50	0.70	2.36	6.90	
11/17/2008	NP		10.00	24.00	16.73	21.26	<50	<0.50	<0.50	<0.50	<0.50	0.73	1.07	6.83	
2/3/2009	NP		10.00	24.00	16.36	21.63	<50	<0.50	<0.50	<0.50	<0.50	0.67	3.92	7.34	
5/12/2009	NP		10.00	24.00	15.26	22.73	<50	<0.50	<0.50	<0.50	<0.50	0.62	0.81	6.98	
8/13/2009	NP		10.00	24.00	16.87	21.12	<50	<0.50	<0.50	<0.50	<0.50	0.65	0.94	7.12	u
2/18/2010	NP		10.00	24.00	14.22	23.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.20	6.25	
7/23/2010	NP		10.00	24.00	15.36	22.63	<50	<0.50	<0.50	<0.50	<0.50	0.52	0.68	7.0	
2/10/2011	NP		10.00	24.00	14.54	23.45	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	6.8	
8/30/2011	NP		10.00	24.00	15.38	22.61	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.03	7.0	
2/17/2012	P		10.00	24.00	15.66	22.33	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.96	7.06	
8/30/2012	P		10.00	24.00	16.18	21.81	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.54	7.02	
MW-5															
6/26/2000	--	37.21	9.50	23.50	14.27	22.94	--	--	--	--	--	--	--	--	

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ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-5 Cont.														
7/20/2000	--	37.21	9.50	23.50	14.69	22.52	55	<0.5	<0.5	<0.5	<1.0	14,000	--	--
9/19/2000	--		9.50	23.50	15.36	21.85	54	<0.5	<0.5	<0.5	<1.0	13,000	--	--
12/21/2000	--		9.50	23.50	15.15	22.06	72.9	2.51	<0.5	<0.5	0.961	19,200/21,200	--	--
3/13/2001	--		9.50	23.50	13.50	23.71	<500	<5	<5	<5	<5	15,900/20,000	--	--
9/18/2001	--		9.50	23.50	15.94	21.27	<10,000	<100	<100	<100	<1,000	22,000/20,000	--	--
12/28/2001	--		9.50	23.50	13.45	23.76	<10,000	<100	<100	<100	<100	10,000/10,000	--	--
3/14/2002	--		9.50	23.50	13.82	23.39	<5,000	<50	<50	<50	<50	7,100/7,700	--	--
4/23/2002	--		9.50	23.50	13.25	23.96	<5,000	<50	<50	<50	<50	8,900	--	--
7/17/2002	NP		9.50	23.50	15.27	21.94	7,900	<50	<50	<50	<50	13,000	7.5	7.5 d
10/9/2002	NP		9.50	23.50	16.02	21.19	2,400	<20	<20	<20	<20	7,300/7,500	6.7	6.7 e
1/13/2003	NP		9.50	23.50	13.20	24.01	6,400	<50	<50	<50	<50	8,900	6.8	6.8 e, k, j
04/07/03	NP		9.50	23.50	14.42	22.79	<10,000	<100	<100	<100	<100	3,700	6.8	6.8
7/9/2003	--		9.50	23.50	15.01	22.20	11,000	<50	<50	<50	<50	6,500	6.9	6.9
02/05/2004	NP	37.12	9.50	23.50	14.10	23.02	8,100	<50	<50	<50	<50	7,900	1.5	-- m
04/05/2004	NP		9.50	23.50	14.14	22.98	4,000	<25	<25	<25	<25	2,000	1.0	6.6
07/13/2004	NP		9.50	23.50	15.37	21.75	<5,000	<50	<50	<50	<50	4,000	0.8	6.7
11/04/2004	NP		9.50	23.50	15.53	21.59	7,400	<50	<50	<50	<50	6,300	3.5	6.7
01/20/2005	NP		9.50	23.50	13.51	23.61	6,500	<50	<50	<50	<50	6,900	0.7	6.5 n
04/11/2005	NP		9.50	23.50	12.75	24.37	<5,000	<50	<50	<50	<50	2,600	0.5	7.0
08/01/2005	NP		9.50	23.50	14.59	22.53	110	<1.0	<1.0	<1.0	<1.0	130	1.36	7.5
10/21/2005	NP		9.50	23.50	15.57	21.55	<250	<2.5	<2.5	<2.5	<2.5	86	1.53	6.8
01/18/2006	NP		9.50	23.50	12.60	24.52	<250	<2.5	<2.5	<2.5	<2.5	100	1.2	6.7
04/14/2006	NP		9.50	23.50	11.74	25.38	310	<2.5	<2.5	<2.5	<2.5	240	0.93	6.6
7/19/2006	NP		9.50	23.50	13.78	23.34	<50	<2.5	<2.5	<2.5	<2.5	84	1.2	6.6
10/24/2006	P		9.50	23.50	14.95	22.17	61	<0.50	<0.50	<0.50	<0.50	17	--	6.69
1/15/2007	P		9.50	23.50	14.63	22.49	73	<0.50	<0.50	<0.50	<0.50	36	2.8	6.73
4/18/2007	NP		9.50	23.50	14.50	22.62	93	<2.5	<2.5	<2.5	<2.5	16	1.66	6.84 n, EBZ present in method blank
7/17/2007	NP		9.50	23.50	15.55	21.57	53	<2.5	<2.5	<2.5	<2.5	6.6	5.02	7.02 n
10/11/2007	NP		9.50	23.50	15.83	21.29	<50	<0.50	<0.50	<0.50	<0.50	4.8	2.92	7.23
1/8/2008	NP		9.50	23.50	13.82	23.30	<50	<0.50	<0.50	<0.50	<0.50	5.6	1.80	6.91

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

ARCO Service Station #2111, 1156 Davis St, San Leandro, 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						pH	Footnote
							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-5 Cont.														
4/8/2008	NP	37.12	9.50	23.50	14.38	22.74	<50	<0.50	<0.50	<0.50	<0.50	8.0	1.14	6.76
8/20/2008	NP		9.50	23.50	16.11	21.01	<50	<1.0	<1.0	<1.0	<1.0	3.6	1.65	6.86
11/17/2008	NP		9.50	23.50	16.15	20.97	<50	<0.50	<0.50	<0.50	<0.50	1.3	0.66	6.93
2/3/2009	NP		9.50	23.50	15.83	21.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.38	6.77
5/12/2009	NP		9.50	23.50	14.48	22.64	<50	<0.50	<0.50	<0.50	<0.50	2.5	0.41	6.83
8/13/2009	NP		9.50	23.50	16.30	20.82	<50	<1.0	<1.0	<1.0	<1.0	1.3	0.78	7.06 u
2/18/2010	NP		9.50	23.50	13.95	23.17	<50	<0.50	<0.50	<0.50	<0.50	2.2	1.36	6.40
7/23/2010	NP		9.50	23.50	14.98	22.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.75	7.2
2/10/2011	NP		9.50	23.50	14.24	22.88	<50	<0.50	<0.50	<0.50	<0.50	0.73	0.83	6.7
8/30/2011	NP		9.50	23.50	14.99	22.13	<50	<0.50	<0.50	<0.50	<0.50	1.9	1.64	8.2
2/17/2012	P		9.50	23.50	15.16	21.96	<50	<0.50	<0.50	<0.50	<0.50	0.98	0.85	7.05
8/30/2012	P		9.50	23.50	15.69	21.43	<50	<0.50	<0.50	<0.50	<1.0	1.5	1.60	7.10
MW-6														
6/26/2000	--	37.11	10.00	25.00	13.46	23.65	--	--	--	--	--	--	--	--
7/20/2000	--		10.00	25.00	13.94	23.17	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--
9/19/2000	--		10.00	25.00	14.41	22.70	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--
12/21/2000	--		10.00	25.00	14.53	22.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/13/2001	--		10.00	25.00	12.67	24.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/18/2001	--		10.00	25.00	15.42	21.69	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0	--	--
12/28/2001	--		10.00	25.00	12.96	24.15	<50	<0.5	<0.5	<0.5	<0.5	12/<0.5	--	--
3/14/2002	--		10.00	25.00	12.98	24.13	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/23/2002	--		10.00	25.00	12.44	24.67	<50	<0.5	<0.5	<0.5	<0.5	3.1	--	--
7/17/2002	NP		10.00	25.00	14.65	22.46	<50	<0.50	<0.50	<0.50	<0.50	<2.5	7.3	7.3
10/9/2002	NP		10.00	25.00	15.51	21.60	<50	<0.50	<0.50	<0.50	<0.50	<2.5	7.1	7.1
1/13/2003	NP		10.00	25.00	12.27	24.84	<50	<0.50	<0.50	<0.50	<0.50	<2.5	6.8	6.8
04/07/03	NP		10.00	25.00	13.61	23.50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.6	6.6
7/9/2003	--		10.00	25.00	14.34	22.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	7	7.0
02/05/2004	--		10.00	25.00	13.38	23.73	--	--	--	--	--	--	--	-- m
04/05/2004	--		10.00	25.00	13.31	23.80	--	--	--	--	--	--	--	--
07/13/2004	NP		10.00	25.00	14.65	22.46	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	6.8

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ARCO Service Station #2111, 1156 Davis St, San Leandro, 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			
MW-6 Cont.															
11/04/2004	--	37.11	10.00	25.00	14.95	22.16	--	--	--	--	--	--	--	--	--
01/20/2005	--		10.00	25.00	12.57	24.54	--	--	--	--	--	--	--	--	--
04/11/2005	--		10.00	25.00	12.05	25.06	--	--	--	--	--	--	--	--	--
08/01/2005	NP		10.00	25.00	13.79	23.32	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	7.6	
10/21/2005	--		10.00	25.00	14.60	22.51	--	--	--	--	--	--	--	--	--
01/18/2006	--		10.00	25.00	11.80	25.31	--	--	--	--	--	--	--	--	--
04/14/2006	--		10.00	25.00	10.92	26.19	--	--	--	--	--	--	--	--	--
7/19/2006	NP		10.00	25.00	12.92	24.19	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	6.9	
10/24/2006	--		10.00	25.00	14.23	22.88	--	--	--	--	--	--	--	--	--
1/15/2007	--		10.00	25.00	13.80	23.31	--	--	--	--	--	--	--	--	--
4/18/2007	--		10.00	25.00	13.67	23.44	--	--	--	--	--	--	--	--	--
7/17/2007	NP		10.00	25.00	14.08	23.03	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.40	7.02	
10/11/2007	--		10.00	25.00	15.28	21.83	--	--	--	--	--	--	--	--	--
1/8/2008	--		10.00	25.00	13.08	24.03	--	--	--	--	--	--	--	--	--
4/8/2008	--		10.00	25.00	13.52	23.59	--	--	--	--	--	--	--	--	--
8/20/2008	NP		10.00	25.00	15.59	21.52	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.66	6.83	
11/17/2008	--		10.00	25.00	15.61	21.50	--	--	--	--	--	--	--	--	--
2/3/2009	--		10.00	25.00	15.23	21.88	--	--	--	--	--	--	--	--	--
5/12/2009	--		10.00	25.00	14.09	23.02	--	--	--	--	--	--	--	--	--
8/13/2009	NP		10.00	25.00	15.80	21.31	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.85	7.02	u
2/18/2010	--		10.00	25.00	12.96	24.15	--	--	--	--	--	--	--	--	--
7/23/2010	NP		10.00	25.00	13.91	23.20	210	<0.50	<0.50	<0.50	<0.50	<0.50	0.65	6.73	
2/10/2011	--		10.00	25.00	13.15	23.96	--	--	--	--	--	--	--	--	--
8/30/2011	NP		10.00	25.00	13.10	24.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.60	7.2	
2/17/2012	--		10.00	25.00	14.46	22.65	--	--	--	--	--	--	--	--	--
8/30/2012	P		10.00	25.00	14.22	22.89	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.54	6.97	
MW-7															
6/26/2000	--	38.68	12.00	27.00	14.34	24.34	--	--	--	--	--	--	--	--	--
7/20/2000	--		12.00	27.00	15.26	23.42	14,000	5.4	<0.5	2.8	5.9	71,000	--	--	--
9/19/2000	--		12.00	27.00	15.70	22.98	8,400	420	38	470	220	5,600	--	--	--

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-7 Cont.															
12/21/2000	--	38.68	12.00	27.00	16.02	22.66	--	--	--	--	--	--	--	--	--
3/13/2001	--		12.00	27.00	14.18	24.50	<2,000	154	63	46.3	127	75,000/160,000	--	--	--
9/18/2001	--		12.00	27.00	17.02	21.66	<100,000	1,900	<1,000	<1,000	2,800	90,000/370,000	--	--	--
12/28/2001	--		12.00	27.00	14.81	23.87	<20,000	<200	<200	<200	<200	84,000/72,000	--	--	--
3/14/2002	--		12.00	27.00	14.60	24.08	<50,000	<500	<500	<500	<500	85,000/85,000	--	--	--
4/23/2002	--		12.00	27.00	13.94	24.74	<20,000	530	200	220	800	67,000	--	--	--
7/17/2002	NP		12.00	27.00	16.27	22.41	26,000	720	<250	<250	860	120,000	6.9	6.9	d
10/9/2002	NP		12.00	27.00	17.16	21.52	110,000	1,500	4,400	820	5,400	97,000/120,000	6.8	6.8	d
1/13/2003	NP		12.00	27.00	13.82	24.86	<50,000	<500	<500	<500	2,200	33,000	6.6	6.6	f
04/07/03	NP		12.00	27.00	14.52	24.16	<2,500	30	<25	<25	<25	710	7.0	7.0	
7/9/2003	--		12.00	27.00	15.97	22.71	66,000	<500	<500	<500	<500	36,000	6.7	6.7	
02/05/2004	NP	38.54	12.00	27.00	14.75	23.79	55,000	300	<250	<250	<250	34,000	1.0	6.7	m
04/05/2004	NP		12.00	27.00	14.63	23.91	62,000	520	<250	<250	380	37,000	1.0	6.7	
07/13/2004	NP		12.00	27.00	16.31	22.23	<100,000	<1,000	<1,000	<1,000	<1,000	56,000	0.7	6.7	
11/04/2004	--		12.00	27.00	16.46	22.08	70,000	<500	<500	<500	<500	71,000	2.0	6.6	
01/20/2005	NP		12.00	27.00	14.05	24.49	34,000	<250	<250	<250	<250	36,000	0.6	6.3	n
04/11/2005	NP		12.00	27.00	12.55	25.99	<2,500	46	<25	<25	<25	1,200	0.7	6.8	
08/01/2005	NP		12.00	27.00	15.11	23.43	<25,000	<250	<250	<250	<250	4,800	1.78	7.3	
10/21/2005	NP		12.00	27.00	15.65	22.89	14,000	350	<100	<100	110	12,000	1.41	6.6	p
01/18/2006	NP		12.00	27.00	12.60	25.94	16,000	310	<100	<100	110	13,000	0.87	6.7	
04/14/2006	NP		12.00	27.00	12.09	26.45	<10,000	<100	<100	<100	<100	4,700	0.88	6.9	
7/19/2006	NP		12.00	27.00	13.58	24.96	1,300	23	<10	18	26	1,600	1.1	6.8	q
10/24/2006	P		12.00	27.00	15.13	23.41	6,800	100	<5.0	16	15	14,000	--	6.93	
1/15/2007	P		12.00	27.00	14.43	24.11	2,500	<100	<100	<100	<100	3,900	2.12	7.44	n
4/18/2007	NP		12.00	27.00	14.30	24.24	3,000	50	<50	<50	<50	2,700	4.47	7.22	n
7/17/2007	NP		12.00	27.00	23.75	14.79	560	<25	<25	<25	<25	890	4.23	7.41	n
10/11/2007	NP		12.00	27.00	16.18	22.36	210	<2.5	<2.5	<2.5	<2.5	370	2.99	7.33	t (GRO)
1/8/2008	NP		12.00	27.00	13.90	24.64	5,100	45	<25	<25	<25	6,100	2.50	7.23	n
4/8/2008	NP		12.00	27.00	14.22	24.32	270	0.50	<0.50	1.2	0.66	1,200	1.67	7.17	
8/20/2008	NP		12.00	27.00	16.57	21.97	<50	<0.50	<0.50	<0.50	<0.50	39	2.12	7.04	

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							GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
MW-7 Cont.															
11/17/2008	NP	38.54	12.00	27.00	22.91	15.63	68	1.8	1.9	0.54	2.0	28	1.14	6.95	
2/3/2009	NP		12.00	27.00	17.86	20.68	<50	<0.50	<0.50	<0.50	<0.50	18	2.58	6.97	
5/12/2009	NP		12.00	27.00	15.36	23.18	110	2.0	<0.50	<0.50	2.9	390	0.72	7.14	
8/13/2009	NP		12.00	27.00	24.10	14.44	<50	<0.50	<0.50	<0.50	<0.50	21	0.84	7.11	u
2/18/2010	NP		12.00	27.00	14.21	24.33	190	<25	<25	<25	<25	1,300	1.52	7.06	v (GRO)
7/23/2010	NP		12.00	27.00	15.50	23.04	<50	<0.50	<0.50	<0.50	<0.50	1,000	0.57	6.89	v (GRO)
2/10/2011	P		12.00	27.00	14.44	24.10	440	<25	<25	<25	<25	310	0.76	7.0	v (GRO)
8/30/2011	NP		12.00	27.00	15.10	23.44	480	<25	<25	<25	<25	180	0.80	6.9	w (GRO)
2/17/2012	P		12.00	27.00	15.46	23.08	220	0.84	<0.50	<0.50	<0.50	110	1.99	7.50	w (GRO)
8/30/2012	P		12.00	27.00	15.94	22.60	230	<10	<10	<10	<20	210	1.15	7.15	
MW-8															
02/05/2004	P	38.91	--	--	15.61	23.30	3,600	<25	<25	<25	<25	1,900	6.9	6.8	m
04/05/2004	P		--	--	15.64	23.27	1,900	<10	<10	<10	<10	1,200	3.2	6.7	
07/13/2004	P		--	--	17.22	21.69	<1,000	<10	<10	<10	<10	760	1.6	6.7	
11/04/2004	P		--	--	17.19	21.72	960	<5.0	<5.0	<5.0	<5.0	820	1.8	6.7	
01/20/2005	P		--	--	15.25	23.66	<2,500	<25	<25	<25	<25	1,400	1.5	6.4	
04/11/2005	P		--	--	14.17	24.74	700	<5.0	<5.0	<5.0	<5.0	610	1.1	7.1	
08/01/2005	P		--	--	16.10	22.81	<1,000	<10	<10	<10	<10	900	2.58	7.7	
10/21/2005	P		--	--	17.18	21.73	530	<5.0	<5.0	<5.0	<5.0	490	1.4	6.7	n
01/18/2006	P		--	--	13.60	25.31	<500	<5.0	<5.0	<5.0	<5.0	500	2.28	6.6	
04/14/2006	P		--	--	12.36	26.55	<500	<5.0	<5.0	<5.0	<5.0	300	1.97	6.6	
7/19/2006	P		--	--	14.75	24.16	4,500	<25	<25	<25	<25	4,200	1.2	6.6	
10/24/2006	--		--	--	--	--	--	--	--	--	--	--	--	--	s
1/15/2007	P		--	--	15.67	23.24	<50	<0.50	<0.50	<0.50	<0.50	67	1.35	6.68	
4/18/2007	P		--	--	15.53	23.38	100	0.51	<0.50	<0.50	<0.50	130	1.49	6.86	n
7/17/2007	NP		--	--	16.76	22.15	63	<0.50	<0.50	<0.50	<0.50	96	1.85	6.97	n
10/11/2007	P		--	--	16.99	21.92	100	0.52	<0.50	<0.50	<0.50	130	1.67	7.18	
1/8/2008	P		--	--	14.83	24.08	51	<0.50	<0.50	<0.50	<0.50	49	1.30	6.88	n
4/8/2008	P		--	--	15.38	23.53	<50	<0.50	<0.50	<0.50	<0.50	32	1.60	6.77	
8/20/2008	P		--	--	17.80	21.11	<50	<0.50	<0.50	<0.50	<0.50	13	1.18	6.94	

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							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE			
MW-8 Cont.															
11/17/2008	P	38.91	--	--	17.47	21.44	<50	<0.50	<0.50	<0.50	<0.50	14	3.74	6.63	
2/3/2009	P		--	--	16.96	21.95	<50	<0.50	<0.50	<0.50	<0.50	16	0.83	6.9	
5/12/2009	P		--	--	15.93	22.98	<50	<0.50	<0.50	<0.50	<0.50	30	0.31	6.90	
8/13/2009	P		--	--	17.50	21.41	<50	<0.50	<0.50	<0.50	<0.50	7.5	0.65	7.44	
2/18/2010	P		--	--	14.93	23.98	<50	<0.50	<0.50	<0.50	<0.50	12	0.64	6.62	
7/23/2010	P		--	--	16.02	22.89	<50	<0.50	<0.50	<0.50	<0.50	8.2	0.94	6.7	
2/10/2011	P		--	--	15.28	23.63	<50	<0.50	<0.50	<0.50	<0.50	4.5	1.08	6.8	
8/30/2011	P		--	--	16.08	22.83	<50	<0.50	<0.50	<0.50	<0.50	3.6	0.86	6.8	
2/17/2012	P		--	--	16.34	22.57	<50	<0.50	<0.50	<0.50	<0.50	1.8	0.83	7.10	
8/30/2012	P		--	--	16.84	22.07	<50	<0.50	<0.50	<0.50	<1.0	1.9	1.58	7.02	

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 in ft MSL
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing elevation in ft MSL
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter

Footnotes:

a = Product sheen noted
b = Well was sampled after batch extraction event
c = Chromatogram Pattern: Gasoline C6-C10 for GRO/TPH-g
d = Hydrocarbon pattern was present in the requested fuel quantitation range but did not resemble the pattern of the requested fuel for GRO/TPH-g
e = Discrete peak @C6-C7 for GRO/TPH-g
f = This sample was analyzed beyond the EPA recommended holding time for TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE. The results may still be useful for their intended purpose
g = Well not sampled due to the detection of free product (FP)
h = GWE adjusted for FP: (thickness of FP x 0.8) + measured GWE
j = The closing calibration for benzene and total xylenes was outside acceptance limits by 1%. This should be considered in evaluating the result. The average % difference for all analytes met the 15% requirement and the QC suggested that calibration linearity was not a factor
k = The closing calibration was outside acceptance limits by 6%. This should be considered in evaluating the result. The average % difference for all analytes met the 15% requirement and the QC suggested that calibration linearity was not a factor
l = Toluene and MTBE were not confirmed using a secondary column in accordance to client contract
m = TOC elevations re-surveyed to NAVD '88 on February 23, 2004
n = Hydrocarbon result for GRO partly due to indiv. peak(s) in quantitative range
o = Light to moderate sheen
p = Result for MTBE partly due to individual peak(s) in quant. range
q = Gauged with tubing in well
r = Calib. verif. is within method limits but outside contract limits
s = Well inaccessible
t = Initial analysis within holding time but required dilution
u = Sample taken from VOA vial with air bubble > 6mm diameter
v = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
w = Quantitated against gasoline

Notes:

Beginning with the second quarter 2003 sampling event (04/07/03), TPH-g, BTEX, and MTBE analyzed by EPA method 8260B. Prior to 04/07/03, TPH-g was analyzed by EPA method 8015 modified and MTBE was analyzed by EPA methods 8020/ 8260B

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

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

Values for 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 #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
7/20/2000	--	--	2,100	--	--	--	--	--	
9/19/2000	--	--	1,500	--	--	--	--	--	
12/21/2000	--	--	1,080/1,060	--	--	--	--	--	
3/13/2001	--	--	1,430/1,370	--	--	--	--	--	
9/18/2001	--	--	810/1,100	--	--	--	--	--	
12/28/2001	--	--	1,200/1,100	--	--	--	--	--	
3/14/2002	--	--	34/40	--	--	--	--	--	
4/23/2002	--	--	30	--	--	--	--	--	
7/17/2002	--	--	29	--	--	--	--	--	
10/9/2002	--	--	290	--	--	--	--	--	
1/13/2003	--	--	300	--	--	--	--	--	
04/07/03	<100	<20	22	<0.50	<0.50	<0.50	--	--	
7/9/2003	<5,000	<1,000	690	<25	<25	<25	--	--	
02/05/2004	<5,000	<1,000	1,100	<25	<25	32	<25	<25	
04/05/2004	<5,000	<1,000	1,700	<25	<25	38	<25	<25	a
07/13/2004	<2,000	780	730	<10	<10	19	<10	<10	a
11/04/2004	<1,000	<200	380	<5.0	<5.0	12	<5.0	<5.0	
01/20/2005	<1,000	<200	570	<5.0	<5.0	17	<5.0	<5.0	a
04/11/2005	<5,000	<1,000	1,100	<25	<25	34	<25	<25	
08/01/2005	<2,000	<400	1,400	<10	<10	40	<10	<10	
10/21/2005	<5,000	<1,000	970	<25	<25	<25	<25	<25	
01/18/2006	<1,500	<100	330	<2.5	<2.5	9.7	<2.5	<2.5	
04/14/2006	<1,500	<100	310	<2.5	<2.5	9.3	<2.5	<2.5	
7/19/2006	<1,500	<100	180	<2.5	<2.5	3.2	<2.5	<2.5	
10/24/2006	<1,500	<100	360	<2.5	<2.5	10	<2.5	<2.5	
1/15/2007	<1,500	<100	220	<2.5	<2.5	6.8	<2.5	<2.5	
4/18/2007	<1,500	<100	150	<2.5	<2.5	<2.5	<2.5	<2.5	
7/17/2007	<600	<40	94	<1.0	<1.0	2.3	<1.0	<1.0	
10/11/2007	<300	<20	62	<0.50	<0.50	<0.50	<0.50	<0.50	
1/8/2008	<300	74	90	<0.50	<0.50	2.5	<0.50	<0.50	a
4/8/2008	<300	57	110	<0.50	<0.50	2.6	<0.50	<0.50	
8/20/2008	<300	<10	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	

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Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1 Cont.									
11/17/2008	<300	<10	21	<0.50	<0.50	0.52	<0.50	<0.50	
2/3/2009	<300	<10	16	<0.50	<0.50	<0.50	<0.50	<0.50	
5/12/2009	<300	<10	9.3	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<300	<10	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	b
2/18/2010	<300	<10	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
7/23/2010	<300	<10	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2011	<300	<10	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<300	<10	0.85	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	0.74	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
7/20/2000	--	--	13,000	--	--	--	--	--	
9/19/2000	--	--	19,000	--	--	--	--	--	
12/21/2000	--	--	54,300/89,200	--	--	--	--	--	
12/21/2000	--	--	22,400/24,700	--	--	--	--	--	
3/13/2001	--	--	91,700/76,000	--	--	--	--	--	
3/13/2001	--	--	3,590/3,260	--	--	--	--	--	
12/28/2001	--	--	9,300/8,800	--	--	--	--	--	
3/14/2002	--	--	990/960	--	--	--	--	--	
4/23/2002	--	--	8,500	--	--	--	--	--	
7/17/2002	--	--	19,000/0.4	--	--	--	--	--	
04/05/2004	<1,000	<200	750	<5.0	<5.0	<5.0	<5.0	<5.0	
07/13/2004	<10,000	12,000	5,800	<50	<50	<50	<50	<50	a
08/31/2004	--	--	--	--	--	--	--	--	a
01/20/2005	<10,000	<2,000	7,000	<50	<50	<50	<50	<50	a
04/11/2005	<10,000	<2,000	2,700	<50	<50	<50	<50	<50	
08/01/2005	<10,000	<2,000	2,700	<50	<50	<50	<50	<50	
01/18/2006	<30,000	<2,000	1,600	<50	<50	<50	<50	<50	
04/14/2006	<30,000	<2,000	2,100	<50	<50	<50	<50	<50	
7/19/2006	<6,000	<400	930	<10	<10	<10	<10	<10	
1/15/2007	<6,000	1,900	1,400	<10	<10	<10	<10	<10	

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Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-2 Cont.									
4/18/2007	<6,000	1,200	1,100	<10	<10	<10	<10	<10	
7/17/2007	<6,000	1,000	1,300	<10	<10	<10	<10	<10	
10/11/2007	<6,000	1,300	1,000	<10	<10	<10	<10	<10	
1/8/2008	<6,000	2,600	1,300	<10	<10	<10	<10	<10	a
4/8/2008	<300	970	690	<0.50	<0.50	3.3	<0.50	<0.50	
8/20/2008	<6,000	470	190	<10	<10	<10	<10	<10	
11/17/2008	<3,000	740	89	<5.0	<5.0	<5.0	<5.0	<5.0	
2/3/2009	<1,500	230	31	<2.5	<2.5	<2.5	<2.5	<2.5	
5/12/2009	<300	590	25	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<6,000	2,300	39	<10	<10	<10	<10	<10	b
2/18/2010	<3,000	1,000	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
7/23/2010	<1,200	410	6.5	<2.0	<2.0	<2.0	<2.0	<2.0	
2/10/2011	<2400	2800	12	<4.0	<4.0	<4.0	<4.0	<4.0	
8/30/2011	<300	340	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<1,500	920	2.9	<2.5	<2.5	<2.5	<2.5	<2.5	
8/30/2012	<150	190	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
7/20/2000	--	--	130	--	--	--	--	--	
9/19/2000	--	--	160	--	--	--	--	--	
12/21/2000	--	--	143/125	--	--	--	--	--	
3/13/2001	--	--	126/122	--	--	--	--	--	
9/18/2001	--	--	110/75	--	--	--	--	--	
12/28/2001	--	--	90/63	--	--	--	--	--	
3/14/2002	--	--	100/88	--	--	--	--	--	
4/23/2002	--	--	77	--	--	--	--	--	
7/17/2002	--	--	47	--	--	--	--	--	
10/9/2002	--	--	26/29	--	--	--	--	--	
1/13/2003	--	--	59	--	--	--	--	--	
04/07/03	<100	<20	75	<0.50	<0.50	6.5	--	--	
7/9/2003	<100	<20	52	<0.50	<0.50	4.2	--	--	
02/05/2004	<100	<20	37	<0.50	<0.50	3.1	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
04/05/2004	<100	<20	53	<0.50	<0.50	3.7	<0.50	<0.50	a
07/13/2004	<100	44	35	<0.50	<0.50	3.2	<0.50	<0.50	
11/04/2004	<100	<20	25	<0.50	<0.50	2.2	<0.50	<0.50	
01/20/2005	<100	<20	27	<0.50	<0.50	2.6	<0.50	<0.50	
04/11/2005	<100	<20	21	<0.50	<0.50	2.0	<0.50	<0.50	
08/01/2005	<100	<20	23	<0.50	<0.50	1.9	<0.50	<0.50	
10/21/2005	<100	<20	19	<0.50	<0.50	2.0	<0.50	<0.50	
01/18/2006	<300	<20	13	<0.50	<0.50	1.3	<0.50	<0.50	
04/14/2006	<300	<20	6.7	<0.50	<0.50	0.61	<0.50	<0.50	
7/19/2006	<300	<20	11	<0.50	<0.50	0.72	<0.50	<0.50	r
10/24/2006	<300	<20	33	<0.50	<0.50	2.8	<0.50	<0.50	
1/15/2007	<300	<20	29	<0.50	<0.50	2.9	<0.50	<0.50	
4/18/2007	<300	<20	9.5	<0.50	<0.50	0.90	<0.50	<0.50	
7/17/2007	<300	<20	19	<0.50	<0.50	1.5	<0.50	<0.50	
10/11/2007	<300	<20	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	
1/8/2008	<300	<20	8.9	<0.50	<0.50	0.84	<0.50	<0.50	a
4/8/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/17/2008	<300	<10	3.6	<0.50	<0.50	<0.50	<0.50	<0.50	
2/3/2009	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
5/12/2009	<300	<10	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<300	<10	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	<10	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	
7/23/2010	<300	14	0.85	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2011	<300	<10	0.51	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	0.56	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-4									
7/20/2000	--	--	51	--	--	--	--	--	
9/19/2000	--	--	60	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
12/21/2000	--	--	46.3/48.6	--	--	--	--	--	
3/13/2001	--	--	53.7/50	--	--	--	--	--	
9/18/2001	--	--	25/26	--	--	--	--	--	
12/28/2001	--	--	15/11	--	--	--	--	--	
3/14/2002	--	--	31/28	--	--	--	--	--	
4/23/2002	--	--	42	--	--	--	--	--	
7/17/2002	--	--	16	--	--	--	--	--	
10/9/2002	--	--	20/23	--	--	--	--	--	
1/13/2003	--	--	22	--	--	--	--	--	
04/07/03	<100	<20	24	<0.50	<0.50	7.3	--	--	
7/9/2003	<100	<20	34	<0.50	<0.50	9.8	--	--	
02/05/2004	<100	<20	22	<0.50	<0.50	6.2	<0.50	<0.50	
04/05/2004	<100	<20	27	<0.50	<0.50	7.2	<0.50	<0.50	a
07/13/2004	<100	26	27	<0.50	<0.50	7.4	<0.50	<0.50	a
11/04/2004	<100	<20	19	<0.50	<0.50	5.1	<0.50	<0.50	
01/20/2005	<100	<20	18	<0.50	<0.50	5.2	<0.50	<0.50	
04/11/2005	<100	<20	14	<0.50	<0.50	4.0	<0.50	<0.50	
08/01/2005	<100	<20	18	<0.50	<0.50	3.9	<0.50	<0.50	
10/21/2005	<100	<20	15	<0.50	<0.50	4.6	<0.50	<0.50	
01/18/2006	<300	<20	8.9	<0.50	<0.50	2.5	<0.50	<0.50	
04/14/2006	<300	<20	4.2	<0.50	<0.50	1.3	<0.50	<0.50	
7/19/2006	<300	<20	3.4	<0.50	<0.50	0.69	<0.50	<0.50	r
10/24/2006	<300	<20	3.5	<0.50	<0.50	0.91	<0.50	<0.50	
1/15/2007	<300	<20	3.8	<0.50	<0.50	0.98	<0.50	<0.50	
4/18/2007	<300	<20	5.6	<0.50	<0.50	1.1	<0.50	<0.50	
7/17/2007	<300	<20	6.6	<0.50	<0.50	1.7	<0.50	<0.50	
10/11/2007	<300	<20	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	
1/8/2008	<300	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	a
4/8/2008	<300	<10	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	<300	<10	0.70	<0.50	<0.50	<0.50	<0.50	<0.50	
11/17/2008	<300	<10	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	
2/3/2009	<300	<10	0.67	<0.50	<0.50	<0.50	<0.50	<0.50	

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ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
5/12/2009	<300	<10	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<300	<10	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	b
2/18/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/23/2010	<300	<10	0.52	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-5									
7/20/2000	--	--	14,000	--	--	--	--	--	
9/19/2000	--	--	13,000	--	--	--	--	--	
12/21/2000	--	--	19,200/21,200	--	--	--	--	--	
3/13/2001	--	--	15,900/20,000	--	--	--	--	--	
9/18/2001	--	--	22,000/20,000	--	--	--	--	--	
12/28/2001	--	--	10,000/10,000	--	--	--	--	--	
3/14/2002	--	--	7,100/7,700	--	--	--	--	--	
4/23/2002	--	--	8,900	--	--	--	--	--	
7/17/2002	--	--	13,000	--	--	--	--	--	
10/9/2002	--	--	7,300/7,500	--	--	--	--	--	
1/13/2003	--	--	8,900	--	--	--	--	--	
04/07/03	<20,000	<4,000	3,700	<100	<100	<100	--	--	
7/9/2003	<10,000	<2,000	6,500	<50	<50	<50	--	--	
02/05/2004	<10,000	<2,000	7,900	<50	<50	<50	<50	<50	a
04/05/2004	<5,000	<1,000	2,000	<25	<25	<25	<25	<25	a
07/13/2004	<10,000	3,200	4,000	<50	<50	<50	<50	<50	a
11/04/2004	<10,000	<2,000	6,300	<50	<50	<50	<50	<50	
01/20/2005	<10,000	<2,000	6,900	<50	<50	<50	<50	<50	a
04/11/2005	<10,000	3,600	2,600	<50	<50	<50	<50	<50	
08/01/2005	<200	1,600	130	<1.0	<1.0	<1.0	<1.0	<1.0	
10/21/2005	<500	1,400	86	<2.5	<2.5	<2.5	<2.5	<2.5	
01/18/2006	<1,500	2,200	100	<2.5	<2.5	<2.5	<2.5	<2.5	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-5 Cont.									
04/14/2006	<1,500	2,100	240	<2.5	<2.5	<2.5	<2.5	<2.5	
7/19/2006	<1,500	2,800	84	<2.5	<2.5	<2.5	<2.5	<2.5	r
10/24/2006	<300	1,200	17	<0.50	<0.50	<0.50	<0.50	<0.50	a
1/15/2007	<300	990	36	<0.50	<0.50	<0.50	<0.50	<0.50	
4/18/2007	<1,500	2,000	16	<2.5	<2.5	<2.5	<2.5	<2.5	
7/17/2007	<1,500	1,100	6.6	<2.5	<2.5	<2.5	<2.5	<2.5	
10/11/2007	<300	750	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	
1/8/2008	<300	220	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	a
4/8/2008	<300	300	8.0	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	<600	520	3.6	<1.0	<1.0	<1.0	<1.0	<1.0	
11/17/2008	<300	160	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
2/3/2009	<300	94	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
5/12/2009	<300	29	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<600	180	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	b
2/18/2010	<300	17	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	
7/23/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2011	<300	<10	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<300	<10	0.98	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6									
7/20/2000	--	--	<3.0	--	--	--	--	--	
9/19/2000	--	--	<3.0	--	--	--	--	--	
12/21/2000	--	--	<2.5	--	--	--	--	--	
3/13/2001	--	--	<2.5	--	--	--	--	--	
9/18/2001	--	--	<2.5/<2.0	--	--	--	--	--	
12/28/2001	--	--	12/<0.5	--	--	--	--	--	
3/14/2002	--	--	<2.5	--	--	--	--	--	
4/23/2002	--	--	3.1	--	--	--	--	--	
7/17/2002	--	--	<2.5	--	--	--	--	--	
10/9/2002	--	--	<2.5	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-6 Cont.									
1/13/2003	--	--	<2.5	--	--	--	--	--	
04/07/03	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
07/13/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/19/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	r
7/17/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/23/2010	<300	15	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-7									
7/20/2000	--	--	71,000	--	--	--	--	--	
9/19/2000	--	--	5,600	--	--	--	--	--	
3/13/2001	--	--	75,000/160,000	--	--	--	--	--	
9/18/2001	--	--	90,000/370,000	--	--	--	--	--	
12/28/2001	--	--	84,000/72,000	--	--	--	--	--	
3/14/2002	--	--	85,000/85,000	--	--	--	--	--	
4/23/2002	--	--	67,000	--	--	--	--	--	
7/17/2002	--	--	120,000	--	--	--	--	--	
10/9/2002	--	--	7,000/120,000	--	--	--	--	--	
1/13/2003	--	--	33,000	--	--	--	--	--	
04/07/03	<5,000	<1,000	710	<25	<25	<25	--	--	
7/9/2003	<100,000	<20,000	36,000	<500	<500	<500	--	--	
02/05/2004	<50,000	<10,000	34,000	<250	<250	<250	<250	<250	
04/05/2004	<50,000	<10,000	37,000	<250	<250	<250	<250	<250	
07/13/2004	<200,000	<40,000	56,000	<1,000	<1,000	1,300	<1,000	<1,000	
11/04/2004	<100,000	<20,000	71,000	<500	<500	<500	<500	<500	
01/20/2005	<50,000	<10,000	36,000	<250	<250	<250	<250	<250	a
04/11/2005	<5,000	<1,000	1,200	<25	<25	<25	<25	<25	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-7 Cont.									
08/01/2005	<50,000	<10,000	4,800	<250	<250	<250	<250	<250	
10/21/2005	<20,000	24,000	12,000	<100	<100	<100	<100	<100	
01/18/2006	<60,000	15,000	13,000	<100	<100	<100	<100	<100	
04/14/2006	<60,000	<4,000	4,700	<100	<100	<100	<100	<100	
7/19/2006	<6,000	720	1,600	<10	<10	<10	<10	<10	
10/24/2006	<3,000	10,000	14,000	<5.0	<5.0	31	<5.0	<5.0	a
1/15/2007	<60,000	9,300	3,900	<100	<100	<100	<100	<100	
4/18/2007	<30,000	<2,000	2,700	<50	<50	<50	<50	<50	
7/17/2007	<15,000	<1,000	890	<25	<25	<25	<25	<25	
10/11/2007	<1,500	150	370	<2.5	<2.5	<2.5	<2.5	<2.5	
1/8/2008	<15,000	1,400	6,100	<25	<25	32	<25	<25	
4/8/2008	<300	700	1,200	<0.50	<0.50	5.1	<0.50	<0.50	
8/20/2008	<300	34	39	<0.50	<0.50	<0.50	<0.50	<0.50	
11/17/2008	<300	44	28	<0.50	<0.50	<0.50	<0.50	<0.50	
2/3/2009	<300	66	18	<0.50	<0.50	<0.50	<0.50	<0.50	
5/12/2009	<300	75	390	<0.50	<0.50	1.2	<0.50	<0.50	
8/13/2009	<300	19	21	<0.50	<0.50	<0.50	<0.50	<0.50	b
2/18/2010	<15,000	2,300	1,300	<25	<25	<25	<25	<25	
7/23/2010	<300	7,800	1,000	<0.50	<0.50	3.6	<0.50	<0.50	
2/10/2011	<15,000	9900	310	<25	<25	<25	<25	<25	
8/30/2011	<15,000	9,500	180	<25	<25	<25	<25	<25	
2/17/2012	<300	12,000	110	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<3,000	14,000	210	<10	<10	<10	<10	<10	
MW-8									
02/05/2004	<5,000	<1,000	1,900	<25	<25	<25	<25	<25	
04/05/2004	<2,000	<400	1,200	<10	<10	12	<10	<10	a
07/13/2004	<2,000	770	760	<10	<10	<10	<10	<10	a
11/04/2004	<1,000	<200	820	<5.0	<5.0	9.6	<5.0	<5.0	
01/20/2005	<5,000	<1,000	1,400	<25	<25	<25	<25	<25	a
04/11/2005	<1,000	<200	610	<5.0	<5.0	8.1	<5.0	<5.0	
08/01/2005	<2,000	<400	900	<10	<10	<10	<10	<10	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-8 Cont.									
10/21/2005	<1,000	<200	490	<5.0	<5.0	<5.0	<5.0	<5.0	
01/18/2006	<3,000	<200	500	<5.0	<5.0	5.2	<5.0	<5.0	
04/14/2006	<3,000	<200	300	<5.0	<5.0	<5.0	<5.0	<5.0	
7/19/2006	<15,000	<1,000	4,200	<25	<25	45	<25	<25	
1/15/2007	<300	52	67	<0.50	<0.50	0.88	<0.50	<0.50	
4/18/2007	<300	120	130	<0.50	<0.50	1.9	<0.50	<0.50	
7/17/2007	<300	110	96	<0.50	<0.50	1.2	<0.50	<0.50	
10/11/2007	<300	350	130	<0.50	<0.50	1.7	<0.50	<0.50	
1/8/2008	<300	59	49	<0.50	<0.50	0.80	<0.50	<0.50	
4/8/2008	<300	110	32	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2008	<300	62	13	<0.50	<0.50	<0.50	<0.50	<0.50	
11/17/2008	<300	24	14	<0.50	<0.50	<0.50	<0.50	<0.50	
2/3/2009	<300	17	16	<0.50	<0.50	<0.50	<0.50	<0.50	
5/12/2009	<300	18	30	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2009	<300	28	7.5	<0.50	<0.50	<0.50	<0.50	<0.50	
2/18/2010	<300	37	12	<0.50	<0.50	<0.50	<0.50	<0.50	
7/23/2010	<300	53	8.2	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2011	<300	23	4.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2011	<300	<10	3.6	<0.50	<0.50	<0.50	<0.50	<0.50	
2/17/2012	<300	<10	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
8/30/2012	<150	<10	1.9	<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 = Diisopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

Footnotes:

a = The continuing calibration verification for ethanol was outside of client contractual acceptance limits. However, it was within method acceptance limits. The data should still be considered useful for its intended purpose

b = Sample taken from VOA vial with air bubble > 6mm diameter

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 #2111, 1156 Davis St, San Leandro, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
7/20/2000	West-Northwest	0.006
9/19/2000	West-Northwest	0.004
12/21/2000	West-Northwest	0.004
3/13/2001	West-Northwest	0.005
5/30/2001	West-Northwest	0.004
9/18/2001	West-Northwest	0.003
12/28/2001	West-Northwest	0.003
3/14/2002	West	0.004
4/23/2002	West	0.006
7/17/2002	West	0.003
10/9/2002	West	0.002
1/13/2003	Southwest	0.0043
4/7/2003	West-Northwest	0.009 to 0.011
7/9/2003	West-Northwest	0.004
10/1/2003	West	0.002
2/5/2004	West	0.004
4/5/2004	West-Southwest	0.004
7/13/2004	West-Southwest	0.003
11/4/2004	West	0.003
1/20/2005	West	0.009
4/11/2005	North to West	0.009 to 0.01
8/1/2005	West to Northwest	0.006 to 0.004
10/21/2005	West	0.008
1/18/2006	North and West	0.01
4/14/2006	South	0.008
7/19/2006	Northwest to Southwest	0.004 to 0.008
10/24/2006	West	0.003
1/15/2007	Southwest	0.004
4/18/2007	West	0.009
7/17/2007	Southeast	0.05
10/11/2007	West	0.01
1/8/2008	West	0.008
4/8/2008	West	0.006
8/20/2008	West	0.006
11/17/2008	South-Southeast	0.05
2/3/2009	South-Southeast	0.01
5/12/2009	North to West	0.004
8/13/2009	South	0.006
2/18/2010	West-Southwest	0.001
7/23/2010	West-Southwest	0.002
2/10/2011	West	0.002
8/30/2011	West	0.01
2/17/2012	North to West	0.008
8/30/2012	West	0.005

Table 3. Historical Groundwater Gradient - Direction and Magnitude
ARCO Service Station #2111, 1156 Davis St, San Leandro, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
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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 turbidity¹. 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	± 0.2°C (± 0.36°F)
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 turbidity¹. 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.

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
AND
NON-HAZARDOUS WASTE DATA FORM



GROUNDWATER SAMPLING DATA SHEET

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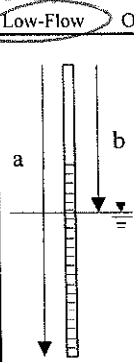
Project: BP 211 Project No.: 06-98-615 Date: 8-30-12
 Field Representative: JB/AM
 Well ID: MW-8 Start Time: 1012 End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT _____ Disp. Bailer _____ 120V Pump _____ Flow Cell
 Disp. Tubing _____ 12V Pump _____ Peristaltic Pump _____ Other/ID#: _____

WELL HEAD INTEGRITY (cap, lock, vault, etc.) _____ Comments: _____
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD _____ Predetermined Well Volume Low-Flow _____ Other: _____ (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter Unit Volume (gal/ft) (circle one)					Previous Low-Flow Purge Rate: _____ (lpm)	
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other: _____	Total Well Depth (a): <u>26.67</u> (ft)	
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	_____ (____)	Initial Depth to Water (b): <u>16.18</u> (ft)	
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2: <u>21.41</u> (ft)	
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8: <u>1.30</u> (ft)	
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate: <u>0.25</u> (Lpm)*	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments: _____	
Three Casing Volumes = WCV x 3: _____ (gal)					*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.	
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						



GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1014	0.0	23.06	7.25	0.651	3.37	20	16.5	
1016	0.5	22.08	7.00	0.688	2.21	-8	6	
1018	1.0	21.70	6.95	0.688	1.68	-18	-	
1020	1.5	21.63	6.93	0.682	1.48	-22	-	
1022	2.0	21.61	6.92	0.685	1.32	-24	-	
1024	2.5	21.58	6.92	0.685	1.23	-25	0.0	

Previous Stabilized Parameters _____

PURGE COMPLETION RECORD Low Flow & Parameters Stable _____ 3 Casing Volumes & Parameters Stable _____ 5 Casing Volumes
 Other: _____

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: <u>10.13</u> (ft)	Parameter	Time	Measurement
Sample Collected Via: _____ Disp. Bailer _____ Dedicated Pump Tubing	DO (mg/L)	1024	1.23
<input checked="" type="checkbox"/> Disp. Pump Tubing _____ Other: _____	Ferrous Iron (mg/L)		
Sample ID: <u>MW-8</u> Sample Collection Time: <u>1025</u> (24:00)	Redox Potential (mV)	1024	-25
Containers (#): <u>6</u> VOA (<input checked="" type="checkbox"/> preserved or _____ unpreserved) _____ Liter Amber	Alkalinity (mg/L)		
Other: _____	Other: _____		
Other: _____	Other: _____		

Signature: [Signature]



GROUNDWATER SAMPLING DATA SHEET

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Project: BP 2111 Project No.: 06-08-615 Date: 8/30/12
 Field Representative: JR/AN
 Well ID: MW-3 Start Time: 0915 End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT Disp. Bailer 120V Pump Flow Cell
 Disp. Tubing 12V Pump Peristaltic Pump Other/ID#: _____

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments: _____
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: _____ (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter Unit Volume (gal/ft) (circle one)					Previous Low-Flow Purge Rate: _____ (lpm)	
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other: _____	Total Well Depth (a): <u>26.40</u> (ft)	
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	" ()	Initial Depth to Water (b): <u>17.5</u> (ft)	
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2: <u>21.77</u> (ft)	
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8: <u>1.5</u> (ft)	
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate: <u>0.25</u> (Lpm)*	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments: _____	
Three Casing Volumes = WCV x 3: _____ (gal)					*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.	
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						

GROUNDWATER STABILIZATION PARAMETER RECORD								
Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS/cm	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0917	0.0	21.32	7.16	0.575	2.32	129	0.0	
0919	0.5	21.29	7.15	0.575	2.27	129	-	
0921	1.0	21.25	7.13	0.579	2.99	128	-	
0923	1.5	21.23	7.12	0.572	1.70	126	-	
0925	2.0	21.17	7.11	0.571	1.69	125	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD Low Flow & Parameters Stable 3 Casing Volumes & Parameters Stable 5 Casing Volumes
 Other: _____

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: <u>17.23</u> (ft)		Parameter	Time
Sample Collected Via: <input type="checkbox"/> Disp. Bailer <input type="checkbox"/> Dedicated Pump Tubing		DO (mg/L)	<u>0925</u>
<input checked="" type="checkbox"/> Disp. Pump Tubing Other: _____		Ferrous Iron (mg/L)	
Sample ID: <u>MW-3</u>	Sample Collection Time: <u>0929</u> (24:00)	Redox Potential (mV)	<u>0925</u> <u>125</u>
Containers (#): <u>6</u> VOA (<input checked="" type="checkbox"/> preserved or <input type="checkbox"/> unpreserved) <input type="checkbox"/> Liter Amber		Alkalinity (mg/L)	
Other: _____		Other:	
Other: _____		Other:	

Signature: _____



GROUNDWATER SAMPLING DATA SHEET

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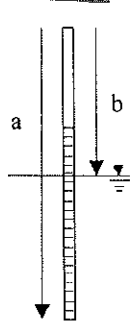
Project: BP 211 Project No.: 06-09-615 Date: 8-30-12
 Field Representative: JR/AM
 Well ID: MW-4 Start Time: 0845 End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT Disp. Bailer 120V Pump Flow Cell
 Disp. Tubing 12V Pump Peristaltic Pump Other/ID#: _____

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments: _____
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: _____ (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter Unit Volume (gal/ft) (circle one)					Previous Low-Flow Purge Rate: _____ (lpm)	
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other: _____	Total Well Depth (a): <u>21.68</u> (ft)	
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	____" (____)	Initial Depth to Water (b): <u>16.18</u> (ft)	
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2: <u>18.93</u> (ft)	
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8: <u>0.68</u> (ft)	
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate: <u>0.25</u> (Lpm)*	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments: _____	
Three Casing Volumes = WCV x 3: _____ (gal)					*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.	
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						



GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS/cm	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0847	0.0	20.88	7.20	0.681	2.92	129	0.0	
0849	0.5	21.15	7.06	0.681	2.51	128	-	
0851	1.0	21.28	7.03	0.679	2.23	127	-	
0853	1.5	21.37	7.02	0.678	1.83	124	-	
0855	2.0	21.40	7.01	0.678	1.64	122	-	
0857	2.5	21.42	7.02	0.675	1.54	119	0.0	

Previous Stabilized Parameters _____

PURGE COMPLETION RECORD Low Flow & Parameters Stable 3 Casing Volumes & Parameters Stable 5 Casing Volumes
 Other: _____

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: <u>16.23</u> (ft)		Parameter	Time
Sample Collected Via: <input type="checkbox"/> Disp. Bailer <input type="checkbox"/> Dedicated Pump Tubing		DO (mg/L)	<u>0857</u> <u>1.54</u>
<input checked="" type="checkbox"/> Disp. Pump Tubing Other: _____		Ferrous Iron (mg/L)	
Sample ID: <u>MW-4</u> Sample Collection Time: <u>0859</u> (24:00)		Redox Potential (mV)	<u>0857</u> <u>119</u>
Containers (#): <u>6</u> VOA (<input checked="" type="checkbox"/> preserved or <input type="checkbox"/> unpreserved) <input type="checkbox"/> Liter Amber		Alkalinity (mg/L)	
Other: _____		Other:	
Other: _____		Other:	

Signature:



GROUNDWATER SAMPLING DATA SHEET

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Project: BP 2111 Project No.: 06-88-615 Date: 8-30-12
 Field Representative: JR/AM
 Well ID: MW-6 Start Time: 1132 End Time: Total Time (minutes):

PURGE EQUIPMENT Disp. Bailer 120V Pump Flow Cell
 Disp. Tubing 12V Pump Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter Unit Volume (gal/ft) (circle one)					Previous Low-Flow Purge Rate: (lpm)	
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other:	Total Well Depth (a):	<u>19.63</u> (ft)
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	" ()	Initial Depth to Water (b):	<u>14.22</u> (ft)
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2: <u>16.92</u> (ft)	
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8: <u>0.67</u> (ft)	
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate: <u>0.25</u> (Lpm)*	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments: _____	
Three Casing Volumes = WCV x 3: _____ (gal)					*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.	
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS or μmS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
<u>1136</u>	<u>0.0</u>	<u>23.34</u>	<u>7.16</u>	<u>0.609</u>	<u>3.34</u>	<u>-25</u>	<u>344</u>	
<u>1140</u>	<u>0.5</u>	<u>24.46</u>	<u>7.02</u>	<u>0.612</u>	<u>2.35</u>	<u>-5</u>	<u>-</u>	
<u>1142</u>	<u>1.0</u>	<u>24.17</u>	<u>6.99</u>	<u>0.613</u>	<u>1.86</u>	<u>3</u>	<u>-</u>	
<u>1144</u>	<u>1.5</u>	<u>24.10</u>	<u>6.98</u>	<u>0.609</u>	<u>1.57</u>	<u>8</u>	<u>-</u>	
<u>1146</u>	<u>2.0</u>	<u>23.95</u>	<u>6.97</u>	<u>0.612</u>	<u>1.54</u>	<u>12</u>	<u>356</u>	

Previous Stabilized Parameters

PURGE COMPLETION RECORD Low Flow & Parameters Stable 3 Casing Volumes & Parameters Stable 5 Casing Volumes
 Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 15.11 (ft)
 Sample Collected Via: Disp. Bailer Dedicated Pump Tubing
 Disp. Pump Tubing Other:
 Sample ID: MW-6 Sample Collection Time: 1150 (24:00)
 Containers (#): 6 VOA (preserved or unpreserved) Liter Amber
 Other: Other: Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)	<u>1146</u>	<u>1.54</u>
Ferrous Iron (mg/L)		
Redox Potential (mV)	<u>1146</u>	<u>12</u>
Alkalinity (mg/L)		
Other:		
Other:		

Signature:



GROUNDWATER SAMPLING DATA SHEET

Page 8 of 9

Project: BP 2111 Project No.: 06-08-615 Date: 8/30/12
 Field Representative: JR/AM
 Well ID: MW-7 Start Time: 1109 End Time: _____ Total Time (minutes): _____

PURGE EQUIPMENT Disp. Bailer 120V Pump Flow Cell
 Disp. Tubing 12V Pump Peristaltic Pump Other/ID#: _____

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments: _____
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: _____ (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter	Unit Volume (gal/ft)	(circle one)			Previous Low-Flow Purge Rate:	(lpm)
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other: _____	Total Well Depth (a):	<u>26.53</u> (ft)
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	" ()	Initial Depth to Water (b):	<u>15.94</u> (ft)
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2:	<u>21.23</u> (ft)
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8:	<u>1.32</u> (ft)
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate:	<u>0.25</u> (Lpm)*
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments: _____	
Three Casing Volumes = WCV x 3: _____ (gal)						
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						

*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.

Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS or (mS)	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1111	0.0	26.70	7.27	0.760	3.74	-94	7.9	
1113	0.5	22.55	7.19	0.804	7.98	-116	-	
1115	1.0	22.31	7.17	0.801	1.54	-122	-	
1117	1.5	22.31	7.16	0.800	1.25	-127	-	
1119	2.0	22.23	7.15	0.800	1.15	-129	0.0	

Previous Stabilized Parameters _____

PURGE COMPLETION RECORD Low Flow & Parameters Stable 3 Casing Volumes & Parameters Stable 5 Casing Volumes
 Other: _____

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: <u>16.36</u> (ft)	Parameter	Time	Measurement
Sample Collected Via: <input type="checkbox"/> Disp. Bailer <input type="checkbox"/> Dedicated Pump Tubing	DO (mg/L)	<u>1119</u>	<u>1.15</u>
<input checked="" type="checkbox"/> Disp. Pump Tubing Other: _____	Ferrous Iron (mg/L)		
Sample ID: <u>MW-7</u> Sample Collection Time: <u>1123</u> (24:00)	Redox Potential (mV)	<u>1119</u>	<u>-129</u>
Containers (#): <u>6</u> VOA (<input checked="" type="checkbox"/> preserved or <input type="checkbox"/> unpreserved) <input type="checkbox"/> Liter Amber	Alkalinity (mg/L)		
Other: _____	Other: _____		
Other: _____	Other: _____		

Signature: _____ Revision: 8/19/11



GROUNDWATER SAMPLING DATA SHEET

Page 9 of 9

Project: BP 2111 Project No.: 06-08-615 Date: 8/30/12
 Field Representative: JR/AM
 Well ID: MW-8 Start Time: 1043 End Time: Total Time (minutes):

PURGE EQUIPMENT Disp. Bailer 120V Pump Flow Cell
 Disp. Tubing 12V Pump Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
 Good Improvement Needed (circle one)

PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: (circle one)

PREDETERMINED WELL VOLUME					LOW-FLOW	
Casing Diameter Unit Volume (gal/ft) (circle one)					Previous Low-Flow Purge Rate: (lpm)	
1" (0.04)	1.25" (0.08)	2" (0.17)	3" (0.38)	Other:	Total Well Depth (a):	<u>34.65</u> (ft)
4" (0.66)	6" (1.50)	8" (2.60)	12" (5.81)	" ()	Initial Depth to Water (b):	<u>16.84</u> (ft)
Total Well Depth (a): _____ (ft)					Pump In-take Depth = b + (a-b)/2:	
Initial Depth to Water (b): _____ (ft)					Maximum Allowable Drawdown = (a-b)/8:	
Water Column Height (WCH) = (a - b): _____ (ft)					Low-Flow Purge Rate:	
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)					Comments:	
Three Casing Volumes = WCV x 3: _____ (gal)					*Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.	
Five Casing Volumes = WCV x 5: _____ (gal)						
Pump Depth (if pump used): _____ (ft)						

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Volume (L)	Temperature °C	pH	Conductivity μS or cmS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
1045	0.0	23.20	7.26	0.621	3.40	25	1.5	
1047	0.5	21.78	7.09	0.639	2.13	32	-	
1049	1.0	21.46	7.03	0.628	1.71	37	-	
1051	1.5	21.80	7.02	0.627	1.53	38	0.0	

Previous Stabilized Parameters

PURGE COMPLETION RECORD Low Flow & Parameters Stable 3 Casing Volumes & Parameters Stable 5 Casing Volumes
 Other:

SAMPLE COLLECTION RECORD

SAMPLE COLLECTION RECORD		GEOCHEMICAL PARAMETERS	
Depth to Water at Sampling: <u>16.90</u> (ft)		Parameter	Time
Sample Collected Via: <input type="checkbox"/> Disp. Bailer <input type="checkbox"/> Dedicated Pump Tubing		DO (mg/L)	<u>1051</u>
<input checked="" type="checkbox"/> Disp. Pump Tubing Other:		Ferrous Iron (mg/L)	
Sample ID: <u>MW-8</u> Sample Collection Time: <u>1055</u> (24:00)		Redox Potential (mV)	<u>38</u>
Containers (#): <u>6</u> VOA (<input checked="" type="checkbox"/> preserved or <input type="checkbox"/> unpreserved) <input type="checkbox"/> Liter Amber		Alkalinity (mg/L)	
Other: _____ Other: _____		Other:	
Other: _____ Other: _____		Other:	

Signature:

NO. 689958

NON-HAZARDOUS WASTE DATA FORM

BESI # _____

GENERATOR

Generator's Name and Mailing Address BP WEST COAST PRODUCTS, LLC P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688	Generator's Site Address (if different than mailing address) BP 2111 1156 Davis St. San Leandro, CA
---	--

Generator's Phone: 949-460-5200

Container type removed from site: <input type="checkbox"/> Drums <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Roll-off Truck <input type="checkbox"/> Dump Truck <input type="checkbox"/> Other _____	Container type transported to receiving facility: <input type="checkbox"/> Drums <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Roll-off Truck <input type="checkbox"/> Dump Truck <input type="checkbox"/> Other _____
---	---


Quantity <u>4.5 gallons</u>	Quantity _____ Volume _____
-----------------------------	-----------------------------

WASTE DESCRIPTION <u>NON-HAZARDOUS WATER</u>	GENERATING PROCESS <u>WELL PURGING / DECON WATER</u>
--	--

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. <u>WATER</u>		<u>99-100%</u>	3. _____		
2. <u>TPH</u>		<u><1%</u>	4. _____		

Waste Profile _____ PROPERTIES: pH 7-10 SOLID LIQUID SLUDGE SLURRY OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name <u>Alex Martinez</u>	Signature 	Month Day Year <u>9 7 12</u>
--	---	-------------------------------------

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name <u>BROADBENT & ASSOCIATES, INC ></u>	Phone# <u>530-566-1400</u>
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Transporter 1 Printed/Typed Name <u>Alex Martinez</u>	Signature 	Month Day Year <u>9 7 12</u>
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Transporter Acknowledgment of Receipt of Materials	Phone#
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Transporter 2 Company Name	Signature	Month Day Year
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Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address INSTRAT, INC. 1105 AIRPORT RD. RIO VISTA, CA 94571	Phone# <u>530-753-1829</u>
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Printed/Typed Name	Signature	Month Day Year
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Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

APPENDIX C

LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-22152-1
Client Project/Site: ARCO 2111, San Leandro

For:
Broadbent & Associates, Inc.
875 Cotting Lane
Suite G
Vacaville, California 95688

Attn: Kristene Tidwell



*Authorized for release by:
9/14/2012 8:54:20 AM*

Pat Abe
Project Manager I
pat.abe@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-22152-1	MW-1	Water	08/30/12 09:56	08/31/12 09:40
440-22152-2	MW-2	Water	08/30/12 10:25	08/31/12 09:40
440-22152-3	MW-3	Water	08/30/12 09:29	08/31/12 09:40
440-22152-4	MW-4	Water	08/30/12 08:59	08/31/12 09:40
440-22152-5	MW-5	Water	08/30/12 08:20	08/31/12 09:40
440-22152-6	MW-6	Water	08/30/12 11:50	08/31/12 09:40
440-22152-7	MW-7	Water	08/30/12 11:23	08/31/12 09:40
440-22152-8	MW-8	Water	08/30/12 10:55	08/31/12 09:40

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Case Narrative

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Job ID: 440-22152-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-22152-1

Comments

No additional comments.

Receipt

The samples were received on 8/31/2012 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

No analytical or quality issues were noted.

GC VOA

No analytical or quality issues were noted.

VOA Prep

No analytical or quality issues were noted.



Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-1

Lab Sample ID: 440-22152-1

Date Collected: 08/30/12 09:56

Matrix: Water

Date Received: 08/31/12 09:40

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/10/12 23:32	1
1,2-Dichloroethane	ND		0.50	ug/L			09/10/12 23:32	1
Benzene	ND		0.50	ug/L			09/10/12 23:32	1
Ethanol	ND		150	ug/L			09/10/12 23:32	1
Ethylbenzene	ND		0.50	ug/L			09/10/12 23:32	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/10/12 23:32	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/10/12 23:32	1
m,p-Xylene	ND		1.0	ug/L			09/10/12 23:32	1
Methyl-t-Butyl Ether (MTBE)	0.74		0.50	ug/L			09/10/12 23:32	1
o-Xylene	ND		0.50	ug/L			09/10/12 23:32	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/10/12 23:32	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/10/12 23:32	1
Toluene	ND		0.50	ug/L			09/10/12 23:32	1
Xylenes, Total	ND		1.0	ug/L			09/10/12 23:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		80 - 120		09/10/12 23:32	1
Dibromofluoromethane (Surr)	94		80 - 120		09/10/12 23:32	1
Toluene-d8 (Surr)	93		80 - 120		09/10/12 23:32	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/06/12 23:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		65 - 140		09/06/12 23:31	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-2

Lab Sample ID: 440-22152-2

Date Collected: 08/30/12 10:25

Matrix: Water

Date Received: 08/31/12 09:40

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/10/12 22:18	1
1,2-Dichloroethane	ND		0.50	ug/L			09/10/12 22:18	1
Benzene	ND		0.50	ug/L			09/10/12 22:18	1
Ethanol	ND		150	ug/L			09/10/12 22:18	1
Ethylbenzene	ND		0.50	ug/L			09/10/12 22:18	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/10/12 22:18	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/10/12 22:18	1
m,p-Xylene	ND		1.0	ug/L			09/10/12 22:18	1
Methyl-t-Butyl Ether (MTBE)	2.4		0.50	ug/L			09/10/12 22:18	1
o-Xylene	ND		0.50	ug/L			09/10/12 22:18	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/10/12 22:18	1
tert-Butyl alcohol (TBA)	190		10	ug/L			09/10/12 22:18	1
Toluene	ND		0.50	ug/L			09/10/12 22:18	1
Xylenes, Total	ND		1.0	ug/L			09/10/12 22:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		80 - 120		09/10/12 22:18	1
Dibromofluoromethane (Surr)	95		80 - 120		09/10/12 22:18	1
Toluene-d8 (Surr)	94		80 - 120		09/10/12 22:18	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	67		50	ug/L			09/07/12 00:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		65 - 140		09/07/12 00:00	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-3

Lab Sample ID: 440-22152-3

Date Collected: 08/30/12 09:29

Matrix: Water

Date Received: 08/31/12 09:40

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/11/12 00:33	1
1,2-Dichloroethane	ND		0.50	ug/L			09/11/12 00:33	1
Benzene	ND		0.50	ug/L			09/11/12 00:33	1
Ethanol	ND		150	ug/L			09/11/12 00:33	1
Ethylbenzene	ND		0.50	ug/L			09/11/12 00:33	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/11/12 00:33	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/11/12 00:33	1
m,p-Xylene	ND		1.0	ug/L			09/11/12 00:33	1
Methyl-t-Butyl Ether (MTBE)	0.56		0.50	ug/L			09/11/12 00:33	1
o-Xylene	ND		0.50	ug/L			09/11/12 00:33	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/11/12 00:33	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/11/12 00:33	1
Toluene	ND		0.50	ug/L			09/11/12 00:33	1
Xylenes, Total	ND		1.0	ug/L			09/11/12 00:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		80 - 120		09/11/12 00:33	1
Dibromofluoromethane (Surr)	106		80 - 120		09/11/12 00:33	1
Toluene-d8 (Surr)	102		80 - 120		09/11/12 00:33	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/07/12 00:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		65 - 140		09/07/12 00:27	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-4

Lab Sample ID: 440-22152-4

Date Collected: 08/30/12 08:59

Matrix: Water

Date Received: 08/31/12 09:40

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/11/12 01:02	1
1,2-Dichloroethane	ND		0.50	ug/L			09/11/12 01:02	1
Benzene	ND		0.50	ug/L			09/11/12 01:02	1
Ethanol	ND		150	ug/L			09/11/12 01:02	1
Ethylbenzene	ND		0.50	ug/L			09/11/12 01:02	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/11/12 01:02	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/11/12 01:02	1
m,p-Xylene	ND		1.0	ug/L			09/11/12 01:02	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			09/11/12 01:02	1
o-Xylene	ND		0.50	ug/L			09/11/12 01:02	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/11/12 01:02	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/11/12 01:02	1
Toluene	ND		0.50	ug/L			09/11/12 01:02	1
Xylenes, Total	ND		1.0	ug/L			09/11/12 01:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		80 - 120		09/11/12 01:02	1
Dibromofluoromethane (Surr)	104		80 - 120		09/11/12 01:02	1
Toluene-d8 (Surr)	101		80 - 120		09/11/12 01:02	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/07/12 00:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		65 - 140		09/07/12 00:55	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-5
Date Collected: 08/30/12 08:20
Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-5
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/11/12 01:31	1
1,2-Dichloroethane	ND		0.50	ug/L			09/11/12 01:31	1
Benzene	ND		0.50	ug/L			09/11/12 01:31	1
Ethanol	ND		150	ug/L			09/11/12 01:31	1
Ethylbenzene	ND		0.50	ug/L			09/11/12 01:31	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/11/12 01:31	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/11/12 01:31	1
m,p-Xylene	ND		1.0	ug/L			09/11/12 01:31	1
Methyl-t-Butyl Ether (MTBE)	1.5		0.50	ug/L			09/11/12 01:31	1
o-Xylene	ND		0.50	ug/L			09/11/12 01:31	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/11/12 01:31	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/11/12 01:31	1
Toluene	ND		0.50	ug/L			09/11/12 01:31	1
Xylenes, Total	ND		1.0	ug/L			09/11/12 01:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		80 - 120		09/11/12 01:31	1
Dibromofluoromethane (Surr)	104		80 - 120		09/11/12 01:31	1
Toluene-d8 (Surr)	102		80 - 120		09/11/12 01:31	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/07/12 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		65 - 140		09/07/12 01:24	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-6
Date Collected: 08/30/12 11:50
Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-6
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/11/12 02:00	1
1,2-Dichloroethane	ND		0.50	ug/L			09/11/12 02:00	1
Benzene	ND		0.50	ug/L			09/11/12 02:00	1
Ethanol	ND		150	ug/L			09/11/12 02:00	1
Ethylbenzene	ND		0.50	ug/L			09/11/12 02:00	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/11/12 02:00	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/11/12 02:00	1
m,p-Xylene	ND		1.0	ug/L			09/11/12 02:00	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			09/11/12 02:00	1
o-Xylene	ND		0.50	ug/L			09/11/12 02:00	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/11/12 02:00	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/11/12 02:00	1
Toluene	ND		0.50	ug/L			09/11/12 02:00	1
Xylenes, Total	ND		1.0	ug/L			09/11/12 02:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		80 - 120		09/11/12 02:00	1
Dibromofluoromethane (Surr)	99		80 - 120		09/11/12 02:00	1
Toluene-d8 (Surr)	98		80 - 120		09/11/12 02:00	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/07/12 02:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		65 - 140		09/07/12 02:48	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-7
Date Collected: 08/30/12 11:23
Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-7
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		10	ug/L			09/10/12 16:12	20
1,2-Dichloroethane	ND		10	ug/L			09/10/12 16:12	20
Benzene	ND		10	ug/L			09/10/12 16:12	20
Ethanol	ND		3000	ug/L			09/10/12 16:12	20
Ethylbenzene	ND		10	ug/L			09/10/12 16:12	20
Ethyl-t-butyl ether (ETBE)	ND		10	ug/L			09/10/12 16:12	20
Isopropyl Ether (DIPE)	ND		10	ug/L			09/10/12 16:12	20
m,p-Xylene	ND		20	ug/L			09/10/12 16:12	20
Methyl-t-Butyl Ether (MTBE)	210		10	ug/L			09/10/12 16:12	20
o-Xylene	ND		10	ug/L			09/10/12 16:12	20
Tert-amyl-methyl ether (TAME)	ND		10	ug/L			09/10/12 16:12	20
tert-Butyl alcohol (TBA)	14000		200	ug/L			09/10/12 16:12	20
Toluene	ND		10	ug/L			09/10/12 16:12	20
Xylenes, Total	ND		20	ug/L			09/10/12 16:12	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		80 - 120		09/10/12 16:12	20
Dibromofluoromethane (Surr)	101		80 - 120		09/10/12 16:12	20
Toluene-d8 (Surr)	114		80 - 120		09/10/12 16:12	20

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	230		50	ug/L			09/07/12 03:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		65 - 140		09/07/12 03:17	1

Client Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-8

Lab Sample ID: 440-22152-8

Date Collected: 08/30/12 10:55

Matrix: Water

Date Received: 08/31/12 09:40

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/10/12 16:39	1
1,2-Dichloroethane	ND		0.50	ug/L			09/10/12 16:39	1
Benzene	ND		0.50	ug/L			09/10/12 16:39	1
Ethanol	ND		150	ug/L			09/10/12 16:39	1
Ethylbenzene	ND		0.50	ug/L			09/10/12 16:39	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/10/12 16:39	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/10/12 16:39	1
m,p-Xylene	ND		1.0	ug/L			09/10/12 16:39	1
Methyl-t-Butyl Ether (MTBE)	1.9		0.50	ug/L			09/10/12 16:39	1
o-Xylene	ND		0.50	ug/L			09/10/12 16:39	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/10/12 16:39	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/10/12 16:39	1
Toluene	ND		0.50	ug/L			09/10/12 16:39	1
Xylenes, Total	ND		1.0	ug/L			09/10/12 16:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		09/10/12 16:39	1
Dibromofluoromethane (Surr)	100		80 - 120		09/10/12 16:39	1
Toluene-d8 (Surr)	108		80 - 120		09/10/12 16:39	1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/07/12 03:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		65 - 140		09/07/12 03:46	1

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-1

Date Collected: 08/30/12 09:56

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/10/12 23:32	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/06/12 23:31	PH	TAL IRV

Client Sample ID: MW-2

Date Collected: 08/30/12 10:25

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/10/12 22:18	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 00:00	PH	TAL IRV

Client Sample ID: MW-3

Date Collected: 08/30/12 09:29

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/11/12 00:33	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 00:27	PH	TAL IRV

Client Sample ID: MW-4

Date Collected: 08/30/12 08:59

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/11/12 01:02	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 00:55	PH	TAL IRV

Client Sample ID: MW-5

Date Collected: 08/30/12 08:20

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/11/12 01:31	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 01:24	PH	TAL IRV

Client Sample ID: MW-6

Date Collected: 08/30/12 11:50

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50995	09/11/12 02:00	RM	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 02:48	PH	TAL IRV

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Client Sample ID: MW-7

Date Collected: 08/30/12 11:23

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		20	10 mL	10 mL	50803	09/10/12 16:12	YK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 03:17	PH	TAL IRV

Client Sample ID: MW-8

Date Collected: 08/30/12 10:55

Date Received: 08/31/12 09:40

Lab Sample ID: 440-22152-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	50803	09/10/12 16:39	YK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	50176	09/07/12 03:46	PH	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-50803/4

Matrix: Water

Analysis Batch: 50803

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/10/12 08:57	1
1,2-Dichloroethane	ND		0.50	ug/L			09/10/12 08:57	1
Benzene	ND		0.50	ug/L			09/10/12 08:57	1
Ethanol	ND		150	ug/L			09/10/12 08:57	1
Ethylbenzene	ND		0.50	ug/L			09/10/12 08:57	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/10/12 08:57	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/10/12 08:57	1
m,p-Xylene	ND		1.0	ug/L			09/10/12 08:57	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			09/10/12 08:57	1
o-Xylene	ND		0.50	ug/L			09/10/12 08:57	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/10/12 08:57	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/10/12 08:57	1
Toluene	ND		0.50	ug/L			09/10/12 08:57	1
Xylenes, Total	ND		1.0	ug/L			09/10/12 08:57	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		80 - 120		09/10/12 08:57	1
Dibromofluoromethane (Surr)	100		80 - 120		09/10/12 08:57	1
Toluene-d8 (Surr)	97		80 - 120		09/10/12 08:57	1

Lab Sample ID: LCS 440-50803/5

Matrix: Water

Analysis Batch: 50803

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	25.0	27.3		ug/L		109	75 - 125
1,2-Dichloroethane	25.0	25.0		ug/L		100	60 - 140
Benzene	25.0	27.3		ug/L		109	70 - 120
Ethanol	250	231		ug/L		92	40 - 155
Ethylbenzene	25.0	27.4		ug/L		109	75 - 125
Ethyl-t-butyl ether (ETBE)	25.0	25.0		ug/L		100	65 - 135
Isopropyl Ether (DIPE)	25.0	26.6		ug/L		106	60 - 135
m,p-Xylene	50.0	50.7		ug/L		101	75 - 125
Methyl-t-Butyl Ether (MTBE)	25.0	25.6		ug/L		102	60 - 135
o-Xylene	25.0	25.6		ug/L		102	75 - 125
Tert-amyl-methyl ether (TAME)	25.0	26.6		ug/L		106	60 - 135
tert-Butyl alcohol (TBA)	125	122		ug/L		98	70 - 135
Toluene	25.0	26.2		ug/L		105	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
Toluene-d8 (Surr)	102		80 - 120

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-22629-E-11 MS

Matrix: Water

Analysis Batch: 50803

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	26.5		ug/L		106	70 - 130
1,2-Dichloroethane	ND		25.0	23.0		ug/L		92	60 - 140
Benzene	0.79		25.0	27.5		ug/L		107	65 - 125
Ethanol	ND		250	249		ug/L		100	40 - 155
Ethylbenzene	14		25.0	40.9		ug/L		107	65 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	23.6		ug/L		95	60 - 135
Isopropyl Ether (DIPE)	ND		25.0	25.3		ug/L		101	60 - 140
m,p-Xylene	18		50.0	65.5		ug/L		95	65 - 130
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.8		ug/L		103	55 - 145
o-Xylene	16		25.0	40.3		ug/L		97	65 - 125
Tert-amyl-methyl ether (TAME)	ND		25.0	26.2		ug/L		105	60 - 140
tert-Butyl alcohol (TBA)	ND		125	122		ug/L		97	65 - 140
Toluene	ND		25.0	25.7		ug/L		103	70 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		80 - 120
Toluene-d8 (Surr)	108		80 - 120

Lab Sample ID: 440-22629-E-11 MSD

Matrix: Water

Analysis Batch: 50803

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	25.9		ug/L		104	70 - 130	2	25
1,2-Dichloroethane	ND		25.0	23.5		ug/L		94	60 - 140	2	20
Benzene	0.79		25.0	26.4		ug/L		102	65 - 125	4	20
Ethanol	ND		250	247		ug/L		99	40 - 155	1	30
Ethylbenzene	14		25.0	42.5		ug/L		113	65 - 130	4	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	22.8		ug/L		91	60 - 135	3	25
Isopropyl Ether (DIPE)	ND		25.0	24.7		ug/L		99	60 - 140	2	25
m,p-Xylene	18		50.0	68.2		ug/L		101	65 - 130	4	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	25.0		ug/L		100	55 - 145	3	25
o-Xylene	16		25.0	42.3		ug/L		105	65 - 125	5	20
Tert-amyl-methyl ether (TAME)	ND		25.0	24.9		ug/L		99	60 - 140	5	30
tert-Butyl alcohol (TBA)	ND		125	125		ug/L		100	65 - 140	2	25
Toluene	ND		25.0	24.8		ug/L		99	70 - 125	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120
Toluene-d8 (Surr)	105		80 - 120

Lab Sample ID: MB 440-50995/3

Matrix: Water

Analysis Batch: 50995

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50	ug/L			09/10/12 20:22	1

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-50995/3

Matrix: Water

Analysis Batch: 50995

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		0.50	ug/L			09/10/12 20:22	1
Benzene	ND		0.50	ug/L			09/10/12 20:22	1
Ethanol	ND		150	ug/L			09/10/12 20:22	1
Ethylbenzene	ND		0.50	ug/L			09/10/12 20:22	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	ug/L			09/10/12 20:22	1
Isopropyl Ether (DIPE)	ND		0.50	ug/L			09/10/12 20:22	1
m,p-Xylene	ND		1.0	ug/L			09/10/12 20:22	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	ug/L			09/10/12 20:22	1
o-Xylene	ND		0.50	ug/L			09/10/12 20:22	1
Tert-amyl-methyl ether (TAME)	ND		0.50	ug/L			09/10/12 20:22	1
tert-Butyl alcohol (TBA)	ND		10	ug/L			09/10/12 20:22	1
Toluene	ND		0.50	ug/L			09/10/12 20:22	1
Xylenes, Total	ND		1.0	ug/L			09/10/12 20:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		80 - 120		09/10/12 20:22	1
Dibromofluoromethane (Surr)	96		80 - 120		09/10/12 20:22	1
Toluene-d8 (Surr)	95		80 - 120		09/10/12 20:22	1

Lab Sample ID: LCS 440-50995/4

Matrix: Water

Analysis Batch: 50995

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	25.0	23.9		ug/L		96	75 - 125
1,2-Dichloroethane	25.0	22.6		ug/L		90	60 - 140
Benzene	25.0	24.9		ug/L		99	70 - 120
Ethanol	250	246		ug/L		98	40 - 155
Ethylbenzene	25.0	25.8		ug/L		103	75 - 125
Ethyl-t-butyl ether (ETBE)	25.0	20.4		ug/L		82	65 - 135
Isopropyl Ether (DIPE)	25.0	22.4		ug/L		90	60 - 135
m,p-Xylene	50.0	51.1		ug/L		102	75 - 125
Methyl-t-Butyl Ether (MTBE)	25.0	20.8		ug/L		83	60 - 135
o-Xylene	25.0	24.3		ug/L		97	75 - 125
Tert-amyl-methyl ether (TAME)	25.0	20.9		ug/L		84	60 - 135
tert-Butyl alcohol (TBA)	125	133		ug/L		107	70 - 135
Toluene	25.0	24.4		ug/L		97	70 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	94		80 - 120
Toluene-d8 (Surr)	95		80 - 120

Lab Sample ID: 440-22152-2 MS

Matrix: Water

Analysis Batch: 50995

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	24.0		ug/L		96	70 - 130

QC Sample Results

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-22152-2 MS

Matrix: Water

Analysis Batch: 50995

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
1,2-Dichloroethane	ND		25.0	23.1		ug/L		92	60 - 140
Benzene	ND		25.0	25.7		ug/L		101	65 - 125
Ethanol	ND		250	235		ug/L		94	40 - 155
Ethylbenzene	ND		25.0	25.7		ug/L		103	65 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	21.5		ug/L		86	60 - 135
Isopropyl Ether (DIPE)	ND		25.0	23.4		ug/L		93	60 - 140
m,p-Xylene	ND		50.0	49.8		ug/L		100	65 - 130
Methyl-t-Butyl Ether (MTBE)	2.4		25.0	24.4		ug/L		88	55 - 145
o-Xylene	ND		25.0	23.9		ug/L		96	65 - 125
Tert-amyl-methyl ether (TAME)	ND		25.0	22.1		ug/L		88	60 - 140
tert-Butyl alcohol (TBA)	190		125	320		ug/L		103	65 - 140
Toluene	ND		25.0	24.4		ug/L		98	70 - 125

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	90		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	97		80 - 120

Lab Sample ID: 440-22152-2 MSD

Matrix: Water

Analysis Batch: 50995

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
1,2-Dibromoethane (EDB)	ND		25.0	24.7		ug/L		99	70 - 130	3	25
1,2-Dichloroethane	ND		25.0	22.8		ug/L		91	60 - 140	1	20
Benzene	ND		25.0	25.1		ug/L		99	65 - 125	2	20
Ethanol	ND		250	244		ug/L		97	40 - 155	4	30
Ethylbenzene	ND		25.0	25.4		ug/L		102	65 - 130	1	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	21.3		ug/L		85	60 - 135	1	25
Isopropyl Ether (DIPE)	ND		25.0	22.7		ug/L		91	60 - 140	3	25
m,p-Xylene	ND		50.0	48.7		ug/L		97	65 - 130	2	25
Methyl-t-Butyl Ether (MTBE)	2.4		25.0	24.3		ug/L		88	55 - 145	0	25
o-Xylene	ND		25.0	23.6		ug/L		94	65 - 125	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	22.0		ug/L		88	60 - 140	1	30
tert-Butyl alcohol (TBA)	190		125	325		ug/L		107	65 - 140	2	25
Toluene	ND		25.0	23.9		ug/L		96	70 - 125	2	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	96		80 - 120
Toluene-d8 (Surr)	95		80 - 120

QC Sample Results

Client: Broadbent & Associates, Inc.
 Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-50176/3

Matrix: Water

Analysis Batch: 50176

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50	ug/L			09/06/12 13:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		65 - 140				09/06/12 13:17	1

Lab Sample ID: LCS 440-50176/2

Matrix: Water

Analysis Batch: 50176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	800	654		ug/L		82	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	80		65 - 140				

Lab Sample ID: 440-22307-C-1 MS

Matrix: Water

Analysis Batch: 50176

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	ND		800	700		ug/L		84	65 - 140
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	101		65 - 140						

Lab Sample ID: 440-22307-C-1 MSD

Matrix: Water

Analysis Batch: 50176

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	713		ug/L		86	65 - 140	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	96		65 - 140								

QC Association Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

GC/MS VOA

Analysis Batch: 50803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-22152-7	MW-7	Total/NA	Water	8260B/5030B	
440-22152-8	MW-8	Total/NA	Water	8260B/5030B	
440-22629-E-11 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-22629-E-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-50803/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-50803/4	Method Blank	Total/NA	Water	8260B/5030B	

Analysis Batch: 50995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-22152-1	MW-1	Total/NA	Water	8260B/5030B	
440-22152-2	MW-2	Total/NA	Water	8260B/5030B	
440-22152-2 MS	MW-2	Total/NA	Water	8260B/5030B	
440-22152-2 MSD	MW-2	Total/NA	Water	8260B/5030B	
440-22152-3	MW-3	Total/NA	Water	8260B/5030B	
440-22152-4	MW-4	Total/NA	Water	8260B/5030B	
440-22152-5	MW-5	Total/NA	Water	8260B/5030B	
440-22152-6	MW-6	Total/NA	Water	8260B/5030B	
LCS 440-50995/4	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-50995/3	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 50176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-22152-1	MW-1	Total/NA	Water	8015B/5030B	
440-22152-2	MW-2	Total/NA	Water	8015B/5030B	
440-22152-3	MW-3	Total/NA	Water	8015B/5030B	
440-22152-4	MW-4	Total/NA	Water	8015B/5030B	
440-22152-5	MW-5	Total/NA	Water	8015B/5030B	
440-22152-6	MW-6	Total/NA	Water	8015B/5030B	
440-22152-7	MW-7	Total/NA	Water	8015B/5030B	
440-22152-8	MW-8	Total/NA	Water	8015B/5030B	
440-22307-C-1 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-22307-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
LCS 440-50176/2	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-50176/3	Method Blank	Total/NA	Water	8015B/5030B	

Definitions/Glossary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 2111, San Leandro

TestAmerica Job ID: 440-22152-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arizona	State Program	9	AZ0671	10-13-12
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	07-31-12
New Mexico	State Program	6	N/A	01-31-12
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-13
USDA	Federal		P330-09-00080	06-06-14

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-22152-1

Login Number: 22152

List Number: 1

Creator: Perez, Angel

List Source: TestAmerica Irvine

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

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!**

<u>Submittal Type:</u>	GEO_WELL
<u>Report Title:</u>	3Q12 GEO_WELL 2111
<u>Facility Global ID:</u>	T0600101764
<u>Facility Name:</u>	ARCO #2111
<u>File Name:</u>	GEO_WELL.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	10/15/2012 9:49:38 AM
<u>Confirmation Number:</u>	6248920500

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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!**

<u>Submittal Type:</u>	EDF
<u>Report Title:</u>	3Q12 GW Monitoring
<u>Report Type:</u>	Monitoring Report - Semi-Annually
<u>Facility Global ID:</u>	T0600101764
<u>Facility Name:</u>	ARCO #2111
<u>File Name:</u>	440-22152-1_14 Sep 12 0951_EDF.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	10/15/2012 9:46:17 AM
<u>Confirmation Number:</u>	1978116869

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