

Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

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4:35 pm, Feb 02, 2011

Alameda County
Environmental Health

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San Ramon, CA 94583
Phone: (925) 275-3803
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31 January 2011

Re: Fourth Quarter 2010 Semi-Annual Groundwater Monitoring Report
Atlantic Richfield Company Station #2162
15135 Hesperian Boulevard, San Leandro, California
ACEH Case #RO0000190

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

Submitted by,



Chuck Carmel
Environmental Business Manager

Attachment

**Fourth Quarter 2010 Semi-Annual
Groundwater Monitoring Report**
Atlantic Richfield Company Station #2162
15135 Hesperian Blvd., San Leandro, California
ACEH Case #RO0000190

Prepared for

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

Prepared by



1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

31 January 2011

Project No. 06-88-620

31 January 2011

Project No. 06-88-620

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

Attn.: Mr. Chuck Carmel

Re: Fourth Quarter 2010 Semi-Annual Groundwater Monitoring Report, Atlantic Richfield Company Station #2162, 15135 Hesperian Boulevard, San Leandro, California; ACEH Case #RO0000190

Dear Mr. Carmel:

Provided herein is the *Fourth Quarter 2010 Semi-Annual Groundwater Monitoring Report* for Atlantic Richfield Company (a BP affiliated company) Station #2162 located at 15135 Hesperian Boulevard, San Leandro, Alameda County, California (Site). This report presents results of groundwater monitoring conducted at the Site during the Fourth Quarter of 2010.

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

Sincerely,

BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, P.E.
Senior Engineer



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Mr. Karl Busche, City of San Leandro Environmental Services Division (Submitted via GeoTracker)
Electronic copy uploaded to GeoTracker

STATION #2162 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Facility: #2162	Address:	15135 Hesperian Boulevard, San Leandro, California
Environmental Business Manager:		Mr. Chuck Carmel
Consulting Co./Contact Person:		Broadbent & Associates, Inc.(BAI)/Mr. Tom Venus, PE (530) 566-1400
Consultant Project No.:		06-88-620
Primary Agency/Regulatory ID No.:		Alameda County Environmental Health (ACEH) ACEH Case #RO0000190
Facility Permits/Permitting Agency:		NA

WORK PERFORMED THIS QUARTER (Fourth Quarter 2010):

1. Prepared and submitted *Third Quarter 2010 Status Report* (BAI, 10/05/2010).
2. Conducted groundwater monitoring/sampling for Fourth Quarter 2010. Work performed on 19 November 2010 by BAI.

WORK PROPOSED FOR NEXT QUARTER (First Quarter 2011):

1. Prepare and submit this *Fourth Quarter 2010 Semi-Annual Groundwater Monitoring Report* (contained herein).
2. No environmental field work is presently scheduled to occur at the Site during the First Quarter of 2011.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	Groundwater monitoring/sampling
Frequency of groundwater monitoring:	Semi-Annually (2Q and 4Q): MW-1 through MW-6
Frequency of groundwater sampling:	Annually (2Q): MW-1 and MW-2 Semi-Annually (2Q and 4Q): MW-3, MW-4, MW-5, MW-6
Is free product (FP) present on-site:	No
Current remediation techniques:	NA
Depth to groundwater (below TOC):	8.38 ft (MW-2) to 9.83 ft (MW-4)
General groundwater flow direction:	South-Southwest
Approximate hydraulic gradient:	0.003 ft/ft

DISCUSSION:

Fourth Quarter 2010 semi-annual groundwater monitoring and sampling was conducted at Station #2162 on 19 November 2010 by BAI field personnel. Water levels were gauged in each of the six wells at the Site. No irregularities were noted during water level gauging. Depth-to-water measurements ranged from 8.38 ft at MW-2 to 9.83 ft at MW-4. Resulting groundwater surface elevations ranged from 24.57 ft above datum in well MW-2 to 24.14 ft in well MW-4. Water level elevations yielded a potentiometric groundwater flow direction and gradient to the south-southwest at approximately 0.003 ft/ft (see Drawing 2). Groundwater monitoring field data sheets are provided within Appendix A. Measured depths to groundwater and respective groundwater elevations are summarized in Table 1. A Site Location Map is provided as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Consistent with the current groundwater sampling schedule, water samples were collected from the wells MW-3 through MW-6 on 19 November 2010. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-C12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Tert-Amyl Methyl Ether (TAME), Tert-Butyl Alcohol (TBA), Di-Isopropyl Ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Ethanol, Ethyl Tert-Butyl Ether (ETBE), and Methyl Tert-Butyl Ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Groundwater sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline Range Organics (GRO) were detected above the laboratory reporting limit in well MW-6 at a concentration of 5,600 µg/L. Benzene, Toluene, and Ethylbenzene constituents were detected in well MW-6 at concentrations of 8.0 µg/L, 1.2 µg/L, and 9.9 µg/L, respectively. MTBE was detected above the laboratory reporting limit in well MW-6 at a concentration of 130 µg/L. The remaining analytes were not detected above their laboratory reporting limits in the four wells sampled this quarter.

Historic laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 2. A copy of the Laboratory Analytical Report, including chain-of-custody documentation is provided in Appendix A. Groundwater monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

Groundwater level elevations were between historic minimum and maximum ranges for wells MW-1 through MW-4, and after three rounds of monitoring were at historic high levels in well MW-5 and MW-6 as summarized in Table 1. The resulting potentiometric groundwater flow direction to the south-southwest at 0.003 ft/ft is consistent with the historic flow directions recorded at the Site.

The sample from well MW-6 had historic high concentrations of Ethylbenzene (9.9 µg/L). Wells MW-3 and MW-4 recorded historic low concentrations of MTBE (<0.50 µg/L). At this time, it is recommended that bi-annual monitoring and sampling of the wells be continued to determine the range of hydrocarbon impacts present.

CLOSURE:

The findings presented in this report are based upon: observations of BAI field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company (a BP affiliated 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 #2162, 15135 Hesperian Boulevard, San Leandro, California
- Drawing 2. Groundwater Elevation Contours and Analytical Summary Map, 19 November 2010, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 2. Summary of Fuel Additives Analytical Data, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Table 3. Historical Groundwater Flow Direction and Gradient, Station #2162, 15135 Hesperian Boulevard, San Leandro, California
- Appendix A. BAI Groundwater Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)
- Appendix B. GeoTracker Upload Confirmation Receipts

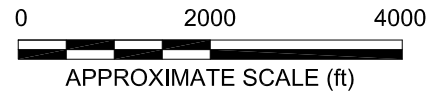
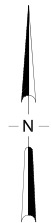
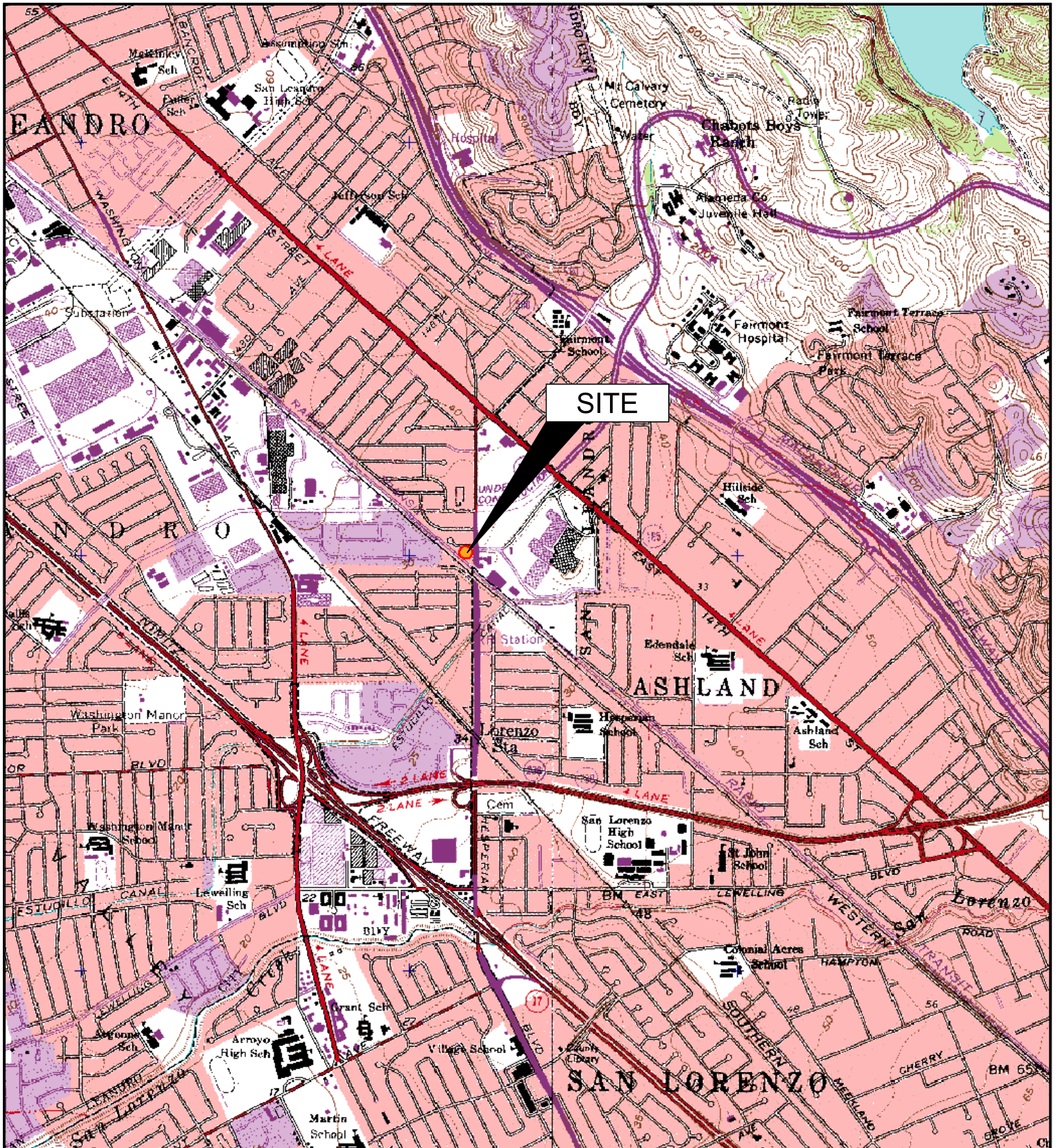


IMAGE SOURCE: USGS

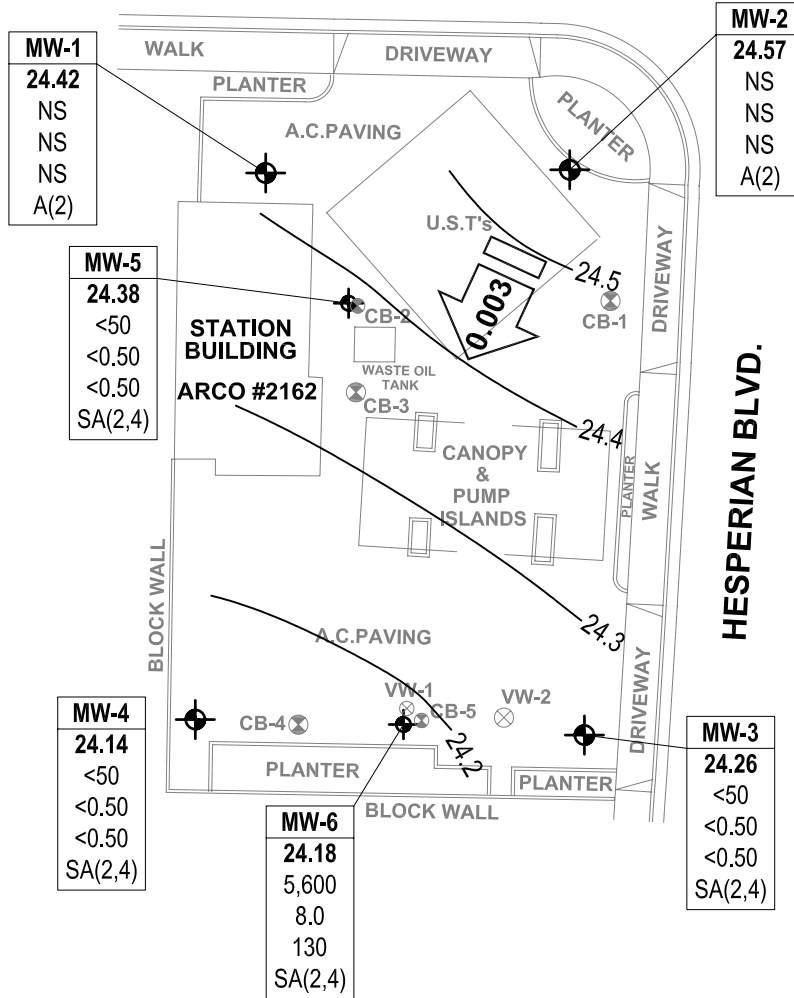
BROADBENT & ASSOCIATES, INC
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-620 Date: 07/27/09

Station #2162
15135 Hesperian Boulevard
San Leandro, California

Site Location Map

Drawing
1

RUTH COURT



MW-1
24.42
NS
NS
NS
A(2)

MW-2
24.57
NS
NS
NS
A(2)

MW-5
24.38
<50
<0.50
<0.50
SA(2,4)

MW-4
24.14
<50
<0.50
<0.50
SA(2,4)

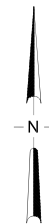
MW-6
24.18
5,600
8.0
130
SA(2,4)

MW-3
24.26
<50
<0.50
<0.50
SA(2,4)

LEGEND

- GROUNDWATER MONITORING WELL
- VAPOR EXTRACTION WELL
- SOIL BORING
- 24.5 GROUNDWATER ELEVATION CONTOUR (FEET ABOVE DATUM)
- APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

- | | |
|---------|---|
| Well | WELL DESIGNATION |
| ELEV | GROUNDWATER ELEVATION (FEET) |
| GRO | GRO. BENZENE & MTBE CONCENTRATIONS (µg/L) |
| Benzene | |
| MTBE | |
| A/Q/SA | SAMPLING FREQUENCY |
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
 - * DATA NOT USED FOR CONTOURING
 - SA SAMPLED SEMI-ANNUALLY



NOTE: SITE MAP ADAPTED FROM WOOD RODGERS SURVYING.

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
6/20/2000	--		31.19	8.0	16.0	8.33	22.86	<50	<0.5	0.8	<0.5	<1.0	<10	--	--
9/29/2000	--		31.19	8.0	16.0	9.07	22.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		31.19	8.0	16.0	8.69	22.50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		31.19	8.0	16.0	8.19	23.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/20/2001	--		31.19	8.0	16.0	8.97	22.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		31.19	8.0	16.0	9.56	21.63	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		31.19	8.0	16.0	8.40	22.79	<50	<0.5	<0.5	<0.5	0.63	<2.5	--	--
3/14/2002	--		31.19	8.0	16.0	8.05	23.14	<50	<0.5	<0.5	<0.5	<0.5	170	--	--
4/18/2002	--		31.19	8.0	16.0	8.27	22.92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		31.19	8.0	16.0	8.88	22.31	<50	<0.5	<0.5	<0.5	<0.5	11	1.0	8.2
10/09/02	NP	a	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
03/28/03	NP	a, c	31.19	8.0	16.0	--	--	--	--	--	--	--	--	--	--
4/7/2003	NP		31.19	8.0	16.0	8.28	22.91	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.9
7/9/2003	NP		31.19	8.0	16.0	8.62	22.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.2
10/08/2003	--	d, e	31.13	8.0	16.0	9.19	21.94	--	--	--	--	--	--	--	--
01/13/2004	--		31.13	8.0	16.0	8.35	22.78	--	--	--	--	--	--	--	--
04/05/2004	--		33.70	8.0	16.0	7.29	26.41	--	--	--	--	--	--	--	--
07/12/2004	NP		33.70	8.0	16.0	9.00	24.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.8	7.0
10/19/2004	--		33.70	8.0	16.0	9.47	24.23	--	--	--	--	--	--	--	--
01/11/2005	--		33.70	8.0	16.0	7.64	26.06	--	--	--	--	--	--	--	--
04/14/2005	--		33.70	8.0	16.0	7.35	26.35	--	--	--	--	--	--	--	--
08/01/2005	--		33.70	8.0	16.0	8.21	25.49	--	--	--	--	--	--	--	--
7/31/2006	--		33.70	8.0	16.0	8.10	25.60	--	--	--	--	--	--	--	--
6/12/2009	P		33.70	8.0	16.0	8.93	24.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.40
11/6/2009	--		33.70	8.0	16.0	9.18	24.52	--	--	--	--	--	--	--	--
6/4/2010	P		33.70	8.0	16.0	8.13	25.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.31	7.2
11/19/2010	--		33.70	8.0	16.0	9.28	24.42	--	--	--	--	--	--	--	--
MW-2															
6/20/2000	--		30.38	8.0	16.0	7.38	23.00	--	--	--	--	--	--	--	--
9/29/2000	--		30.38	8.0	16.0	8.08	22.30	266	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
12/17/2000	--		30.38	8.0	16.0	7.80	22.58	175	<0.5	<0.5	0.659	<0.5	<2.5	--	--
3/23/2001	--		30.38	8.0	16.0	7.23	23.15	351	<0.5	<0.5	0.912	<0.5	<2.5	--	--
6/20/2001	--		30.38	8.0	16.0	7.98	22.40	360	<0.5	<0.5	0.74	<0.5	<2.5	--	--
9/22/2001	--		30.38	8.0	16.0	8.55	21.83	190	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/28/2001	--		30.38	8.0	16.0	7.53	22.85	130	<0.5	0.93	<0.5	0.51	<2.5	--	--
3/14/2002	--		30.38	8.0	16.0	7.17	23.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
4/18/2002	--		30.38	8.0	16.0	7.31	23.07	74	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P		30.38	8.0	16.0	7.93	22.45	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	7.6
10/9/2002	P		30.38	8.0	16.0	8.55	21.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	0.7	7.3
03/28/03	P	c	30.38	8.0	16.0	7.30	23.08	<50	<0.50	0.83	<0.50	<0.50	<0.50	1.48	7.7
4/7/2003	P		30.38	8.0	16.0	7.36	23.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.0
7/9/2003	P		30.38	8.0	16.0	7.71	22.67	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.6
10/08/2003	--		30.38	8.0	16.0	8.25	22.13	--	--	--	--	--	--	--	--
01/13/2004	--		30.38	8.0	16.0	7.55	22.83	--	--	--	--	--	--	--	--
04/05/2004	--		32.97	8.0	16.0	7.29	25.68	--	--	--	--	--	--	--	--
07/12/2004	NP		32.97	8.0	16.0	8.09	24.88	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	7.2
10/19/2004	--		32.97	8.0	16.0	8.29	24.68	--	--	--	--	--	--	--	--
01/11/2005	--		32.97	8.0	16.0	6.81	26.16	--	--	--	--	--	--	--	--
04/14/2005	--		32.97	8.0	16.0	6.69	26.28	--	--	--	--	--	--	--	--
08/01/2005	--		32.97	8.0	16.0	7.40	25.57	--	--	--	--	--	--	--	--
7/31/2006	--		32.97	8.0	16.0	7.22	25.75	--	--	--	--	--	--	--	--
6/12/2009	P		32.95	8.0	16.0	8.18	24.77	51	<0.50	<0.50	<0.50	<0.50	<0.50	0.60	7.55
11/6/2009	--		32.95	8.0	16.0	8.32	24.63	--	--	--	--	--	--	--	--
6/4/2010	P		32.95	8.0	16.0	7.24	25.71	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	7.33
11/19/2010	--		32.95	8.0	16.0	8.38	24.57	--	--	--	--	--	--	--	--
MW-3															
6/20/2000	--		30.30	8.0	15.0	7.75	22.55	--	--	--	--	--	--	--	--
9/29/2000	--		30.30	8.0	15.0	8.46	21.84	<50	<0.5	<0.5	<0.5	<0.5	128	--	--
12/17/2000	--		30.30	8.0	15.0	8.01	22.29	<50	<0.5	<0.5	<0.5	<0.5	46.7	--	--
3/23/2001	--		30.30	8.0	15.0	7.70	22.60	<50	<0.5	<0.5	<0.5	<0.5	26.8	--	--

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)					DO (mg/L)	pH	
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes			MTBE
MW-3 Cont.															
6/20/2001	--		30.30	8.0	15.0	8.23	22.07	<50	<0.5	<0.5	<0.5	<0.5	30	--	--
9/22/2001	--		30.30	8.0	15.0	8.89	21.41	<50	<0.5	<0.5	<0.5	<0.5	12	--	--
12/28/2001	--		30.30	8.0	15.0	7.83	22.47	<50	<0.5	<0.5	<0.5	<0.5	6.2	--	--
3/14/2002	--		30.30	8.0	15.0	7.48	22.82	<50	<0.5	<0.5	<0.5	<0.5	47	--	--
4/18/2002	--		30.30	8.0	15.0	7.62	22.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	P	b (TPH-g)	30.30	8.0	15.0	8.23	22.07	100	<1.0	<1.0	<1.0	<1.0	330	0.9	7.6
10/9/2002	P		30.30	8.0	15.0	8.83	21.47	<50	<0.5	<0.5	<0.5	<0.5	61	0.5	7.4
03/28/03	P	c	30.30	8.0	15.0	7.85	22.45	52	<0.50	1.2	<0.50	<0.50	45	1.42	7.6
4/7/2003	P		30.30	8.0	15.0	7.71	22.59	56	<0.50	<0.50	<0.50	<0.50	56	1.1	6.8
7/9/2003	P		30.30	8.0	15.0	8.00	22.30	<500	<5.0	<5.0	<5.0	<5.0	87	1.6	7.4
10/08/2003	P		30.30	8.0	15.0	8.59	21.71	<50	<0.50	<0.50	<0.50	<0.50	25	0.9	--
01/15/2004	P		30.30	8.0	15.0	7.90	22.40	<50	<0.50	<0.50	<0.50	<0.50	9.8	2.9	7.3
04/05/2004	P		32.89	8.0	15.0	7.61	25.28	<50	<0.50	<0.50	<0.50	<0.50	15	1.5	7.0
07/12/2004	P		32.89	8.0	15.0	8.45	24.44	<50	<0.50	<0.50	<0.50	<0.50	7.3	1.6	6.9
10/19/2004	P		32.89	8.0	15.0	8.95	23.94	<50	<0.50	<0.50	<0.50	<0.50	5.0	0.96	7.1
01/11/2005	P		32.89	8.0	15.0	7.27	25.62	<50	<0.50	<0.50	<0.50	<0.50	2.3	--	7.2
04/14/2005	P		32.89	8.0	15.0	7.10	25.79	<50	<0.50	<0.50	<0.50	1.5	5.6	2.0	7.2
08/01/2005	P		32.89	8.0	15.0	7.71	25.18	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.18	7.0
7/31/2006	P		32.89	8.0	15.0	7.64	25.25	<50	<0.50	<0.50	<0.50	<0.50	4.3	--	6.8
6/12/2009	P		32.88	8.0	15.0	8.36	24.52	<50	0.75	<0.50	<0.50	<0.50	0.53	0.61	7.45
11/6/2009	P		32.89	8.0	15.0	8.58	24.31	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	7.17
6/4/2010	P		32.89	8.0	15.0	7.60	25.29	<50	<0.50	<0.50	<0.50	<0.50	1.9	0.69	7.4
11/19/2010	NP		32.89	8.0	15.0	8.63	24.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.69	7.0
MW-4															
6/20/2000	--		30.39	10.0	18.0	8.87	21.52	--	--	--	--	--	--	--	--
9/29/2000	--		30.39	10.0	18.0	9.61	20.78	<50	1.02	<0.5	<0.5	<0.5	12.2	--	--
12/17/2000	--		30.39	10.0	18.0	9.17	21.22	<50	<0.5	<0.5	<0.5	<0.5	5.81	--	--
3/23/2001	--		30.39	10.0	18.0	8.70	21.69	<50	<0.5	<0.5	<0.5	<0.5	3.04	--	--
6/20/2001	--		30.39	10.0	18.0	9.51	20.88	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/22/2001	--		30.39	10.0	18.0	10.06	20.33	<50	<0.5	<0.5	<0.5	<0.5	5.2	--	--

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
12/28/2001	--		30.39	10.0	18.0	8.86	21.53	<50	<0.5	<0.5	<0.5	<0.5	4.3	--	--
3/14/2002	--		30.39	10.0	18.0	8.52	21.87	<50	<0.5	<0.5	<0.5	<0.5	5.1	--	--
4/18/2002	--		30.39	10.0	18.0	8.76	21.63	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
7/19/2002	NP		30.39	10.0	18.0	9.39	21.00	<50	<0.5	<0.5	<0.5	<0.5	30	1.8	7.8
10/9/2002	NP		30.39	10.0	18.0	10.08	20.31	<50	<0.5	<0.5	<0.5	<0.5	28	1.0	8.0
03/28/03	NP	c	30.39	10.0	18.0	8.88	21.51	<50	<0.50	1.3	<0.50	<0.50	4.4	0.98	7.2
4/7/2003	NP		30.39	10.0	18.0	8.78	21.61	<50	<0.50	<0.50	<0.50	<0.50	14	1.1	7.0
7/9/2003	NP		30.39	10.0	18.0	9.14	21.25	<50	<0.50	<0.50	<0.50	<0.50	1.8	1.6	7.4
10/08/2003	NP		30.39	10.0	18.0	9.77	20.62	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.6	6.4
01/15/2004	P		30.39	10.0	18.0	8.68	21.71	<50	1.4	0.84	<0.50	1.5	6.6	2.9	7.1
04/05/2004	NP		33.97	10.0	18.0	8.77	25.20	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	7.0
07/12/2004	NP		33.97	10.0	18.0	9.46	24.51	<50	<0.50	<0.50	<0.50	<0.50	1.0	2.5	6.6
10/19/2004	NP		33.97	10.0	18.0	9.91	24.06	<50	<0.50	<0.50	<0.50	<0.50	4.4	1.21	7.9
01/11/2005	P		33.97	10.0	18.0	7.80	26.17	59	2.0	<0.50	<0.50	<0.50	11	0.9	7.1
04/14/2005	NP		33.97	10.0	18.0	8.07	25.90	<50	<0.50	<0.50	<0.50	<0.50	0.64	2.8	7.4
08/01/2005	NP		33.97	10.0	18.0	8.58	25.39	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.48	5.7
7/31/2006	P		33.97	10.0	18.0	8.75	25.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	6.7
6/12/2009	P		33.97	10.0	18.0	9.51	24.46	<50	0.68	<0.50	<0.50	<0.50	<0.50	0.70	7.51
11/6/2009	P		33.97	10.0	18.0	9.74	24.23	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	7.15
6/4/2010	P		33.97	10.0	18.0	8.71	25.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.70	7.24
11/19/2010	P		33.97	10.0	18.0	9.83	24.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.09	7.1
MW-5															
6/12/2009	NP		33.96	8.0	16.0	9.25	24.71	85	<0.50	<0.50	<0.50	<0.50	<0.50	0.59	7.50
11/6/2009	P		33.96	8.0	16.0	9.49	24.47	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.56	7.1
6/4/2010	NP		33.96	8.0	16.0	8.42	25.54	67	<0.50	<0.50	<0.50	<0.50	<0.50	1.24	7.65
11/19/2010	NP		33.96	8.0	16.0	9.58	24.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.72	7.3
MW-6															
6/12/2009	NP		33.48	8.0	16.0	9.02	24.46	1,800	4.9	<0.50	2.8	<0.50	59	0.68	7.39
11/6/2009	P		33.48	8.0	16.0	9.21	24.27	880	1.7	<0.50	0.77	<0.50	37	0.43	6.9

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-6 Cont.															
6/4/2010	NP		33.48	8.0	16.0	8.22	25.26	6,200	15	1.6	8.2	1.2	190	0.87	7.16
11/19/2010	NP		33.48	8.0	16.0	9.30	24.18	5,600	8.0	1.2	9.9	<1.0	130	0.78	6.8

SYMBOLS AND ABBREVIATIONS:

--- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in feet below ground surface
ft bgs = feet below ground surface
GRO = Gasoline Range Organics, range C4-C12
GWE = Groundwater elevation measured in feet
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in feet above mean sea level
TPH-g = Total petroleum hydrocarbons as gasoline
ug/L = Micrograms per liter

FOOTNOTES:

a = Well not accessible - car parked over.
b = Hydrocarbon pattern is present in the requested fuel quantitation range but does not represent the pattern of the requested fuel
c =TPH-g, BTEX and MTBE analyzed by EPA method 8260 beginning on 1st Quarter 2003 sampling event (3/28/03)
d = Guaged with stinger in well
e = Well casing lowered 0.06 feet during well repairs on 9/17/2003

NOTES:

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPHg was changed to GRO. The resulting data may be impacted by the potential of non-TPHg 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.

Wells were originally surveyed to NAVD'88 datum by URS Corporation on February 23, 2004.
Wells were resurveyed to NAVD'88 datum by Wood Rodgers Surveying on May 11, 2009.

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.

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

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2									
3/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3									
3/28/2003	<100	<20	45	<0.50	<0.50	0.73	<0.50	<0.50	
4/7/2003	<100	<20	56	<0.50	<0.50	0.72	<0.50	<0.50	
7/9/2003	<1,000	<200	87	<5.0	<5.0	<5.0	<5.0	<5.0	
10/08/2003	<100	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	9.8	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	15	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	7.3	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	4.3	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/12/2009	<300	<10	0.53	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2. Summary of Fuel Additives Analytical Data
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4									
3/28/2003	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
4/7/2003	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
7/9/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/08/2003	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
01/15/2004	<100	<20	6.6	<0.50	<0.50	<0.50	<0.50	<0.50	a (TBA and EDB)
04/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
07/12/2004	<100	<20	1.0	<0.50	<0.50	<0.50	<0.50	<0.50	
10/19/2004	<100	<20	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
01/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	b
04/14/2005	<100	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	
08/01/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
7/31/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-5									
6/12/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/6/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6									
6/12/2009	<300	<10	59	<0.50	<0.50	5.2	<0.50	<0.50	
11/6/2009	<300	24	37	<0.50	<0.50	<0.50	<0.50	<0.50	
6/4/2010	<300	17	190	<0.50	<0.50	17	<0.50	<0.50	
11/19/2010	<600	<20	130	<1.0	<1.0	<1.0	<1.0	<1.0	

SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above specified laboratory reporting limit

--- = Not analyzed/applicable/measured/available

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-butyl alcohol

ug/L = Micrograms per liter

FOOTNOTES:

a = The result was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria.

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

c = LCS rec. above meth. control limits. Analyte ND. Data not impacted.

NOTES:

All fuel oxygenate compounds analyzed using EPA Method 8260B

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

Table 3. Historical Groundwater Flow Direction and Gradient
ARCO Service Station #2162, 15135 Hesperian Blvd., San Leandro, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/23/2001	Southwest	0.011
6/20/2001	Southwest	0.013
9/22/2001	Southwest	0.012
12/28/2001	Southwest	0.010
3/14/2002	Southwest	0.011
4/18/2002	Southwest	0.012
7/19/2002	Southwest	0.012
10/9/2002	Southwest	0.013
3/28/2003	Southwest	0.013
4/7/2003	Southwest	0.011
7/9/2003	Southwest	0.010
10/8/2003	Southwest	0.010
1/15/2004	Southwest	0.008
4/5/2004	South-Southwest	0.004
7/12/2004	South and Southwest	0.003 and 0.005
10/19/2004	Southwest	0.004
1/11/2005	Southwest (a) to Southeast (b)	0.005 to 0.004
4/14/2005	Southeast	0.004
8/1/2005	Southwest	0.002
7/31/2006	South-Southwest	0.003
6/12/2009	South	0.003
11/6/2009	South-Southwest	0.003
6/4/2010	South-Southwest	0.004
11/19/2010	South-Southwest	0.003

FOOTNOTES:

a = Direction at underground storage tanks

b = Direction at dispensers

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

APPENDIX A

BAI GROUNDWATER SAMPLING DATA PACKAGE

(Includes Field Data Sheets, Laboratory Analytical Report with Chain-Of-Custody Documentation, and Field Procedures)

FIELD DATA REPORT

DATE: 11/19/10
PERSONNEL: SB&EF
WEATHER: overcast

PROJECT NO.: 06-88-620
COMMENTS:

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

Well ID	Time	MEASURING POINT	DTW (FT)	PRODUCT THICKNESS	pH	Cond. (X100)	Temp. (C/F)	DO (mg/l)	Redox (mV)	Iron (mg/l)	Alk. (mg/l)	WELL HEAD CONDITION: VAULT, BOLTS, CAP, LOCK, ETC
1	1000		9.28									2 stripped
2	0755		8.38									2 stripped
3	0438		8.63									
4	0907		9.83									
5	1004		9.58									
	46925		9.30									

Groundwater Sampling Data Sheet

Well I.D.: MW-5

Project Name/Location: BP/AR10 2162

Project #: 04-88-620

Sampler's Name: SS + EF

Date: 11/19/10

Purging Equipment:

Sampling Equipment: bailey

Casing Type: PVC

Casing Diameter: 4 inch

***UNIT CASING VOLUMES**

2" = 0.16 gal/lin ft.

Total Well Depth: feet

3" = 0.37 gal/lin ft.

Depth to Water: 9.58 feet

4" = 0.65 gal/lin ft.

Water Column Thickness: = feet

6" = 1.47 gal/lin ft.

Unit Casing Volume*: x gallon / foot

Casing Water Volume: = gallons

Casing Volume: x 3 each

Estimated Purge Volume: = gallons

Free product measurement (if present):

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	1008	0.12	206	—	798.2	66.8	7.3	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: gallons

Depth to Water at Sample Collection: feet

Sample Collection Time: 1010

Purged Dry? (Y/N) (N)

Comments: NP

Groundwater Sampling Data Sheet

Well I.D.: mw-3
 Project Name/Location: BP/ARCO 2167 Project #: 06-88-620
 Sampler's Name: SB + BR Date: 11/19/00
 Purging Equipment: —
 Sampling Equipment: bauler

Casing Type: PVC
 Casing Diameter: 4 inch
 Total Well Depth: — feet
 Depth to Water: 8.63 feet
 Water Column Thickness: = — feet
 Unit Casing Volume*: x — gallon / foot
 Casing Water Volume: = — gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = — gallons

***UNIT CASING VOLUMES**

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

Free product measurement (if present): —

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0943	1.69	216	—	780.3	68.4	7.0	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: — gallons
 Depth to Water at Sample Collection: — feet
 Sample Collection Time: 0950 Purged Dry? (Y/N) (N)

Comments: DP

Groundwater Sampling Data Sheet

Well I.D.: MW-6
 Project Name/Location: BP/ARCO 2102 Project #: 06-88-620
 Sampler's Name: SK & EF Date: 11/19/00
 Purging Equipment: _____
 Sampling Equipment: Ducker

Casing Type: PVC
 Casing Diameter: 4 inch
 Total Well Depth: _____ feet
 Depth to Water: 9.30 feet
 Water Column Thickness: = _____ feet
 Unit Casing Volume*: x _____ gallon / foot
 Casing Water Volume: = _____ gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = _____ gallons

***UNIT CASING VOLUMES**

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

Free product measurement (if present): _____

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
0	0930	0.78	264	—	858.5	69.3	6.8	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

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

Comments: NP

Groundwater Sampling Data Sheet

Well I.D.: MW-4
 Project Name/Location: BP/ARCO 2162 Project #: 06-88-620
 Sampler's Name: SB + EF Date: 11/19/10
 Purging Equipment: boiler
 Sampling Equipment: boiler

Casing Type: PVC
 Casing Diameter: 2 inch
 Total Well Depth: 18.00 feet
 Depth to Water: 9.83 feet
 Water Column Thickness: = 8.17 feet
 Unit Casing Volume*: x 0.16 gallon / foot
 Casing Water Volume: = 1.30 gallons
 Casing Volume: x 3 each
 Estimated Purge Volume: = 3.97 gallons

***UNIT CASING VOLUMES**

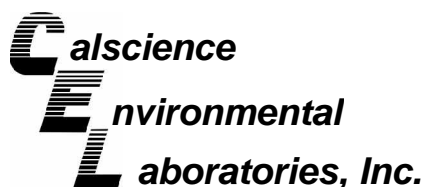
2" = 0.16 gal/lin ft.
 3" = 0.37 gal/lin ft.
 4" = 0.65 gal/lin ft.
 6" = 1.47 gal/lin ft.

Free product measurement (if present): _____

Purged (gallons)	Time (24:00)	DO	ORP (mV)	Fe	Conductance (µS)	Temperature (Fahrenheit)	pH	Observations
<u>0</u>	<u>0909</u>	<u>1.09</u>	<u>234</u>	<u>-</u>	<u>837.1</u>	<u>67.4</u>	<u>7.3</u>	
<u>2.0</u>	<u>0913</u>	X	X	X	<u>838.9</u>	<u>69.4</u>	<u>7.2</u>	
<u>3.0</u>	<u>0915</u>	X	X	X	<u>841.8</u>	<u>70.7</u>	<u>7.1</u>	
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				
		X	X	X				

Total Water Volume Purged: 3.0 gallons
 Depth to Water at Sample Collection: _____ feet
 Sample Collection Time: 0920
 Purged Dry? (Y/N) (N)

Comments: _____



December 07, 2010

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

Subject: **CalScience Work Order No.: 10-11-1704**
Client Reference: BP 2162

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 11/20/2010 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Villafania'.

CalScience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Analytical Report



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

Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 2162

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	10-11-1704-1-E	11/19/10 09:50	Aqueous	GC 4	11/23/10	11/24/10 09:41	101123B01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	80	38-134			

MW-4	10-11-1704-2-E	11/19/10 09:20	Aqueous	GC 4	11/23/10	11/24/10 10:13	101123B01
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	71	38-134			

MW-5	10-11-1704-3-E	11/19/10 10:10	Aqueous	GC 4	11/23/10	11/24/10 10:45	101123B01
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	77	38-134			

MW-6	10-11-1704-4-E	11/19/10 09:35	Aqueous	GC 4	11/23/10	11/24/10 11:18	101123B01
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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	5600	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	93	38-134			

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

Analytical Report



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

Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 2162

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-949	N/A	Aqueous	GC 4	11/23/10	11/24/10 00:32	101123B01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	76	38-134			

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

Analytical Report



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

Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: BP 2162

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	10-11-1704-1-A	11/19/10 09:50	Aqueous	GC/MS L	11/29/10	11/29/10 17:01	101129L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	102	80-128			Dibromofluoromethane	105	80-127		
Toluene-d8	91	80-120			1,4-Bromofluorobenzene	86	68-120		

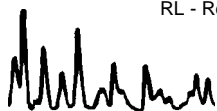
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	10-11-1704-2-A	11/19/10 09:20	Aqueous	GC/MS L	11/29/10	11/29/10 17:30	101129L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	109	80-128			Dibromofluoromethane	107	80-127		
Toluene-d8	87	80-120			1,4-Bromofluorobenzene	84	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	10-11-1704-3-A	11/19/10 10:10	Aqueous	GC/MS L	11/29/10	11/29/10 17:59	101129L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	119	80-128			Dibromofluoromethane	124	80-127		
Toluene-d8	97	80-120			1,4-Bromofluorobenzene	85	68-120		

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



Analytical Report



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

Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: BP 2162

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	10-11-1704-4-B	11/19/10 09:35	Aqueous	GC/MS L	11/30/10	11/30/10 15:29	101130L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	8.0	1.0	2		Methyl-t-Butyl Ether (MTBE)	130	2.0	4	
1,2-Dibromoethane	ND	1.0	2		Tert-Butyl Alcohol (TBA)	ND	20	2	
1,2-Dichloroethane	ND	1.0	2		Diisopropyl Ether (DIPE)	ND	1.0	2	
Ethylbenzene	9.9	1.0	2		Ethyl-t-Butyl Ether (ETBE)	ND	1.0	2	
Toluene	1.2	1.0	2		Tert-Amyl-Methyl Ether (TAME)	ND	1.0	2	
Xylenes (total)	ND	1.0	2		Ethanol	ND	600	2	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	101	80-128			Dibromofluoromethane	106	80-127		
Toluene-d8	103	80-120			1,4-Bromofluorobenzene	98	68-120		

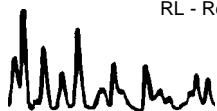
Method Blank	099-12-703-1,532	N/A	Aqueous	GC/MS L	11/29/10	11/29/10 12:46	101129L01
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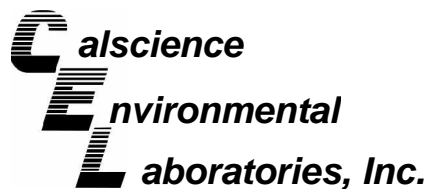
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	107	80-128			Dibromofluoromethane	110	80-127		
Toluene-d8	87	80-120			1,4-Bromofluorobenzene	84	68-120		

Method Blank	099-12-703-1,535	N/A	Aqueous	GC/MS L	11/30/10	11/30/10 12:38	101130L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>		<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>	<u>Qual</u>	
1,2-Dichloroethane-d4	106	80-128			Dibromofluoromethane	106	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	86	68-120		

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





Quality Control - Spike/Spike Duplicate



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

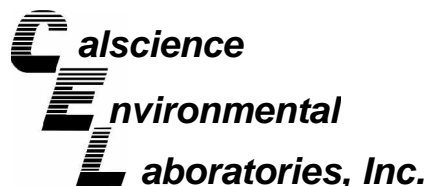
Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-11-1715-3	Aqueous	GC 4	11/23/10	11/24/10	101123S02

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	95	97	38-134	2	0-25	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate



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

Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B

Project BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-11-1836-3	Aqueous	GC/MS L	11/29/10	11/29/10	101129S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	95	105	76-124	10	0-20	
Carbon Tetrachloride	108	109	74-134	1	0-20	
Chlorobenzene	95	98	80-120	4	0-20	
1,2-Dibromoethane	100	98	80-120	1	0-20	
1,2-Dichlorobenzene	100	103	80-120	3	0-20	
1,2-Dichloroethane	98	103	80-120	5	0-20	
Ethylbenzene	99	103	78-126	4	0-20	
Toluene	99	102	80-120	2	0-20	
Trichloroethene	99	101	77-120	2	0-20	
Methyl-t-Butyl Ether (MTBE)	97	95	67-121	2	0-49	
Tert-Butyl Alcohol (TBA)	97	104	36-162	8	0-30	
Diisopropyl Ether (DIPE)	100	108	60-138	7	0-45	
Ethyl-t-Butyl Ether (ETBE)	93	98	69-123	5	0-30	
Tert-Amyl-Methyl Ether (TAME)	87	93	65-120	7	0-20	
Ethanol	110	113	30-180	2	0-72	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate



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

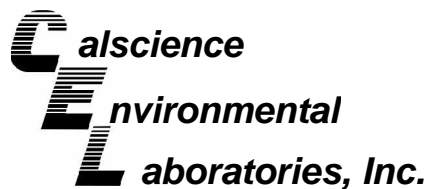
Date Received: 11/20/10
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B

Project BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-11-1922-3	Aqueous	GC/MS L	11/30/10	11/30/10	101130S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	103	103	76-124	0	0-20	
Carbon Tetrachloride	111	112	74-134	1	0-20	
Chlorobenzene	98	99	80-120	1	0-20	
1,2-Dibromoethane	93	98	80-120	5	0-20	
1,2-Dichlorobenzene	95	100	80-120	5	0-20	
1,2-Dichloroethane	98	99	80-120	0	0-20	
Ethylbenzene	104	105	78-126	0	0-20	
Toluene	99	100	80-120	1	0-20	
Trichloroethene	99	98	77-120	1	0-20	
Methyl-t-Butyl Ether (MTBE)	90	94	67-121	4	0-49	
Tert-Butyl Alcohol (TBA)	97	96	36-162	1	0-30	
Diisopropyl Ether (DIPE)	101	108	60-138	7	0-45	
Ethyl-t-Butyl Ether (ETBE)	93	98	69-123	6	0-30	
Tert-Amyl-Methyl Ether (TAME)	84	87	65-120	3	0-20	
Ethanol	94	102	30-180	8	0-72	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



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

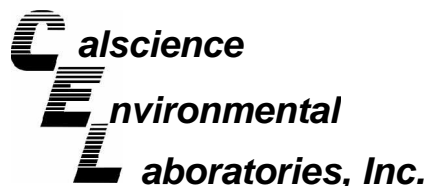
Date Received: N/A
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project: BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-949	Aqueous	GC 4	11/23/10	11/23/10	101123B01

<u>Parameter</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	102	103	78-120	0	0-20	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



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

Date Received: N/A
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,532	Aqueous	GC/MS L	11/29/10	11/29/10	101129L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	99	101	80-120	73-127	2	0-20	
Carbon Tetrachloride	105	102	74-134	64-144	3	0-20	
Chlorobenzene	97	99	80-120	73-127	2	0-20	
1,2-Dibromoethane	96	98	79-121	72-128	2	0-20	
1,2-Dichlorobenzene	92	96	80-120	73-127	4	0-20	
1,2-Dichloroethane	97	99	80-120	73-127	3	0-20	
Ethylbenzene	100	101	80-120	73-127	1	0-20	
Toluene	95	94	80-120	73-127	0	0-20	
Trichloroethene	93	94	79-127	71-135	1	0-20	
Methyl-t-Butyl Ether (MTBE)	94	94	69-123	60-132	0	0-20	
Tert-Butyl Alcohol (TBA)	90	92	63-123	53-133	2	0-20	
Diisopropyl Ether (DIPE)	97	94	59-137	46-150	4	0-37	
Ethyl-t-Butyl Ether (ETBE)	95	94	69-123	60-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	94	93	70-120	62-128	2	0-20	
Ethanol	96	91	28-160	6-182	6	0-57	

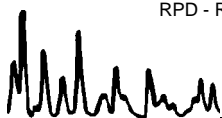
Total number of LCS compounds : 15

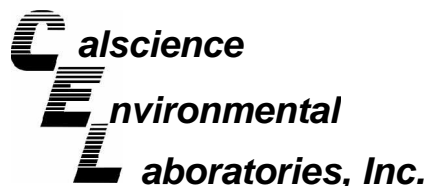
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



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

Date Received: N/A
Work Order No: 10-11-1704
Preparation: EPA 5030C
Method: EPA 8260B

Project: BP 2162

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,535	Aqueous	GC/MS L	11/30/10	11/30/10	101130L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	90	88	80-120	73-127	2	0-20	
Carbon Tetrachloride	104	101	74-134	64-144	3	0-20	
Chlorobenzene	92	91	80-120	73-127	0	0-20	
1,2-Dibromoethane	89	90	79-121	72-128	1	0-20	
1,2-Dichlorobenzene	92	92	80-120	73-127	1	0-20	
1,2-Dichloroethane	89	88	80-120	73-127	1	0-20	
Ethylbenzene	97	95	80-120	73-127	1	0-20	
Toluene	96	92	80-120	73-127	4	0-20	
Trichloroethene	94	89	79-127	71-135	5	0-20	
Methyl-t-Butyl Ether (MTBE)	97	96	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	90	87	63-123	53-133	4	0-20	
Diisopropyl Ether (DIPE)	95	92	59-137	46-150	3	0-37	
Ethyl-t-Butyl Ether (ETBE)	96	95	69-123	60-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	88	87	70-120	62-128	1	0-20	
Ethanol	90	82	28-160	6-182	10	0-57	

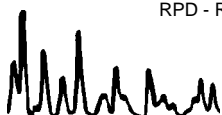
Total number of LCS compounds : 15

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

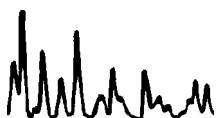
RPD - Relative Percent Difference , CL - Control Limit



Work Order Number: 10-11-1704

<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery above limit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.





Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: BP 2162

Req Due Date (mm/dd/yy): _____ Rush TAT: Yes _____ No X

BP/ARC Facility No: 2162

Lab Work Order Number: 10-11-1704

Lab Name: Calscience	BP/ARC Facility Address: 3310 Park Blvd.	Consultant/Contractor: Broadbent & Associates, Inc.
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No: 06-88-620-5-822
Lab PM: Richard Villafania	Lead Regulatory Agency: ACEH	Address: 1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Lab Phone: 714-895-5494	California Global ID No.: T0600100084	Consultant/Contractor PM: Tom Venus
Lab Shipping Acct: 9225	Enfos Proposal No: 000WD-0014	Phone: 530-566-1400
Lab Bottle Order No:	Accounting Mode: Provision <u>X</u> OOC-BU _____ OOC-RM _____	Email EDD To: tvenus@broadbentinc.com
Other Info:	Stage: Operate (5) Activity: Monitoring/MNA (22)	Invoice To: BP/ARC <u>X</u> Contractor _____

BP/ARC EBM: Chuck Carmel				Matrix		No. Containers / Preservative							Requested Analyses						Report Type & QC Level	
EBM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO (8015)	BTEX (8260)	5 Oxys (8260)	EDB (8260)	1,2-DCA (8260)	Ethanol (8260)	Standard <u>X</u>	
EBM Email:																			Full Data Package _____	
Lab No.	Sample Description	Date	Time																Comments	
1	MW-3	11/19/10	0950	X			6				X	X	X	X	X	X				
2	MW-4		0920	X			6			X		X	X	X	X	X				
3	MW-5		1010	X			6			X		X	X	X	X	X				
4	MW-6		0935	X			6			X		X	X	X	X	X				
5	TB - 2162 -	11/19/10																		

Sampler's Name: <u>Eric Ford</u>	Relinquished By / Affiliation: <u>Eric Ford</u>		Date: <u>11/19/10</u>	Time: <u>1330</u>	Accepted By / Affiliation: <u>[Signature]</u>		Date: <u>11/20/10</u>	Time: <u>0930</u>
Sampler's Company: <u>BAF</u>	Ship Date: <u>11/19/10</u>		Shipment Method: <u>GS</u>		Shipment Tracking No: <u>106830681</u>			

Special Instructions: _____

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

1704

5

DATE 11/11/00

COMPANY MAE

ADDRESS 875 Cott...

ADDRESS STE/ROOM G

CITY Waco TX ZIP CODE 76788

SENDER'S NAME Eric F... PHONE NUMBER 714-212-2101

COMPANY CAL SCIENCE

NAME PHONE NUMBER 714) 895-8454

ADDRESS 7210 LINCOLN WAY

ADDRESS STE/ROOM

CITY GARDEN GROVE ZIP CODE 32841

YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

SPECIAL INSTRUCTIONS



SHIPPING AIR BILL

4 PACKAGE INFORMATION

LETTER (MAX 8 OZ)

PACKAGE

DECLARED

COD AMOUNT (CASH NOT ACCEPTED)

PACKAGE LABEL

5 DELIVERY SERVICE PRIORITY OVERNIGHT BY 10:30 AM EARLY PRIORITY BY 8:00 AM

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

6 RELEASE SIGNATURE

INITIALS AUTHORIZED DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION

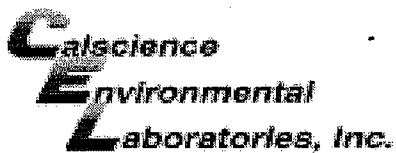
TIME DRIVER #

9 GSO TRACKING NUMBER

106836681

PEEL OFF HERE

106836681



WORK ORDER #: 10-11-7704

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Broadbent & Associates

DATE: 11/20/10

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

Temperature 2.5 °C + 0.5 °C (CF) = 3.0 °C Blank Sample

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

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

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

Ambient Temperature: Air Filter Initial: YL

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: YL

Sample _____ No (Not Intact) Not Present Initial: DT

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

CONTAINER TYPE:

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

Water: VOA VOAh VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 500PB 500PBna

250PB 250PBn 125PB 125PBz_{na} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Summa® **Other:** _____ **Trip Blank Lot#:** 101019A **Labeled/Checked by:** DT

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

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ z_{na}: ZnAc₂+NaOH f: Field-filtered **Scanned by:** [Signature]

NO. 857324

NON-HAZARDOUS WASTE DATA FORM

1. BEI #

2. Generator's Name and Mailing Address BP WEST COAST PRODUCTS, LLC P.O. BOX 80249 RANCHO SANTA MARGARITA, CA 92688 Generator's Phone: (949) 460-5200	Generator's Site Address (if different than mailing address) BP 2162 15135 Mcgrath Blvd San Leandro, CA 24-HOUR EMERGENCY PHONE: (949) 699-3706
---	---

3. Transporter 1 Company Name Broadbent & Associates, Inc.	Phone # (530) 568-1400
---	---------------------------

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

5. Designated Facility Name and Site Address INTRAT, INC. 1105 AIRPORT RD #C RIO VISTA, CA 94571	Phone # (530) 753-1828
---	---------------------------

6. Waste Shipping Name and Description	7. Containers		8. Total Quantity	9. Unit Wt/Vol	10. Profile No.
	No.	Type			
A. NON-HAZARDOUS WATER	1	TT	3	G	
B.					
C.					
D.					


11. Special Handling Instructions and Additional Information

WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

WELL PURGING / DECON WATER

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

Generator's/Officer's Printed/Typed Name BAI	Signature 	Month Day Year 11 30 10
---	---	----------------------------

13. Transporter Acknowledgment of Receipt of Materials		
Transporter 1 Printed/Typed Name BAI	Signature 	Month Day Year 11 30 10
Transporter 2 Printed/Typed Name	Signature	Month Day Year

14. Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.		
Printed/Typed Name	Signature	Month Day Year

GENERATOR

TRANSPORTER

FACILITY

BROADBENT & ASSOCIATES INC. FIELD PROCEDURES

A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

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

A.1.1 Water Level & Free-Product Measurement

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

A.1.2 Monitoring Well Purging

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

A.1.3 Ground-Water Sample Collection

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

A.1.4 Surface Water Sample Collection

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

A.1.5 Decontamination Protocol

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

A.1.6 Chain of Custody Procedures

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

Field Custody Procedures

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

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

Transfer of Custody and Shipment

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

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

A.1.7 Field Records

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

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

<u>Submittal Type:</u>	GEO_WELL
<u>Submittal Title:</u>	4Q10 GEO_WELL 2162
<u>Facility Global ID:</u>	T0600100084
<u>Facility Name:</u>	ARCO #2162
<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>	12/9/2010 11:32:46 AM
<u>Confirmation Number:</u>	6392373621

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 - Monitoring Report - Semi-Annually
<u>Submittal Title:</u>	4Q10 GW Monitoring
<u>Facility Global ID:</u>	T0600100084
<u>Facility Name:</u>	ARCO #2162
<u>File Name:</u>	10111704.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>	12/9/2010 11:38:57 AM
<u>Confirmation Number:</u>	1142484307

[VIEW QC REPORT](#)

[VIEW DETECTIONS REPORT](#)