

**RECEIVED**

3:12 pm, Apr 30, 2008

Alameda County  
Environmental Health



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 1257  
San Ramon, CA 94583  
Phone: (925) 275-3801  
Fax: (925) 275-3815

9 April 2008

Re: First Quarter 2008 Ground-Water Monitoring Report  
Atlantic Richfield Company Station #374  
6407 Telegraph Avenue  
Oakland, California  
ACEH Case # RO0000078

"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:

A handwritten signature in black ink that reads "Paul Supple".

Paul Supple  
Environmental Business Manager

Prepared for

Mr. Paul Supple  
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](http://www.broadbentinc.com)

9 April 2008

Project No. 06-08-602

**First Quarter 2008 Ground-Water Monitoring Report**  
Atlantic Richfield Company Station #374  
6407 Telegraph Avenue  
Oakland, California

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



9 April 2008

Project No. 06-08-602

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

Attn.: Mr. Paul Supple

Re: First Quarter 2008 Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #374, 6407 Telegraph Avenue, Oakland, Alameda County, California. ACEH Case #RO0000078

Dear Mr. Supple:

Attached is the *First Quarter 2008 Ground-Water Monitoring Report* for Atlantic Richfield Company Station #374 located at 6407 Telegraph Avenue, Oakland, California (Site). This report presents results of ground-water monitoring conducted at the Site during the First Quarter of 2008.

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

Sincerely,

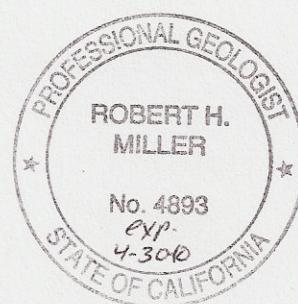
BROADBENT & ASSOCIATES, INC.

A handwritten signature in black ink that reads "Thomas A. Venus".

Thomas A. Venus, P.E.  
Senior Engineer

A handwritten signature in black ink that reads "Robert H. Miller".

Robert H. Miller, P.G., C.HG.  
Principal Hydrogeologist



Enclosures

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

## STATION #374 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #374	Address: 6407 Telegraph Avenue, Oakland, California
Environmental Business Manager:	Mr. Paul Supple
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus (530) 566-1400
Consultant Project No.:	06-08-602
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000078
Facility Permits/Permitting Agency:	NA

### WORK PERFORMED THIS QUARTER (First Quarter 2008):

1. Prepared and submitted Fourth Quarter 2007 Ground-Water Monitoring Report.
2. Conducted ground-water monitoring/sampling for First Quarter 2008. Work performed on 22 February 2008 by Stratus Environmental, Inc. (Stratus).

### WORK PROPOSED FOR NEXT QUARTER (Second Quarter 2008):

1. Prepared and submitted this First Quarter 2008 Ground-Water Monitoring Report (contained herein).
2. Conduct quarterly ground-water monitoring/sampling for Second Quarter 2008.

### QUARTERLY RESULTS SUMMARY:

Current phase of project:	<u>Ground-water monitoring/sampling</u>
Frequency of ground-water monitoring:	<u>Quarterly: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6</u>
Frequency of ground-water sampling:	<u>Quarterly: MW-1</u> <u>Semi-Annually (1Q and 3Q): MW-2 and MW-4</u> <u>Annually (3Q): MW-3, MW-5, and MW-6</u>
Is free product (FP) present on-site:	<u>No</u>
Current remediation techniques:	<u>NA</u>
Depth to ground water (below TOC):	<u>4.20 ft (MW-6) to 7.48 ft (MW-5)</u>
General ground-water flow direction:	<u>Southwest</u>
Approximate hydraulic gradient:	<u>0.03 ft/ft</u>

### DISCUSSION:

First quarter 2008 ground-water monitoring and sampling was conducted at Station #374 on 22 February 2008 by Stratus. Water levels were gauged in the six wells at the Site. No irregularities were noted in the field during this quarter's water level gauging. Depth-to-water measurements ranged from 4.20 ft at MW-6 to 7.48 ft at MW-5. Resulting ground-water surface elevations ranged from 158.57 ft above mean sea level in well MW-1 to 143.85 ft at well MW-5. Water level elevations were between historic minimum and maximum ranges for each well, as summarized in Table 1, with the following exceptions: water level elevations reached historic maximum values in wells MW-1 and MW-3. Historic water level elevation data is summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the southwest at approximately 0.03 ft/ft, consistent with historical data reported in Table 3. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground-water and respective ground-water elevations are summarized in Table 1. Potentiometric ground-water elevation contours are presented in Drawing 1.

Consistent with the current ground-water sampling schedule, water samples were collected from wells MW-1, MW-2, and MW-4 at the Site. 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, C6-12) 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 noted during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Concentrations of GRO were detected above the laboratory reporting limits in one of the three wells sampled at a concentration of 3,900 micrograms per liter ( $\mu\text{g}/\text{L}$ ) in well MW-4. Benzene was detected above the laboratory reporting limit in one of the three wells sampled at a concentration of 880  $\mu\text{g}/\text{L}$  in well MW-4. Toluene was detected above the laboratory reporting limit in one of the three wells sampled at a concentration of 39  $\mu\text{g}/\text{L}$  in well MW-4. Ethylbenzene was detected above the laboratory reporting limit in one of the three wells sampled at a concentration of 180  $\mu\text{g}/\text{L}$  in well MW-4. Total Xylenes were detected above the laboratory reporting limits in one of the three wells sampled at a concentration of 92  $\mu\text{g}/\text{L}$  in well MW-4. TAME was detected above the laboratory reporting limit in one of the three wells sampled at a concentration of 1.5  $\mu\text{g}/\text{L}$  in well MW-1. MTBE was detected above the laboratory reporting limit in each of the three wells sampled at concentrations up to 250  $\mu\text{g}/\text{L}$  in well MW-1. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the three wells sampled this quarter.

Detected analyte concentrations were within the historic minimum and maximum ranges recorded for each well. 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 1. A copy of the laboratory analytical report, including chain-of-custody documentation is provided in Appendix A. Ground-water monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix B.

## CLOSURE:

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

## ATTACHMENTS:

Drawing 1. Ground-Water Elevation Contours and Analytical Summary Map, 22 February 2008,  
Station #374, 6407 Telegraph Avenue, Oakland, California

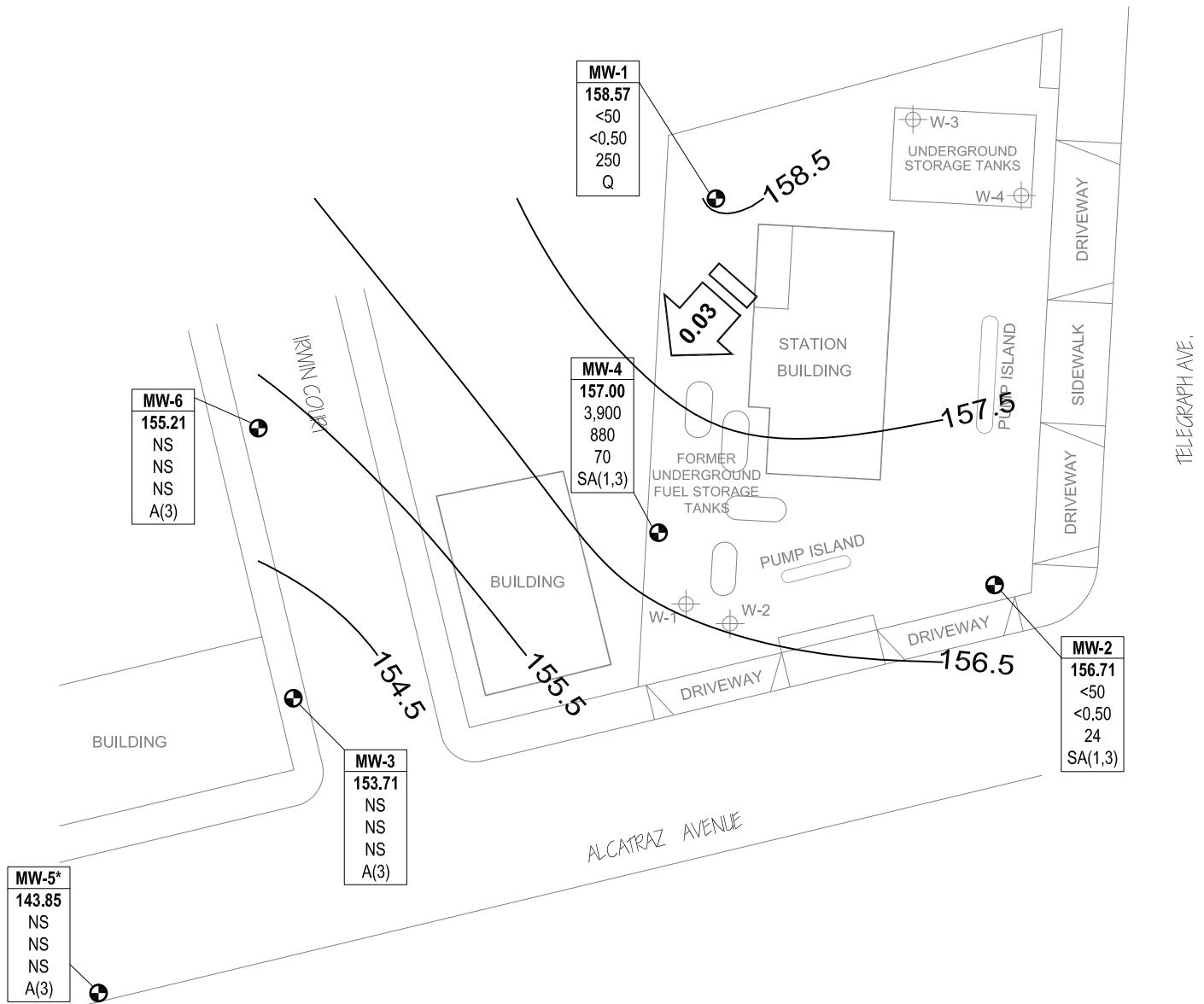
Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #374, 6407 Telegraph Ave., Oakland, California

Table 2. Summary of Fuel Additives Analytical Data, Station #374, 6407 Telegraph Ave.,  
Oakland, California

Table 3. Historical Ground-Water Flow Direction and Gradient, Station #374, 6407 Telegraph  
Ave., Oakland, California

Appendix A. Stratus Ground-Water Sampling Data Package (Includes Field Data Sheets and  
Laboratory Analytical Report with Chain-of-Custody Documentation)

Appendix B. GeoTracker Upload Confirmation



#### LEGEND

- MONITORING WELL
- TANK PIT MONITORING WELL
- WELL DESIGNATION
- ELEV GROUND-WATER ELEVATION (FT MSL)
- GRO, BENZENE & MTBE CONCENTRATIONS IN GROUND WATER ( $\mu\text{g/L}$ )
- Benzene
- MTBE
- A/Q/SA SAMPLING FREQUENCY
- < NOT DETECTED AT OR ABOVE LABORATORY LIMITS
- Q SAMPLED QUARTERLY
- SA(1,3) SAMPLED SEMI-ANNUALLY, 1ST & 3RD QUARTERS
- A(3) SAMPLED ANNUALLY, 3RD QUARTER
- NS NOT SAMPLED
- 0.03 APPROXIMATE GROUND-WATER FLOW AND DIRECTION (FT/FT)
- 155.5 GROUND-WATER ELEVATION CONTOUR (FT MSL)
- \* Elevation not used for contours

0 40 80  
SCALE (ft)

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.  
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
1324 Mangrove Ave. Suite 212, Chico, California  
Project No.: 06-08-602 Date: 3/27/08

Station #374  
6407 Telegraph Ave.  
Oakland, California

Ground-Water Elevation Contours  
and Analytical Summary Map  
22 February 2008

Drawing  
**1**

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-1</b>															
6/20/2000	--		158.91	7.00	27.0	6.86	152.05	--	--	--	--	--	--	--	--
9/28/2000	--		158.91	7.00	27.0	7.50	151.41	--	--	--	--	--	--	--	--
12/17/2000	--		158.91	7.00	27.0	7.49	151.42	--	--	--	--	--	--	--	--
3/23/2001	--		158.91	7.00	27.0	5.90	153.01	<50	<0.5	<0.5	<0.5	<0.5	2,710	--	--
6/21/2001	--		158.91	7.00	27.0	7.45	151.46	--	--	--	--	--	--	--	--
9/23/2001	--		158.91	7.00	27.0	8.46	150.45	--	--	--	--	--	--	--	--
12/31/2001	--		158.91	7.00	27.0	5.50	153.41	--	--	--	--	--	--	--	--
3/21/2002	--		158.91	7.00	27.0	4.71	154.20	<5,000	<50	<50	<50	<50	2,000	--	--
4/17/2002	--		158.91	7.00	27.0	5.54	153.37	--	--	--	--	--	--	--	--
8/12/2002	--		158.91	7.00	27.0	7.77	151.14	--	--	--	--	--	--	--	--
12/6/2002	--		158.91	7.00	27.0	7.65	151.26	--	--	--	--	--	--	--	--
1/29/2003	--	b	158.91	7.00	27.0	5.88	153.03	--	--	--	--	--	--	--	--
5/23/2003	--		158.91	7.00	27.0	5.62	153.29	<10,000	<100	<100	<100	<100	1,600	1.3	7.1
9/4/2003	--		158.91	7.00	27.0	7.85	151.06	--	--	--	--	--	--	--	--
11/20/2003	P		158.91	7.00	27.0	8.17	150.74	1,600	<10	<10	<10	<10	1,500	1.7	6.7
02/02/2004	P	f	164.57	7.00	27.0	6.71	157.86	--	--	--	--	--	--	1.0	--
05/14/2004	P		164.57	7.00	27.0	7.08	157.49	<2,500	<25	<25	<25	<25	1,200	1.4	6.6
09/02/2004	P		164.57	7.00	27.0	8.12	156.45	580	<5.0	<5.0	<5.0	<5.0	660	3.8	6.7
11/04/2004	P		164.57	7.00	27.0	7.38	157.19	1,700	<10	<10	<10	<10	580	6.0	6.5
02/08/2005	P		164.57	7.00	27.0	6.60	157.97	<1,000	<10	<10	<10	<10	610	0.71	6.5
05/09/2005	P	e	164.57	7.00	27.0	6.84	157.73	540	<5.0	<5.0	<5.0	<5.0	620	3.12	6.6
08/11/2005	P		164.57	7.00	27.0	7.36	157.21	540	<2.5	<2.5	<2.5	<2.5	4.0	390	0.8
11/18/2005	P	e	164.57	7.00	27.0	8.02	156.55	350	<2.5	<2.5	<2.5	<2.5	340	2.6	6.7
02/16/2006	P	e	164.57	7.00	27.0	6.44	158.13	350	<2.5	<2.5	<2.5	<2.5	340	1.6	6.7
5/30/2006	P		164.57	7.00	27.0	6.87	157.70	270	<2.5	<2.5	<2.5	<2.5	420	4.73	6.4
8/24/2006	P		164.57	7.00	27.0	7.75	156.82	95	<5.0	<5.0	<5.0	<5.0	180	0.65	6.9
11/1/2006	P		164.57	7.00	27.0	8.28	156.29	120	<5.0	<5.0	<5.0	<5.0	220	1.65	7.07
2/7/2007	NP	e	164.57	7.00	27.0	7.40	157.17	120	<5.0	<5.0	<5.0	<5.0	190	1.88	7.45
5/8/2007	P		164.57	7.00	27.0	6.50	158.07	<500	<5.0	<5.0	<5.0	<5.0	420	1.21	6.94
8/8/2007	NP	e	164.57	7.00	27.0	8.17	156.40	82	<0.50	<0.50	<0.50	<0.50	110	1.16	7.00
11/14/2007	NP		164.57	7.00	27.0	8.01	156.56	170	<2.5	<2.5	<2.5	<2.5	210	1.92	6.49

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1 Cont.															
2/22/2008	P		164.57	7.00	27.0	6.00	158.57	<50	<0.50	<0.50	<0.50	<0.50	250	2.57	6.65
MW-2															
6/20/2000	--		157.92	7.00	27.0	7.67	150.25	--	--	--	--	--	--	--	--
9/28/2000	--		157.92	7.00	27.0	8.51	149.41	--	--	--	--	--	--	--	--
12/17/2000	--		157.92	7.00	27.0	8.14	149.78	--	--	--	--	--	--	--	--
3/23/2001	--		157.92	7.00	27.0	7.21	150.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/21/2001	--		157.92	7.00	27.0	7.99	149.93	--	--	--	--	--	--	--	--
9/23/2001	--		157.92	7.00	27.0	8.52	149.40	--	--	--	--	--	--	--	--
12/31/2001	--		157.92	7.00	27.0	6.01	151.91	--	--	--	--	--	--	--	--
3/21/2002	--		157.92	7.00	27.0	5.95	151.97	<50	<0.5	<0.5	<0.5	<0.5	45	--	--
4/17/2002	--		157.92	7.00	27.0	6.45	151.47	--	--	--	--	--	--	--	--
8/12/2002	--		157.92	7.00	27.0	8.08	149.84	--	--	--	--	--	--	--	--
12/6/2002	--		157.92	7.00	27.0	8.29	149.63	--	--	--	--	--	--	--	--
1/29/2003	--	b	157.92	7.00	27.0	7.22	150.70	--	--	--	--	--	--	--	--
5/23/2003	--		157.92	7.00	27.0	6.85	151.07	<50	<0.50	<0.50	<0.50	<0.50	55	1.4	7.2
9/4/2003	--		157.92	7.00	27.0	7.94	149.98	--	--	--	--	--	--	--	--
11/20/2003	--		157.92	7.00	27.0	8.05	149.87	--	--	--	--	--	--	--	--
02/02/2004	P	f	163.46	7.00	27.0	7.00	156.46	74	<0.50	<0.50	<0.50	<0.50	37	1.1	8.9
05/14/2004	--		163.46	7.00	27.0	7.97	155.49	--	--	--	--	--	--	--	--
09/02/2004	P		163.46	7.00	27.0	8.19	155.27	<250	<2.5	<2.5	<2.5	<2.5	67	2.7	6.9
11/04/2004	--		163.46	7.00	27.0	7.54	155.92	--	--	--	--	--	--	--	--
02/08/2005	P		163.46	7.00	27.0	6.72	156.74	<50	<0.50	<0.50	<0.50	<0.50	30	0.86	6.7
05/09/2005	--		163.46	7.00	27.0	7.16	156.30	--	--	--	--	--	--	--	--
08/11/2005	P		163.46	7.00	27.0	7.85	155.61	<50	<0.50	<0.50	<0.50	<0.50	35	1.0	6.6
11/18/2005	--		163.46	7.00	27.0	8.23	155.23	--	--	--	--	--	--	--	--
02/16/2006	P		163.46	7.00	27.0	6.82	156.64	<50	<0.50	<0.50	<0.50	<0.50	39	1.3	7.0
5/30/2006	--		163.46	7.00	27.0	7.23	156.23	--	--	--	--	--	--	--	--
8/24/2006	P		163.46	7.00	27.0	8.00	155.46	60	<0.50	<0.50	<0.50	<0.50	25	0.90	6.8
11/1/2006	--		163.46	7.00	27.0	8.38	155.08	--	--	--	--	--	--	--	--
2/7/2007	NP		163.46	7.00	27.0	7.88	155.58	<50	0.50	<0.50	<0.50	<0.50	7.2	0.94	7.39

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-2 Cont.</b>															
5/8/2007	--		163.46	7.00	27.0	7.28	156.18	--	--	--	--	--	--	--	--
8/8/2007	NP		163.46	7.00	27.0	8.38	155.08	88	3.2	<0.50	<0.50	<0.50	7.2	0.94	7.75
11/14/2007	--		163.46	7.00	27.0	8.10	155.36	--	--	--	--	--	--	--	--
2/22/2008	P		163.46	7.00	27.0	6.75	156.71	<50	<0.50	<0.50	<0.50	<0.50	24	2.18	7.02
<b>MW-3</b>															
6/20/2000	--		153.64	7.00	27.0	6.42	147.22	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--
9/28/2000	--		153.64	7.00	27.0	7.31	146.33	--	--	--	--	--	--	--	--
12/17/2000	--		153.64	7.00	27.0	6.45	147.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		153.64	7.00	27.0	6.01	147.63	--	--	--	--	--	--	--	--
6/21/2001	--		153.64	7.00	27.0	6.80	146.84	110	5.5	<0.5	5.4	4.1	2.5	--	--
9/23/2001	--		153.64	7.00	27.0	7.32	146.32	--	--	--	--	--	--	--	--
12/31/2001	--		153.64	7.00	27.0	4.48	149.16	<50	<0.5	<0.5	<0.5	<0.5	4.9	--	--
3/21/2002	--		153.64	7.00	27.0	4.36	149.28	--	--	--	--	--	--	--	--
4/17/2002	--		153.64	7.00	27.0	5.31	148.33	<50	<0.5	<0.5	<0.5	<0.5	8.7	--	--
8/12/2002	--		153.64	7.00	27.0	7.00	146.64	--	--	--	--	--	--	--	--
12/6/2002	--		153.64	7.00	27.0	7.32	146.32	<50	<0.5	<0.5	<0.5	<0.5	6.2	1.4	6.7
1/29/2003	--	b	153.64	7.00	27.0	6.07	147.57	--	--	--	--	--	--	--	--
5/23/2003	--		153.64	7.00	27.0	6.45	147.19	<50	<0.50	<0.50	<0.50	<0.50	1.6	0.9	7.7
9/4/2003	--	c	153.64	7.00	27.0	6.93	146.71	--	--	--	--	--	--	--	--
11/20/2003	--	c	153.64	7.00	27.0	7.04	146.60	--	--	--	--	--	--	--	--
02/02/2004	--	f	159.21	7.00	27.0	5.92	153.29	--	--	--	--	--	--	--	--
05/14/2004	--		159.21	7.00	27.0	7.52	151.69	--	--	--	--	--	--	--	--
09/02/2004	P		159.21	7.00	27.0	7.19	152.02	<50	<0.50	<0.50	<0.50	<0.50	6.5	9.3	8.9
11/04/2004	--		159.21	7.00	27.0	6.40	152.81	--	--	--	--	--	--	--	--
02/08/2005	--		159.21	7.00	27.0	6.01	153.20	--	--	--	--	--	--	--	--
05/09/2005	--		159.21	7.00	27.0	6.74	152.47	--	--	--	--	--	--	--	--
08/11/2005	P		159.21	7.00	27.0	6.77	152.44	<50	<0.50	<0.50	<0.50	<0.50	11	1.9	6.5
11/18/2005	--		159.21	7.00	27.0	7.83	151.38	--	--	--	--	--	--	--	--
02/16/2006	--		159.21	7.00	27.0	7.26	151.95	--	--	--	--	--	--	--	--
5/30/2006	--		159.21	7.00	27.0	5.82	153.39	--	--	--	--	--	--	--	--

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-3 Cont.</b>															
8/24/2006	P		159.21	7.00	27.0	7.00	152.21	<50	<0.50	<0.50	<0.50	<0.50	7.6	1.15	6.4
11/1/2006	--		159.21	7.00	27.0	7.50	151.71	--	--	--	--	--	--	--	--
2/7/2007	--		159.21	7.00	27.0	6.90	152.31	--	--	--	--	--	--	--	--
5/8/2007	--		159.21	7.00	27.0	5.95	153.26	--	--	--	--	--	--	--	--
8/8/2007	NP		159.21	7.00	27.0	7.47	151.74	<50	<0.50	<0.50	<0.50	<0.50	1.2	1.21	6.93
11/14/2007	--		159.21	7.00	27.0	7.05	152.16	--	--	--	--	--	--	--	--
<b>2/22/2008</b>	--		<b>159.21</b>	<b>7.00</b>	<b>27.0</b>	<b>5.50</b>	<b>153.71</b>	--	--	--	--	--	--	--	--
<b>MW-4</b>															
6/20/2000	--	c	156.53	7.00	27.0	7.50	149.03	20,000	5,100	440	1,000	1,700	<250	--	--
9/28/2000	--		156.53	7.00	27.0	8.20	148.33	--	--	--	--	--	--	--	--
12/17/2000	--		156.53	7.00	27.0	8.11	148.42	4,320	1,240	<20	27.2	249	<100	--	--
3/23/2001	--		156.53	7.00	27.0	6.69	149.84	--	--	--	--	--	--	--	--
6/21/2001	--		156.53	7.00	27.0	8.01	148.52	2,800	470	16	19	160	130	--	--
9/23/2001	--		156.53	7.00	27.0	8.91	147.62	--	--	--	--	--	--	--	--
12/31/2001	--		156.53	7.00	27.0	4.42	152.11	4,600	1,500	100	160	210	160	--	--
3/21/2002	--		156.53	7.00	27.0	4.98	151.55	--	--	--	--	--	--	--	--
4/17/2002	--		156.53	7.00	27.0	6.23	150.30	7,100	2,200	110	290	450	<250	--	--
8/12/2002	--		156.53	7.00	27.0	8.24	148.29	--	--	--	--	--	--	--	--
12/6/2002	--	a	156.53	7.00	27.0	8.42	148.11	1,500	410	6.8	20	29	43	1.1	6.7
1/29/2003	--	b	156.53	7.00	27.0	7.20	149.33	--	--	--	--	--	--	--	--
5/23/2003	--		156.53	7.00	27.0	7.18	149.35	<5,000	1,300	89	210	260	<50	1.4	6.9
9/4/2003	--	c	156.53	7.00	27.0	8.15	148.38	--	--	--	--	--	--	--	--
11/20/2003	--	c	156.53	7.00	27.0	8.73	147.80	--	--	--	--	--	--	--	--
02/02/2004	P	c, f, g	163.25	7.00	27.0	6.25	157.00	980	280	21	29	38	29	1.4	10.6
05/14/2004	--	g	163.25	7.00	27.0	8.38	154.87	--	--	--	--	--	--	--	--
09/02/2004	P	g	163.25	7.00	27.0	8.36	154.89	260	11	<1.0	5.5	14	28	2.4	7.4
11/04/2004	--	c, g	163.25	7.00	27.0	7.71	155.54	--	--	--	--	--	--	--	--
02/08/2005	P	g	163.25	7.00	27.0	6.27	156.98	7,500	1,700	320	480	920	45	0.65	6.5
05/09/2005	--	g	163.25	7.00	27.0	5.90	157.35	--	--	--	--	--	--	--	--
08/11/2005	P	g	163.25	7.00	27.0	7.96	155.29	3,100	1,100	41	160	110	32	0.6	6.5

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-4 Cont.</b>															
11/18/2005	--	g	163.25	7.00	27.0	8.57	154.68	--	--	--	--	--	--	--	--
02/16/2006	P	g	163.25	7.00	27.0	6.28	156.97	9,400	1,800	130	600	420	35	0.5	6.8
5/30/2006	--	g	163.25	7.00	27.0	7.02	156.23	--	--	--	--	--	--	--	--
8/24/2006	P	g	162.47	7.00	27.0	8.26	154.21	3,600	1,400	21	110	70	39	1.00	6.8
11/1/2006	--		163.25	7.00	27.0	8.67	154.58	--	--	--	--	--	--	--	--
2/7/2007	NP		163.25	7.00	27.0	8.02	155.23	3,100	570	17	170	110	67	0.95	7.07
5/8/2007	--		163.25	7.00	27.0	7.03	156.22	--	--	--	--	--	--	--	--
8/8/2007	NP		163.25	7.00	27.0	8.60	154.65	2,900	630	22	67	57	72	0.93	6.79
11/14/2007	--		163.25	7.00	27.0	8.53	154.72	--	--	--	--	--	--	--	--
2/22/2008	P		163.25	7.00	27.0	6.25	157.00	3,900	880	39	180	92	70	2.31	6.87
<b>MW-5</b>															
6/20/2000	--		151.33	10.00	23.0	7.84	143.49	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--
9/28/2000	--		151.33	10.00	23.0	8.37	142.96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/17/2000	--		151.33	10.00	23.0	8.36	142.97	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/23/2001	--		151.33	10.00	23.0	7.55	143.78	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
6/21/2001	--		151.33	10.00	23.0	8.20	143.13	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
9/23/2001	--		151.33	10.00	23.0	8.68	142.65	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/31/2001	--		151.33	10.00	23.0	7.57	143.76	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
3/21/2002	--		151.33	10.00	23.0	6.12	145.21	<50	<0.5	<0.5	<0.5	<0.5	3.2	--	--
4/17/2002	--		151.33	10.00	23.0	6.61	144.72	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
8/12/2002	--		151.33	10.00	23.0	8.14	143.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.1	7.6
12/6/2002	--		151.33	10.00	23.0	8.65	142.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	6.8
1/29/2003	--	b	151.33	10.00	23.0	7.22	144.11	<50	<0.5	<0.5	<0.5	<0.5	<0.5	1	6.6
5/23/2003	--		151.33	10.00	23.0	7.31	144.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1
9/4/2003	--		151.33	10.00	23.0	9.50	141.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	6.7
11/20/2003	--		151.33	10.00	23.0	8.31	143.02	--	--	--	--	--	--	--	--
02/02/2004	--	c, f, h	151.33	10.00	23.0	6.92	144.41	--	--	--	--	--	--	--	--
05/14/2004	--	h	151.33	10.00	23.0	8.56	142.77	--	--	--	--	--	--	--	--
09/02/2004	P	h	151.33	10.00	23.0	8.79	142.54	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.5
11/04/2004	--	c, h	151.33	10.00	23.0	8.33	143.00	--	--	--	--	--	--	--	--

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-5 Cont.</b>															
02/08/2005	--	h	151.33	10.00	23.0	7.28	144.05	--	--	--	--	--	--	--	--
05/09/2005	--	h	151.33	10.00	23.0	8.19	143.14	--	--	--	--	--	--	--	--
08/11/2005	P	h	151.33	10.00	23.0	8.39	142.94	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.6
11/18/2005	--	h	151.33	10.00	23.0	11.25	140.08	--	--	--	--	--	--	--	--
02/16/2006	--	h	151.33	10.00	23.0	9.22	142.11	--	--	--	--	--	--	--	--
5/30/2006	--	h	151.33	10.00	23.0	7.52	143.81	--	--	--	--	--	--	--	--
8/24/2006	P	h	--	10.00	23.0	7.95	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.60	6.6
11/1/2006	--		151.33	10.00	23.0	8.32	143.01	--	--	--	--	--	--	--	--
2/7/2007	--		151.33	10.00	23.0	8.25	143.08	--	--	--	--	--	--	--	--
5/8/2007	--		151.33	10.00	23.0	7.60	143.73	--	--	--	--	--	--	--	--
8/8/2007	P		151.33	10.00	23.0	8.12	143.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.26	7.31
11/14/2007	--		151.33	10.00	23.0	9.10	142.23	--	--	--	--	--	--	--	--
2/22/2008	--		151.33	10.00	23.0	7.48	143.85	--	--	--	--	--	--	--	--
<b>MW-6</b>															
6/20/2000	--		153.84	5.00	15.0	4.79	149.05	--	--	--	--	--	--	--	--
9/28/2000	--		153.84	5.00	15.0	5.39	148.45	--	--	--	--	--	--	--	--
12/17/2000	--		153.84	5.00	15.0	4.71	149.13	--	--	--	--	--	--	--	--
3/23/2001	--		153.84	5.00	15.0	4.69	149.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	--
6/21/2001	--		153.84	5.00	15.0	5.22	148.62	--	--	--	--	--	--	--	--
9/23/2001	--		153.84	5.00	15.0	5.40	148.44	--	--	--	--	--	--	--	--
12/31/2001	--		153.84	5.00	15.0	3.95	149.89	--	--	--	--	--	--	--	--
3/21/2002	--		153.84	5.00	15.0	2.94	150.90	<50	<0.5	<0.5	<0.5	<0.5	5.2	--	--
4/17/2002	--		153.84	5.00	15.0	5.11	148.73	--	--	--	--	--	--	--	--
8/12/2002	--		153.84	5.00	15.0	5.23	148.61	--	--	--	--	--	--	--	--
12/6/2002	--		153.84	5.00	15.0	5.29	148.55	--	--	--	--	--	--	--	--
1/29/2003	--	b	153.84	5.00	15.0	4.79	149.05	--	--	--	--	--	--	--	--
5/23/2003	--		153.84	5.00	15.0	4.31	149.53	<50	<0.50	<0.50	<0.50	<0.50	9.4	1	6.7
09/04/03	--	d	153.84	5.00	15.0	--	--	--	--	--	--	--	--	--	--
11/20/2003	--		153.84	5.00	15.0	6.31	147.53	--	--	--	--	--	--	--	--
02/02/2004	--		159.41	5.00	15.0	4.78	154.63	--	--	--	--	--	--	--	--

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

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet msl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet msl)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
<b>MW-6 Cont.</b>															
05/14/2004	--		159.41	5.00	15.0	6.29	153.12	--	--	--	--	--	--	--	--
09/02/2004	--	d	159.41	5.00	15.0	5.79	153.62	--	--	--	--	--	--	--	--
11/04/2004	--	d	159.41	5.00	15.0	--	--	--	--	--	--	--	--	--	--
02/08/2005	--		159.41	5.00	15.0	5.13	154.28	--	--	--	--	--	--	--	--
05/09/2005	--		159.41	5.00	15.0	4.52	154.89	--	--	--	--	--	--	--	--
08/11/2005	P		159.41	5.00	15.0	5.02	154.39	<50	<0.50	<0.50	<0.50	<0.50	7.9	2.1	6.6
11/18/2005	--		159.41	5.00	15.0	6.31	153.10	--	--	--	--	--	--	--	--
02/16/2006	--		159.41	5.00	15.0	4.24	155.17	--	--	--	--	--	--	--	--
5/30/2006	--		159.41	5.00	15.0	4.45	154.96	--	--	--	--	--	--	--	--
8/24/2006	P		159.41	5.00	15.0	5.18	154.23	<50	<0.50	<0.50	<0.50	<0.50	12	3.4	6.8
11/1/2006	--		159.41	5.00	15.0	6.05	153.36	--	--	--	--	--	--	--	--
2/7/2007	--		159.41	5.00	15.0	5.00	154.41	--	--	--	--	--	--	--	--
5/8/2007	--		159.41	5.00	15.0	4.30	155.11	--	--	--	--	--	--	--	--
8/8/2007	NP		159.41	5.00	15.0	5.51	153.90	<50	<0.50	<0.50	<0.50	<0.50	0.57	2.94	6.87
11/14/2007	--		159.41	5.00	15.0	5.38	154.03	--	--	--	--	--	--	--	--
2/22/2008	--		159.41	5.00	15.0	4.70	154.71	--	--	--	--	--	--	--	--

**SYMBOLS AND ABBREVIATIONS:**

-- = Not analyzed/applicable/measured/available

< = Not detected at or above laboratory reporting limit

DO = Dissolved oxygen

DTW = Depth to water in ft bgs

ft bgs = Feet below ground surface

ft MSL = Feet above mean sea level

GRO = Gasoline range organics

GWE = Groundwater elevation measured in ft MSL

mg/L = Milligrams per liter

MTBE = Methyl tert-butyl ether

NP = Well was not purged prior to sampling

P = Well was purged prior to sampling

TOC = Top of casing measured in ft MSL

TPH-g = Total petroleum hydrocarbons as gasoline

µg/L = Micrograms per liter

BTEX = Benzene, toluene, ethylbenzene and xylenes

**FOOTNOTES:**

a = Chromatogram pattern: Gasoline C6-C10 for GRO/TPH-g.

b = Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel oxygenates.

c = Wells gauged with ORC sock in well.

d = Well inaccessible

e = The hydrocarbon result for GRO was partly due to individual peaks in the quantitative range.

f = Well resurveyed on 1/27/2004

g = Upon review of survey data (1/27/2004), TOC elevation for MW-4 is actually 162.47 ft.

h = Upon review of survey data (1/27/2004), MW-5 was not surveyed from the TOC. MW-5 was surveyed from the pavement due to inaccessibility to the TOC. Therefore, survey data for MW-5 from the TOC is unavailable.

**NOTES:**

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

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

Values for DO and pH were obtained through field measurements.

The DTW's and TOC's for wells MW-5 and MW-6 were taken from Delta Environmental sampling sheets because the well logs were not available.

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

Table 2. Summary of Fuel Additives Analytical Data

Station #374, 6407 Telegraph Ave., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-1</b>									
5/23/2003	<20,000	<4,000	1,600	<100	<100	<100	--	--	
11/20/2003	<2,000	<400	1,500	<10	<10	<10	--	--	a
05/14/2004	<5,000	<1,000	1,200	<25	<25	<25	<25	<25	
09/02/2004	<1,000	<200	660	<5.0	<5.0	<5.0	<5.0	<5.0	
11/04/2004	<2,000	<400	580	<10	<10	<10	<10	<10	
02/08/2005	<2,000	<400	610	<10	<10	<10	<10	<10	
05/09/2005	<1,000	<200	620	<5.0	<5.0	<5.0	<5.0	<5.0	a
08/11/2005	<500	250	390	<2.5	<2.5	2.6	<2.5	<2.5	a
11/18/2005	<500	<100	340	<2.5	<2.5	<2.5	<2.5	<2.5	a
02/16/2006	<1,500	<100	340	<2.5	<2.5	<2.5	<2.5	<2.5	
5/30/2006	<1,500	<100	420	<2.5	<2.5	<2.5	<2.5	<2.5	a
8/24/2006	<3,000	<200	180	<5.0	<5.0	<5.0	<5.0	<5.0	
11/1/2006	<3,000	<200	220	<5.0	<5.0	<5.0	<5.0	<5.0	a
2/7/2007	<3,000	<200	190	<5.0	<5.0	<5.0	<5.0	<5.0	
5/8/2007	<3,000	<200	420	<5.0	<5.0	<5.0	<5.0	<5.0	
8/8/2007	<300	<20	110	<0.50	<0.50	<0.50	<0.50	<0.50	
11/14/2007	<1,500	<100	210	<2.5	<2.5	<2.5	<2.5	<2.5	
2/22/2008	<300	<10	250	<0.50	<0.50	1.5	<0.50	<0.50	
<b>MW-2</b>									
5/23/2003	<100	<20	55	<0.50	<0.50	0.53	--	--	
02/02/2004	<100	<20	37	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<500	<100	67	<2.5	<2.5	<2.5	<2.5	<2.5	
02/08/2005	<100	<20	30	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	35	<0.50	<0.50	<0.50	<0.50	<0.50	a
02/16/2006	<300	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	
8/24/2006	<300	<20	25	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<300	<20	7.2	<0.50	<0.50	<0.50	<0.50	<0.50	
8/8/2007	<300	<20	7.2	<0.50	<0.50	<0.50	<0.50	<0.50	
2/22/2008	<300	<10	24	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-3</b>									

**Table 2. Summary of Fuel Additives Analytical Data**  
**Station #374, 6407 Telegraph Ave., Oakland, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
<b>MW-3 Cont.</b>									
5/23/2003	<100	<20	1.6	<0.50	<0.50	<0.50	--	--	
09/02/2004	<100	<20	6.5	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	a
8/24/2006	<300	<20	7.6	<0.50	<0.50	<0.50	<0.50	<0.50	
8/8/2007	<300	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-4</b>									
5/23/2003	<10,000	<2,000	<50	<50	<50	<50	--	--	
02/02/2004	<500	<100	29	<2.5	<2.5	2.6	<2.5	<2.5	
09/02/2004	<200	<40	28	<1.0	<1.0	<1.0	<1.0	<1.0	
02/08/2005	<5,000	<1,000	45	<25	<25	<25	<25	<25	
08/11/2005	<2,000	<400	32	<10	<10	<10	<10	<10	
02/16/2006	<6,000	<400	35	<10	<10	<10	<10	<10	
8/24/2006	<1,500	<100	39	<2.5	<2.5	<2.5	<2.5	<2.5	
2/7/2007	<6,000	<400	67	<10	<10	<10	<10	<10	
8/8/2007	<6,000	<400	72	<10	<10	<10	<10	<10	
2/22/2008	<6,000	<200	70	<10	<10	<10	<10	<10	
<b>MW-5</b>									
1/29/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	
5/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
9/4/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/24/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/8/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
<b>MW-6</b>									
5/23/2003	<100	<20	9.4	<0.50	<0.50	<0.50	--	--	
08/11/2005	<100	<20	7.9	<0.50	<0.50	<0.50	<0.50	<0.50	a
8/24/2006	<300	<20	12	<0.50	<0.50	<0.50	<0.50	<0.50	
8/8/2007	<300	<20	0.57	<0.50	<0.50	<0.50	<0.50	<0.50	

**SYMBOLS AND ABBREVIATIONS:**

-- = Not analyzed/applicable/measured/available

< = Not detected at or above the laboratory reporting limit

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert-butyl ether

MTBE = Methyl tert-butyl ether

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

µg/L = Micrograms per Liter

**FOOTNOTES:**

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

**NOTES:**

All volatile organic 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 Ground-Water Flow Direction and Gradient**  
**Station #374, 6407 Telegraph Ave., Oakland, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
1/31/1996	Southwest	0.04
4/10/1996	Southwest	0.04
7/16/1996	Southwest	0.03
10/14/1996	Southwest	0.03
3/27/1997	Southwest	0.04
5/27/1997	Southwest	0.03
8/12/1997	Southwest	0.04
11/17/1997	Southwest	0.03
3/16/1998	Southwest	0.03
5/12/1998	Southwest	0.04
7/27/1998	Southwest	0.04
10/15/1998	Southwest	0.02
2/18/1999	Southwest	0.05
5/24/1999	Southwest	0.03
8/27/1999	Southwest	0.03
10/26/1999	Southwest	0.03
2/3/2000	Southwest	0.047
6/20/2000	Southwest	0.035
9/28/2000	Southwest	0.034
12/17/2000	Southwest	0.032
3/23/2001	Southwest	0.034
6/21/2001	Southwest	0.032
9/23/2001	Southwest	0.029
12/31/2001	Southwest	0.043
3/21/2002	Southwest	0.038
4/17/2002	Southwest	0.031
8/12/2002	Southwest	0.032
12/6/2002	Southwest	0.020
1/29/2003	Southwest	0.027
5/23/2003	Southwest	0.039
9/4/2003	Southwest	0.033
11/20/2003	Southwest	0.029
2/2/2004	Southwest	0.043 (a)
5/14/2004	Southwest	0.037 (a)
9/2/2004	Southwest	0.027 (a)
11/4/2004	Southwest	0.034 (a)
2/8/2005	Southwest	0.061 (a)
5/9/2005	Southwest	0.08 (a)
8/11/2005	Southwest	0.06 (a)
11/18/2005	Southwest	0.07 (a)
2/16/2006	Southwest	0.09 (a)
5/30/2006	Southwest	0.06 (a)

**Table 3. Historical Ground-Water Flow Direction and Gradient**

Station #374, 6407 Telegraph Ave., Oakland, CA

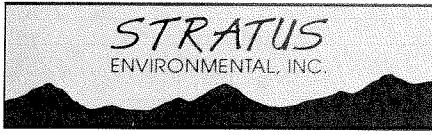
Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
8/24/2006	Southwest	0.03
11/1/2006	Southwest	0.02
2/7/2007	Southwest	0.03
5/8/2007	Southwest	0.03
8/8/2007	Southwest	0.03
11/14/2007	Southwest	0.03
<b>2/22/2008</b>	<b>Southwest</b>	<b>0.03</b>

a = Gradients potentially suspect due to error in MW-4 and MW-5 TOC measuring point elevations discovered third quarter 2006.

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**

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



3330 Cameron Park Drive, Ste 550  
Cameron Park, California 95682  
(530) 676-6004 ~ Fax: (530) 676-6005

March 11, 2008

Mr. Rob Miller  
Broadbent & Associates, Inc.  
2000 Kirman Avenue  
Reno, NV 89502

Re: Groundwater Sampling Data Package, BP Service Station No. 374, located at 6407 Telegraph Avenue, Oakland, California

### **General Information**

*Data Submittal Prepared / Reviewed by:* Sandy Hayes / Jay Johnson

*Phone Number:* (530) 676-6000

*On-Site Supplier Representative:* Jerry Gonzales

*Sampling Date:* February 22, 2008

*Arrival:* 15:40                   *Departure:* 17:45

*Weather Conditions:* Partly Cloudy

*Unusual Field Conditions:* None

*Scope of Work Performed:* Quarterly monitoring and sampling

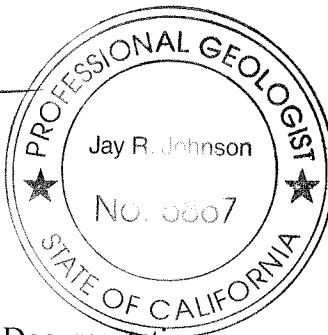
*Variations from Work Scope:* None

This submittal presents the tabulation of data collected in association with routine groundwater monitoring. The attachments include field data sheets, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations. Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

**STRATUS ENVIRONMENTAL, INC.**

Jay R. Johnson, P.G.  
Project Manager



**Attachments:**

- Field Data Sheets
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Monitoring

CC: Mr. Paul Supple, BP/ARCO

## *BP ALAMEDA PORTFOLIO*

## HYDROLOGIC DATA SHEET

AK-15:40 RP:1295

Gauge Date: 2/22/08

Project Name: *Oakland - 6407 Telegraph Ave.*

Field Technician: Jerry

Project Number: 374

**TOC** = Top of Well Casing Elevation  
**DTP** = Depth to Free Product (FP or NAPH) Below TOC  
**DTW** = Depth to Groundwater Below TOC  
**DTB** = Depth to Bottom of Well Casing Below TOC

DIA = Well Casing Diameter  
ELEV = Groundwater Elevation  
DUP = Duplicate

cal EC 1413 400 2-21-09  
OH 7.00 1 of 1

**BP ALAMEDA PORTFOLIO**  
**WATER SAMPLE FIELD DATA SHEET**

PROJECT #: <u>374</u>	PURGED BY: <u>J.C.</u>	WELL I.D.: <u>MW-1</u>					
CLIENT NAME: _____	SAMPLED BY: <u>J.C.</u>	SAMPLE I.D.: <u>MW-1</u>					
LOCATION: <u>Oakland - 6407 Telegraph Ave.</u>	QA SAMPLES: _____						
DATE PURGED <u>2/22/08</u>	START (2400hr) <u>16:20</u>	END (2400hr) <u>16:26</u>					
DATE SAMPLED <u>2/22/08</u>	SAMPLE TIME (2400hr) <u>16:35</u>						
SAMPLE TYPE: <u>Groundwater</u> <input checked="" type="checkbox"/>	<u>Surface Water</u> <input type="checkbox"/>	<u>Treatment Effluent</u> <input type="checkbox"/>					
<u>Treatment Effluent</u> <input type="checkbox"/>	<u>Other</u> <input type="checkbox"/>						
CASING DIAMETER: Casing Volume: (gallons per foot)	2" <u>(0.17)</u>	3" <u>(0.38)</u>	4" <u>(0.67)</u>	5" <u>(1.02)</u>	6" <u>(1.50)</u>	8" <u>(2.60)</u>	Other _____
DEPTH TO BOTTOM (feet) =	<u>76.55</u>		CASING VOLUME (gal) = <u>13.0</u>				
DEPTH TO WATER (feet) =	<u>6.00</u>		CALCULATED PURGE (gal) = <u>41.2</u>				
WATER COLUMN HEIGHT (feet) =	<u>70.5</u>		ACTUAL PURGE (gal) = <u>41.5</u>				
FIELD MEASUREMENTS							
DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>2/22/08</u>	<u>16:22</u>	<u>13.2</u>	<u>73</u>	<u>869</u>	<u>6.87</u>	<u>clear</u>	
	<u>16:24</u>	<u>26.5</u>	<u>76.7</u>	<u>844</u>	<u>6.23</u>	<u>f</u>	
	<u>16:26</u>	<u>41.0</u>	<u>76.9</u>	<u>891</u>	<u>6.65</u>		
SAMPLE INFORMATION							
SAMPLE DEPTH TO WATER:	<u>8.69</u>			SAMPLE TURBIDITY: <u>clear</u>			
80% RECHARGE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ANALYSES: <u>SWO</u>						
ODOR: <u>No</u>	SAMPLE VESSEL / PRESERVATIVE: <u>6 Voss-HC</u>						
PURGING EQUIPMENT				SAMPLING EQUIPMENT			
Bladder Pump	Bailer (Teflon)	Bladder Pump	Bailer (Teflon)				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
Centrifugal Pump	Bailer (PVC)	Centrifugal Pump	<input checked="" type="checkbox"/> PVC or <input checked="" type="checkbox"/> disposable				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
Submersible Pump	Bailer (Stainless Steel)	Submersible Pump	Bailer (Stainless Steel)				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Peristaltic Pump	Dedicated	Peristaltic Pump	Dedicated				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Other: _____	Other: _____						
Pump Depth: <u>70</u>							
WELL INTEGRITY: <u>DO 257</u>				LOCK #: <u>Master</u>			
REMARKS: <u>good</u>							
SIGNATURE: <u>J.C.</u>				Page <u>1</u> of <u>1</u>			





### **Wellhead Observation Form**

Account: \_\_\_\_\_

Sampled by: Jerry Date: 4/22/08

NO. 663567

## NON-HAZARDOUS WASTE DATA FORM

TRANSPORTER	SITE:		EPA ID NO.	NOT REQUIRED																			
	NAME: BP WEST COAST PRODUCTS LLC ARCO #374		PROFILE NO.																				
TSD FACILITY	ADDRESS: P.O. BOX 80249 RANCHO SANTA MARGARITA CA 92688		PHONE NO. ( ) - ( )																				
	CITY, STATE, ZIP																						
CONTAINERS: No.		VOLUME 121.6 gal		WEIGHT																			
TYPE: <input type="checkbox"/> TANK TRUCK <input type="checkbox"/> DUMP TRUCK <input type="checkbox"/> DRUMS <input type="checkbox"/> CARTONS <input type="checkbox"/> OTHER																							
WASTE DESCRIPTION: NON-HAZARDOUS WATER COMPONENTS OF WASTE		GENERATING PROCESS: WELL PURGING/DECON WATER COMPONENTS OF WASTE		PPM % PPM %																			
1. WATER 99-100%		5.																					
2. TPH <1%		6.																					
3.		7. BESI#																					
4.		8.																					
PROPERTIES: <input checked="" type="checkbox"/> LIQUID <input type="checkbox"/> SOLID <input type="checkbox"/> SLUDGE <input type="checkbox"/> SLURRY <input type="checkbox"/> OTHER																							
HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PROTECTIVE CLOTHING																							
THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.			DATE																				
Transporter #1 NAME: STRATUS ENVIRONMENTAL		Transporter #2 NAME: Larry Moehart BEST for BP		EPA ID NO.																			
ADDRESS: 3330 CAMERON PARK DR		CITY, STATE, ZIP: CAMERON PARK, CA 95682		SERVICE ORDER NO.																			
PHONE NO. 530-676-2031				PICK UP DATE																			
TRUCK, UNIT, I.D. NO.		<i>Jerry Scandalo</i> TYPED OR PRINTED FULL NAME & SIGNATURE		DATE																			
NAME: INSTRAT, INC				EPA ID NO.																			
ADDRESS: 1105 AIRPORT RD #C				DISPOSAL METHOD																			
CITY, STATE, ZIP: RIO VISTA, CA 94571				<input type="checkbox"/> LANDFILL <input type="checkbox"/> OTHER																			
PHONE NO. 530-753-1829																							
TYPED OR PRINTED FULL NAME & SIGNATURE DATE																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">GEN</th> <th style="width: 15%;">OLD/NEW</th> <th style="width: 15%;">L</th> <th style="width: 15%;">A</th> <th style="width: 15%;">TONS</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>TRANS</td> <td></td> <td>S</td> <td>B</td> <td></td> <td></td> </tr> <tr> <td>C/O</td> <td></td> <td>R/HCO</td> <td>HWD/F</td> <td>NONE</td> <td>DISCREPANCY</td> </tr> </tbody> </table>						GEN	OLD/NEW	L	A	TONS		TRANS		S	B			C/O		R/HCO	HWD/F	NONE	DISCREPANCY
GEN	OLD/NEW	L	A	TONS																			
TRANS		S	B																				
C/O		R/HCO	HWD/F	NONE	DISCREPANCY																		



A BP affiliated company

## Chain of Custody Record

Project Name: BP 374

BP BU/AR Region/Envos Segment: BP > Americas > West > Retail > CA > Alameda>374

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy):

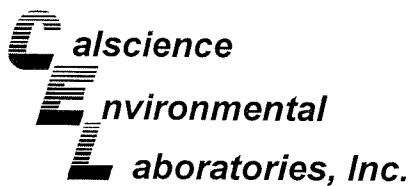
On-site Time: 1540	Temp: 60
Off-site Time: 1745	Temp: 67
Sky Conditions: Partly Cloudy	
Meteorological Events: No TC	
Wind Speed: 9 MPH	Direction: NW

Lab Name: Calscience	BP/AR Facility No.: 374	Consultant/Contractor: Stratus Environmental, Inc.
Address: 7440 Lincoln Way Garden Grove, CA 92841	BP/AR Facility Address: 6407 Telegraph Ave., Oakland	Address: 3330 Cameron Park Drive, Suite 550 Cameron Park, CA 95682
Lab PM: Linda Scharpenberg	Site Lat/Long:	Consultant/Contractor Project No.: E374-04
Tele/Fax: 714-895-5494 714-895-7501(fax)	California Global ID #: T0600100106	Consultant/Contractor PM: Jay Johnson
BP/AR PM Contact: Paul Supple	Envos Project No.: G0C21-0021	Tele/Fax: (530) 676-6000 / (530) 676-6005
Address: 2010 Crow Canyon Place, Suite 150 San Ramon, CA	Provision or RCOP (circle one) Provision	Report Type & QC Level: Level I with EDF
Tele/Fax: 925-275-3506	Phase/WBS: 04-Monitoring	E-mail EDD To: shayes@stratusinc.net
Lab Bottle Order No:	Sub Phase/Task: 03-Analytical	Invoice to: Atlantic Richfield Co.
	Cost Element: 01-Contractor labor	

Item No.	Sample Description	Time	Date	Matrix	Laboratory No.	No. of Containers	Preservative				Requested Analysis				Sample Point Lat/Long and Comments *Oxy = MTBD, TAME, ETBE, DIPE, TBA	
							Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	BTEX/Oxy* by 8260	1,2 DCA	Ethanol	EDB	
1	MW-1	16:35	2/27/08	X		6			X			X	X	X	X	
2	MW-2	16:55		X		6			X			X	X	X	X	
3	MW-3			X					X			X	X	X	X	
4	MW-4	17:30		X		6			X			X	X	X	X	
5	MW-5			X					X			X	X	X	X	
6	MW-6			X					X			X	X	X	X	
7	TB 374 - 22.208	16:00		X		2			X							HOLD
8																
9																
10																

Sampler's Name: Jerry Gonzales	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Stratus Env						
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

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



March 05, 2008

Jay Johnson  
Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Subject: **Calscience Work Order No.: 08-02-1886**  
Client Reference: **BP 374**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/26/2008 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. 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.

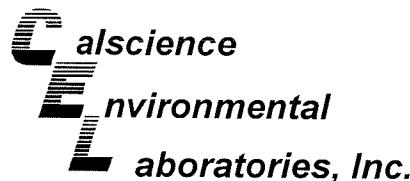
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads "Linda Scharpenberg".

Linda Scharpenberg

Calscience Environmental  
Laboratories, Inc.  
Linda Scharpenberg  
Project Manager



## Analytical Report

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: BP 374

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	08-02-1886-1-D	02/22/08 16:35	Aqueous	GC 29	02/26/08	02/27/08 06:13	080225B03

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>					
1,4-Bromofluorobenzene	67	38-134			

MW-2	08-02-1886-2-D	02/22/08 16:55	Aqueous	GC 29	02/26/08	02/27/08 06:47	080225B03
------	----------------	----------------	---------	-------	----------	----------------	-----------

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>					
1,4-Bromofluorobenzene	65	38-134			

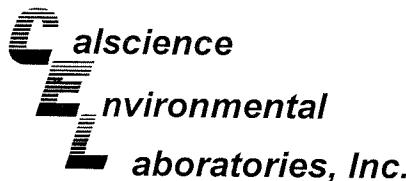
MW-4	08-02-1886-3-D	02/22/08 17:30	Aqueous	GC 29	02/26/08	02/27/08 07:21	080225B03
------	----------------	----------------	---------	-------	----------	----------------	-----------

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	3900	250	5		ug/L
<u>Surrogates:</u>					
1,4-Bromofluorobenzene	94	38-134			

Method Blank	099-12-695-34	N/A	Aqueous	GC 29	02/26/08	02/26/08 18:20	080225B03
--------------	---------------	-----	---------	-------	----------	----------------	-----------

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>					
1,4-Bromofluorobenzene	65	38-134			

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



## Analytical Report

Stratus Environmental, Inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: ug/L

Project: BP 374

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	08-02-1886-1-A	02/22/08 16:35	Aqueous	GC/MS Z	03/03/08	03/03/08 18:52	080303L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	250	10	20	
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)	1.5	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>		<u>REC (%)</u>	<u>Control</u>	<u>Limits</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control</u>	<u>Limits</u>	<u>Qual</u>
1,2-Dichloroethane-d4	109	73-157			Dibromofluoromethane	114	82-142		
Toluene-d8	92	82-112			1,4-Bromofluorobenzene	87	75-105		

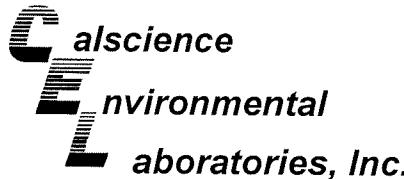
MW-2	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
	08-02-1886-2-A	02/22/08 16:55	Aqueous	GC/MS Z	03/03/08	03/03/08 19:23	080303L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	24	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</u>	<u>Limits</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control</u>	<u>Limits</u>	<u>Qual</u>
1,2-Dichloroethane-d4	104	73-157			Dibromofluoromethane	109	82-142		
Toluene-d8	96	82-112			1,4-Bromofluorobenzene	88	75-105		

MW-4	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
	08-02-1886-3-A	02/22/08 17:30	Aqueous	GC/MS Z	03/03/08	03/03/08 19:53	080303L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	880	25	50		Methyl-t-Butyl Ether (MTBE)	70	10	20	
1,2-Dibromoethane	ND	10	20		Tert-Butyl Alcohol (TBA)	ND	200	20	
1,2-Dichloroethane	ND	10	20		Diisopropyl Ether (DIPE)	ND	10	20	
Ethylbenzene	180	10	20		Ethyl-t-Butyl Ether (ETBE)	ND	10	20	
Toluene	39	10	20		Tert-Amyl-Methyl Ether (TAME)	ND	10	20	
Xylenes (total)	92	10	20		Ethanol	ND	6000	20	
<u>Surrogates:</u>		<u>REC (%)</u>	<u>Control</u>	<u>Limits</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control</u>	<u>Limits</u>	<u>Qual</u>
1,2-Dichloroethane-d4	110	73-157			Dibromofluoromethane	111	82-142		
Toluene-d8	98	82-112			1,4-Bromofluorobenzene	98	75-105		

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



## Analytical Report

Stratus Environmental, Inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: ug/L

Project: BP 374

Page 2 of 2

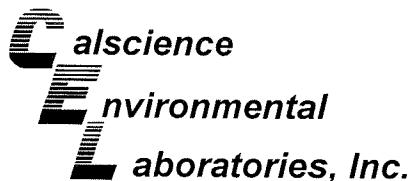
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>Method Blank</b>	099-12-703-63	N/A	Aqueous	GC/MS Z	03/03/08	03/03/08 11:18	080303L01

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	
<b>Surrogates:</b>	<u>REC (%)</u>	<u>Control</u>		<u>Qual</u>	<b>Surrogates:</b>	<u>REC (%)</u>	<u>Control</u>		<u>Qual</u>
1,2-Dichloroethane-d4	109	73-157			Dibromofluoromethane	109	82-142		
Toluene-d8	97	82-112			1,4-Bromofluorobenzene	89	75-105		

Method Blank	099-12-703-66	N/A	Aqueous	GC/MS Z	03/04/08	03/04/08 11:25	080304L01
--------------	---------------	-----	---------	---------	----------	----------------	-----------

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	
<b>Surrogates:</b>	<u>REC (%)</u>	<u>Control</u>		<u>Qual</u>	<b>Surrogates:</b>	<u>REC (%)</u>	<u>Control</u>		<u>Qual</u>
1,2-Dichloroethane-d4	112	73-157			Dibromofluoromethane	115	82-142		
Toluene-d8	95	82-112			1,4-Bromofluorobenzene	88	75-105		

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



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project BP 374

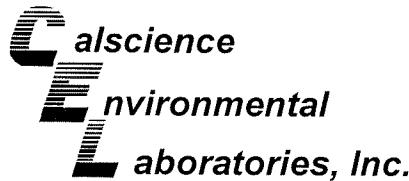
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-02-1762-1	Aqueous	GC 29	02/26/08	02/26/08	080225S03

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	98	96	38-134	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B

Project BP 374

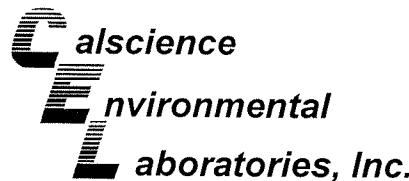
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-02-1959-1	Aqueous	GC/MS Z	03/03/08	03/03/08	080303S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	109	111	86-122	2	0-8	
Carbon Tetrachloride	105	107	78-138	2	0-9	
Chlorobenzene	110	112	90-120	1	0-9	
1,2-Dibromoethane	115	107	70-130	8	0-30	
1,2-Dichlorobenzene	109	108	89-119	1	0-10	
1,1-Dichloroethene	117	123	52-142	5	0-23	
Ethylbenzene	111	114	70-130	3	0-30	
Toluene	110	113	85-127	3	0-12	
Trichloroethene	106	108	78-126	1	0-10	
Vinyl Chloride	90	93	56-140	3	0-21	
Methyl-t-Butyl Ether (MTBE)	121	109	64-136	10	0-28	
Tert-Butyl Alcohol (TBA)	114	119	27-183	4	0-60	
Diisopropyl Ether (DIPE)	112	109	78-126	3	0-16	
Ethyl-t-Butyl Ether (ETBE)	117	113	67-133	3	0-21	
Tert-Amyl-Methyl Ether (TAME)	127	118	63-141	7	0-21	
Ethanol	99	133	11-167	29	0-64	

RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: 02/26/08  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B

Project BP 374

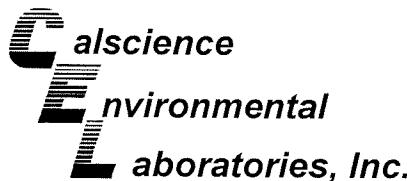
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-02-2084-11	Aqueous	GC/MS Z	03/04/08	03/04/08	080304S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	98	99	86-122	1	0-8	
Carbon Tetrachloride	97	96	78-138	1	0-9	
Chlorobenzene	99	101	90-120	2	0-9	
1,2-Dibromoethane	96	100	70-130	4	0-30	
1,2-Dichlorobenzene	94	97	89-119	3	0-10	
1,1-Dichloroethene	100	107	52-142	6	0-23	
Ethylbenzene	100	102	70-130	2	0-30	
Toluene	98	99	85-127	0	0-12	
Trichloroethene	94	96	78-126	2	0-10	
Vinyl Chloride	75	78	56-140	4	0-21	
Methyl-t-Butyl Ether (MTBE)	93	94	64-136	1	0-28	
Tert-Butyl Alcohol (TBA)	98	101	27-183	3	0-60	
Diisopropyl Ether (DIPE)	97	96	78-126	1	0-16	
Ethyl-t-Butyl Ether (ETBE)	94	94	67-133	1	0-21	
Tert-Amyl-Methyl Ether (TAME)	99	102	63-141	3	0-21	
Ethanol	92	94	11-167	3	0-64	

RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

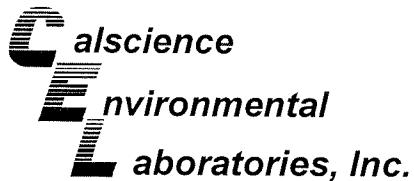
Project: BP 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-34	Aqueous	GC 29	02/26/08	02/26/08	080225B03

Parameter	<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)	105	105	78-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: BP 374

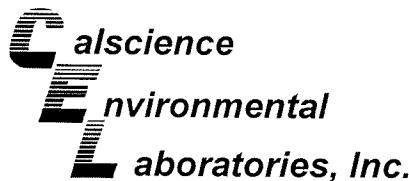
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-63	Aqueous	GC/MS Z	03/03/08	03/03/08	080303L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	101	102	87-117	1	0-7	
Carbon Tetrachloride	98	99	78-132	1	0-8	
Chlorobenzene	102	103	88-118	1	0-8	
1,2-Dibromoethane	102	102	80-120	0	0-20	
1,2-Dichlorobenzene	104	102	88-118	2	0-8	
1,1-Dichloroethene	112	114	71-131	1	0-14	
Ethylbenzene	104	105	80-120	1	0-20	
Toluene	100	102	85-127	2	0-7	
Trichloroethene	100	101	85-121	1	0-11	
Vinyl Chloride	86	84	64-136	2	0-10	
Methyl-t-Butyl Ether (MTBE)	108	111	67-133	3	0-16	
Tert-Butyl Alcohol (TBA)	103	100	34-154	2	0-19	
Diisopropyl Ether (DIPE)	102	104	80-122	2	0-8	
Ethyl-t-Butyl Ether (ETBE)	110	113	73-127	3	0-11	
Tert-Amyl-Methyl Ether (TAME)	117	119	69-135	2	0-12	
Ethanol	92	102	34-124	10	0-44	

RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 08-02-1886  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: BP 374

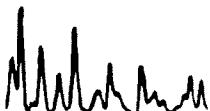
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-66	Aqueous	GC/MS Z	03/04/08	03/04/08	080304L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	100	97	87-117	2	0-7	
Carbon Tetrachloride	96	93	78-132	3	0-8	
Chlorobenzene	101	99	88-118	2	0-8	
1,2-Dibromoethane	103	100	80-120	3	0-20	
1,2-Dichlorobenzene	98	97	88-118	1	0-8	
1,1-Dichloroethene	110	94	71-131	15	0-14	X
Ethylbenzene	102	101	80-120	1	0-20	
Toluene	100	96	85-127	3	0-7	
Trichloroethene	95	93	85-121	3	0-11	
Vinyl Chloride	78	79	64-136	2	0-10	
Methyl-t-Butyl Ether (MTBE)	98	98	67-133	0	0-16	
Tert-Butyl Alcohol (TBA)	101	93	34-154	8	0-19	
Diisopropyl Ether (DIPE)	97	98	80-122	0	0-8	
Ethyl-t-Butyl Ether (ETBE)	98	98	73-127	0	0-11	
Tert-Amyl-Methyl Ether (TAME)	105	104	69-135	0	0-12	
Ethanol	99	92	34-124	7	0-44	

RPD - Relative Percent Difference , CL - Control Limit

Work Order Number: 08-02-1886

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.





bp  
A BP affiliated company

## Chain of Custody Record

Project Name: BP 374

BP BU/AR Region/Enfos Segment:

BP > Americas > West > Retail > CA > Alameda>374

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy): \_\_\_\_\_

1886

Page 1 of 1

On-site Time: <u>1540</u>	Temp: <u>60</u>
Off-site Time: <u>17:45</u>	Temp: <u>67</u>
Sky Conditions: <u>Partly Cloudy</u>	
Meteorological Events: <u>No</u>	
Wind Speed: <u>9 mph</u>	Direction: <u>NW</u>

Lab Name: Calscience	BP/AR Facility No.: <u>374</u>	Consultant/Contractor: Stratus Environmental, Inc.
Address: 7440 Lincoln Way Garden Grove, CA 92841	BP/AR Facility Address: <u>6407 Telegraph Ave., Oakland</u>	Address: <u>3330 Cameron Park Drive, Suite 550</u> <u>Cameron Park, CA 95682</u>
Lab PM: Linda Scharpenberg	Site Lat/Long: <u>California Global ID #:</u> <u>T0600100106</u>	Consultant/Contractor Project No.: <u>E374-04</u>
Tele/Fax: <u>714-895-5494</u> <u>714-895-7501(fax)</u>	Enfos Project No.: <u>G0C21-0021</u>	Consultant/Contractor PM: <u>Jay Johnson</u>
BP/AR PM Contact: Paul Supple	Provision or RCOP (circle one) <u>Provision</u>	Tele/Fax: <u>(530) 676-6000 / (530) 676-6005</u>
Address: 2010 Crow Canyon Place, Suite 150 San Ramon, CA	Phase/WBS: <u>04-Monitoring</u>	Report Type & QC Level: <u>Level 1 with EDF</u>
Tele/Fax: <u>925-275-3506</u>	Sub Phase/Task: <u>03-Analytical</u>	E-mail EDD To: <u>shayes@stratusinc.net</u>
	Cost Element: <u>01-Contractor labor</u>	Invoice to: <u>Atlantic Richfield Co.</u>

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix	Laboratory No.	No. of Containers	Preservative				Requested Analysis					Sample Point Lat/Long and Comments *Oxy = MTBD, TAME, ETBE, DIPE, TBA
							Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	BTEX/Oxy* by 8260	1,2 DCA	Ethanol	EDB	GRO by 8015m
1	MW-1	16:35	2/27/08	X		6				X		X	X	X	X	
2	MW-2	16:55		X		6				X		X	X	X	X	
3	MW-3			X						X		X	X	X	X	
4	MW-4	17:30		X		6				X		X	X	X	X	
5	MW-5			X						X		X	X	X	X	
6	MW-6			X						X		X	X	X	X	
7	TB 374-22208	600		X		2				X		X	X	X	X	
8																HOLD
9																
10																

Sampler's Name: Jerry Gonzales

Sampler's Company: Stratus Env

Shipment Date:

Shipment Method:

Shipment Tracking No: 105748768

Special Instructions:

Please cc results to: rmiller@broadbentinc.com

Relinquished By / Affiliation

Date

Time

Accepted By / Affiliation

Date

Time

J. Miller

2/26/08 0930

Custody Seals In Place: Yes / No

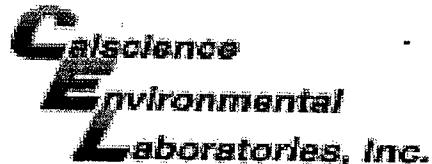
Temp Blank: Yes / No

Cooler Temp on Receipt:

°F/C

Trip Blank: Yes / No

MS/MSD Sample Submitted: Yes / No



WORK ORDER #: 08 - 0 2 - 1 8 8 6

Cooler 1 of 1

## SAMPLE RECEIPT FORM

CLIENT: Stratus

DATE: 2/26/08

**TEMPERATURE – SAMPLES RECEIVED BY:****CALSCIENCE COURIER:**

- Chilled, cooler with temperature blank provided.
- Chilled, cooler without temperature blank.
- Chilled and placed in cooler with wet ice.
- Ambient and placed in cooler with wet ice.
- Ambient temperature.
  
- °C Temperature blank.

**LABORATORY (Other than Calscience Courier):**

- 3.9 °C Temperature blank.
- °C IR thermometer.
- Ambient temperature.

Initial: JF

**CUSTODY SEAL INTACT:**Sample(s): \_\_\_\_\_ Cooler:  No (Not Intact): \_\_\_\_\_ Not Present: \_\_\_\_\_

Initial: JF

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<input checked="" type="checkbox"/>	.....	.....
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	.....	.....
Sample container label(s) consistent with custody papers.....	<input checked="" type="checkbox"/>	.....	.....
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	.....	.....
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	.....	.....
Proper preservation noted on sample label(s).....	<input checked="" type="checkbox"/>	.....	.....
VOA vial(s) free of headspace.....	<input checked="" type="checkbox"/>	.....	.....
Tedlar bag(s) free of condensation.....	.....	.....	<input checked="" type="checkbox"/>

Initial: JF

**COMMENTS:**

---

---

---

---

---

---

**APPENDIX B**

**GEOTRACKER UPLOAD CONFIRMATION**

# Electronic Submittal Information

[Main Menu](#) | [View/Add Facilities](#) | [Upload EDD](#) | [Check EDD](#)

## UPLOADING A GEO\_WELL FILE

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

**Submittal Title:** 1Q08 GEO\_WELL 374

**Facility Global ID:** T0600100106

**Facility Name:** ARCO #0374

**Submittal Date/Time:** 3/25/2008 2:42:43 PM

**Confirmation Number:** **2931734979**

[Back to Main Menu](#)

Logged in as BROADBENT-C  
(CONTRACTOR)

CONTACT SITE [ADMINISTRATOR](#).

# Electronic Submittal Information

[Main Menu](#) | [View/Add Facilities](#) | [Upload EDD](#) | [Check EDD](#)

Your EDF file has been successfully uploaded!

**Confirmation Number:** 3382562816

**Date/Time of Submittal:** 3/25/2008 2:46:30 PM

**Facility Global ID:** T0600100106

**Facility Name:** ARCO #0374

**Submittal Title:** 1Q08 GW Monitoring

**Submittal Type:** GW Monitoring Report

**Click [here](#) to view the detections report for this upload.**

ARCO #0374  
6407 TELEGRAPH  
OAKLAND, CA 94609

**Regional Board - Case #:** 01-0114  
SAN FRANCISCO BAY RWQCB (REGION 2)  
**Local Agency (lead agency) - Case #:** RO0000078  
ALAMEDA COUNTY LOP - (PK)

<b>CONF #</b>	<b>TITLE</b>	<b>QUARTER</b>
3382562816	1Q08 GW Monitoring	Q1 2008
<b>SUBMITTED BY</b>	<b>SUBMIT DATE</b>	<b>STATUS</b>
Broadbent & Associates, Inc.	3/25/2008	PENDING REVIEW

## **SAMPLE DETECTIONS REPORT**

# FIELD POINTS SAMPLED	3
# FIELD POINTS WITH DETECTIONS	3
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	2
SAMPLE MATRIX TYPES	WATER

## **METHOD QA/QC REPORT**

METHODS USED	M8015,SW8260B
TESTED FOR REQUIRED ANALYTICS?	Y
LAB NOTE DATA QUALIFIERS	N

## **QA/QC FOR 8021/8260 SERIES SAMPLES**

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0
DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	Y
- MATRIX SPIKE	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE	Y

## **WATER SAMPLES FOR 8021/8260 SERIES**

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	Y
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	Y
<b>SURROGATE SPIKES % RECOVERY BETWEEN 85-115%</b>	<b>N</b>
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	Y

**SOIL SAMPLES FOR 8021/8260 SERIES**

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	n/a
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	n/a
SURROGATE SPIKES % RECOVERY BETWEEN 70-125%	n/a
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	n/a

**FIELD QC SAMPLES**

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPDL</u>
QCTB SAMPLES	N	0
QCCEB SAMPLES	N	0
QCAB SAMPLES	N	0

Logged in as BROADBENT-C (CONTRACTOR)

CONTACT SITE [ADMINISTRATOR](#).