Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

PO Box 1257
San Ramon, CA 94583
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30 April 2010

Re: First Quarter 2010 Semi-Annual 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,

Chuck Carmel
Environmental Business Manager

Attachment:

First Quarter 2010 Semi-Annual
Ground-Water Monitoring Report
Atlantic Richfield Company Station #374
6407 Telegraph Avenue, Oakland, California
ACEH Case #RO0000078

Prepared for

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

Prepared by

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

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
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30 April 2010

Project No. 06-88-602

Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
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BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

30 April 2010

Project No. 06-88-602

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

Attn.: Mr. Chuck Carmel

Re: First Quarter 2010 Semi-Annual Ground-Water Monitoring Report, Atlantic Richfield Company Station #374, 6407 Telegraph Avenue, Oakland, Alameda County, California
ACEH Case #RO0000078

Dear Mr. Carmel:

Attached is the *First Quarter 2010 Semi-Annual Ground-Water Monitoring Report* for Atlantic Richfield Company (a BP affiliated 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 2010.

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.

Thomas A. Venus, P.E.
Senior Engineer

Enclosures

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

STATION #374 GROUND-WATER MONITORING REPORT

Facility: #374 Address:	6407 Telegraph Avenue, Oakland, California
Environmental Business Manager:	Mr. Chuck Carmel
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Mr. Tom Venus, PE (530) 566-1400
Consultant Project No.:	06-88-602
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000078
Facility Permits/Permitting Agency:	NA

WORK PERFORMED THIS QUARTER (First Quarter 2010):

1. Prepared and submitted *Fourth Quarter 2009 Status Report* (BAI, 01/22/2010).
2. Conducted ground-water monitoring/sampling for First Quarter 2010. Work performed on 19 February 2010 by BAI.

WORK PROPOSED FOR NEXT QUARTER (Second Quarter 2010):

1. Prepare and submit this *First Quarter 2010 Semi-Annual Ground-Water Monitoring Report* (contained herein).
2. Prepare and submit Soil & Ground-Water Investigation Work Plan to ACEH by 5 May 2010.
3. No environmental field work is presently scheduled at the Site for Second Quarter 2010.

RESULTS SUMMARY:

Current phase of project:	**Ground-water monitoring/sampling/characterization**
Frequency of ground-water monitoring:	**Semi-Annually: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6**
Frequency of ground-water sampling:	**Semi-Annually (1Q and 3Q): MW-1, MW-2 and MW-4** **Annually (3Q): MW-3, MW-5, and MW-6**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**5.31 ft (MW-3) to 7.36 ft (MW-2)**
General ground-water flow direction:	**West-Southwest**
Approximate hydraulic gradient:	**0.05 ft/ft**

DISCUSSION:

First quarter 2010 ground-water monitoring and sampling was conducted at Station #374 on 19 February 2010 by BAI. Water levels were gauged in five of the six wells at the Site. Well MW-5 was inaccessible due to a parked car. No other irregularities were noted in the field during this quarter's water level gauging. Depth-to-water measurements ranged from 5.31 ft at MW-3 to 7.36 ft at MW-2. Resulting ground-water surface elevations ranged from 158.50 ft above datum in well MW-1 to 152.13 ft at well MW-6. Water level elevations are summarized in Table 1. Water level elevations yielded a potentiometric ground-water flow direction and gradient to the west-southwest at approximately 0.05 ft/ft. 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. Current and historic ground-water flow directions and gradients are provided in Table 3. A Site Location Map is provided as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

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 Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl ether (DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), and Ethanol 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.

GRO was detected above the laboratory reporting limits in well MW-4 at concentrations of 12,000 micrograms per liter (µg/L). Benzene, Ethylbenzene, Toluene, and Total Xylenes were detected above the laboratory reporting limit in well MW-4 at concentrations of 1,200 µg/L, 230 µg/L, 120 µg/L and 390 µg/L, respectively. MTBE was detected above the laboratory reporting limits in two of the three wells sampled at concentrations up to 170 µg/L in well MW-1. TAME was detected above the laboratory reporting limits in one of the three wells sampled at concentrations of 1.2 µg/L in well MW-1. The remaining fuel constituents were not detected above their laboratory reporting limits in the three 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. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

Water level elevations were within historical minimum and maximum ranges in each well with the exception of a historic maximum level observed in well MW-3. The potentiometric ground-water flow direction and gradient was generally consistent with historical data. Detected analyte concentrations were within the historic minimum and maximum ranges recorded for each well with the exception of a historic minimum MTBE concentration observed in well MW-4. Hydrocarbon concentrations remained relatively stable in comparison to recent sampling events. Concentrations of GRO, Benzene, and MTBE are significant, justifying current efforts to characterize the contaminated soil and ground water at the Site. A Soil & Ground-Water Investigation Work Plan is in preparation for submittal by 11 May 2010, with the goal of gathering the information necessary to prepare a Feasibility Study and/or Corrective Action Plan by 12 August 2010. The next ground-water monitoring and sampling event will be conducted during the Third Quarter of 2010.

CLOSURE:

The findings presented in this report are based upon: observations of BAI field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, California). Our services were performed in accordance with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of Atlantic Richfield Company. It is possible that variations in soil or 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. Site Location Map, Station #374, 6407 Telegraph Avenue, Oakland, California

Drawing 2. Ground-Water Elevation Contours and Analytical Summary Map, 19 February 2010, Station #374, 6407 Telegraph Avenue, Oakland, California

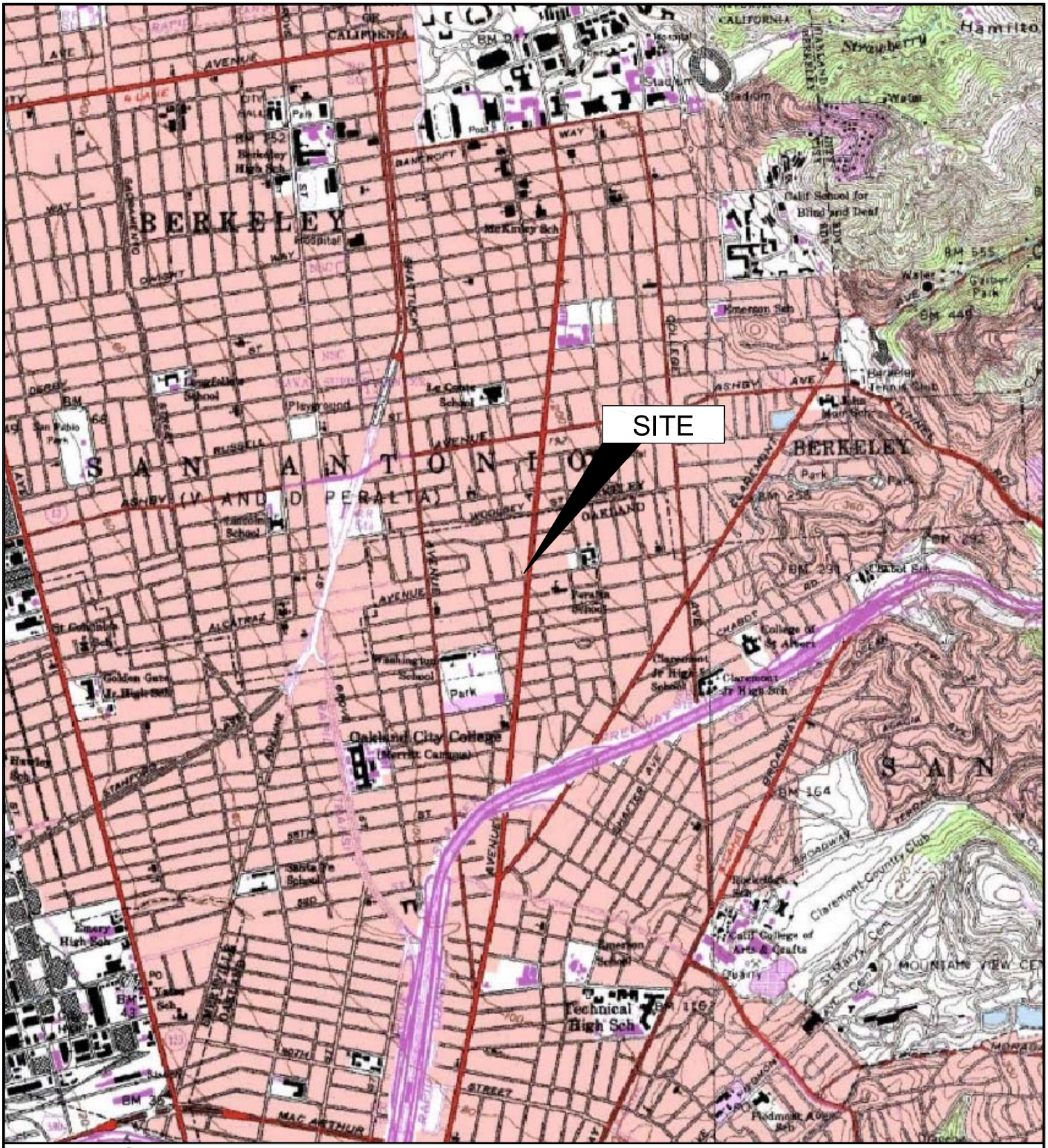
Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #374, 6407 Telegraph Ave., Oakland, California

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

Appendix B. GeoTracker Upload Confirmation Receipts



N

0 2000 4000

APPROXIMATE SCALE (ft)

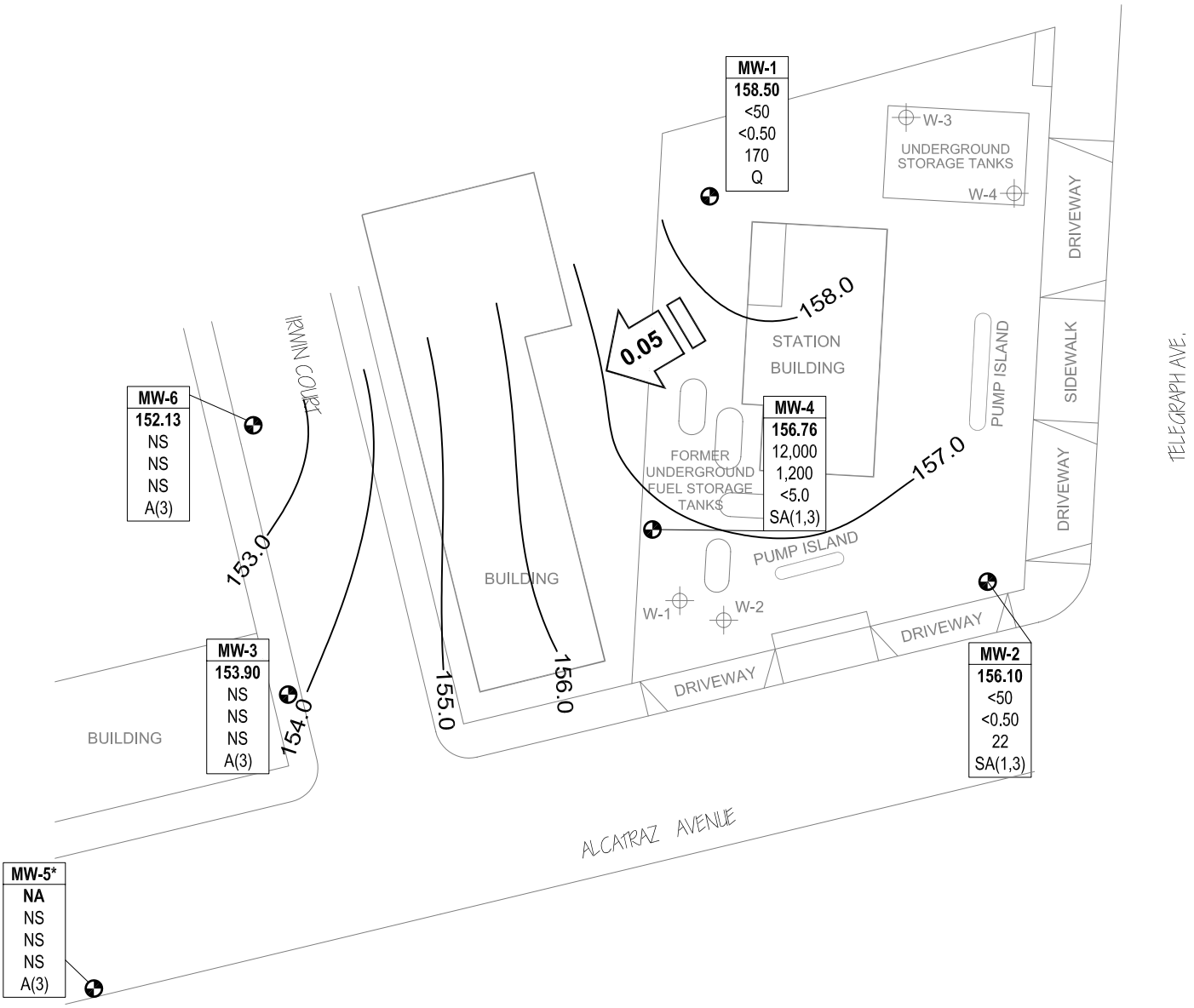
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-602 Date: 10/30/09

Station #374
6407 Telegraph Ave.
Oakland, California

Site Location Map

Drawing
1



LEGEND

⊕	MONITORING WELL
⊕	TANK PIT MONITORING WELL
Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT)
GRO Benzene MTBE	GRO, BENZENE & MTBE CONCENTRATIONS IN GROUND WATER (µg/L)
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/NA	NOT SAMPLED/ NOT AVAILABLE
0.05	APPROXIMATE GROUND-WATER FLOW AND DIRECTION (FT/FT)
—155.0	GROUND-WATER ELEVATION CONTOUR (FT)
*	Elevation not used for contours

N

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.: 06-88-602 Date: 03/24/10

Station #374
6407 Telegraph Ave.
Oakland, California

Ground-Water Elevation Contours and Analytical Summary Map
19 February 2010

Drawing
2

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)	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	--		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	5.5	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	4.0	390	0.8	6.6
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)	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 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
5/24/2008	NP		164.57	7.00	27.0	7.58	156.99	<50	<5.0	<5.0	<5.0	<5.0	380	2.28	6.81
8/21/2008	NP		164.57	7.00	27.0	8.60	155.97	<50	<2.5	<2.5	<2.5	<2.5	170	2.16	6.98
11/19/2008	NP		164.57	7.00	27.0	8.88	155.69	<50	<0.50	<0.50	<0.50	<0.50	30	2.12	7.27
2/23/2009	P		164.57	7.00	27.0	6.40	158.17	78	<2.5	<2.5	<2.5	<2.5	240	2.19	6.03
5/14/2009	P		164.57	7.00	27.0	6.67	157.90	53	<0.50	<0.50	<0.50	<0.50	200	1.75	6.69
8/20/2009	NP	i (GRO)	164.57	7.00	27.0	8.25	156.32	150	<2.0	<2.0	<2.0	<2.0	170	2.14	6.25
2/19/2010	**P**		**164.57**	**7.00**	**27.0**	**6.07**	**158.50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**170**	**0.92**	**6.66**
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	--	--	--	--	--	--	--	--

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)	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.															
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
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
5/24/2008	--		163.46	7.00	27.0	7.98	155.48	--	--	--	--	--	--	--	--
8/21/2008	NP		163.46	7.00	27.0	8.58	154.88	<50	2.6	<0.50	<0.50	<0.50	4.9	2.20	7.11
11/19/2008	--		163.46	7.00	27.0	8.66	154.80	--	--	--	--	--	--	--	--
2/23/2009	P		163.46	7.00	27.0	6.67	156.79	74	1.0	<0.50	<0.50	<0.50	24	2.25	6.16
5/14/2009	--		163.46	7.00	27.0	7.02	156.44	--	--	--	--	--	--	--	--
8/20/2009	NP		163.46	7.00	27.0	8.41	155.05	82	2.4	<0.50	<0.50	<0.50	8.4	2.19	6.37
2/19/2010	**NP**		**163.46**	**7.00**	**27.0**	**7.36**	**156.10**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**22**	**0.81**	**6.90**
MW-3															
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

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)	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.															
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	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
2/22/2008	--		159.21	7.00	27.0	5.50	153.71	--	--	--	--	--	--	--	--
5/24/2008	--		159.21	7.00	27.0	7.03	152.18	--	--	--	--	--	--	--	--
8/21/2008	NP		159.21	7.00	27.0	7.80	151.41	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.11	6.84
11/19/2008	--		159.21	7.00	27.0	7.69	151.52	--	--	--	--	--	--	--	--
2/23/2009	--		159.21	7.00	27.0	7.28	151.93	--	--	--	--	--	--	--	--
5/14/2009	--		159.21	7.00	27.0	6.17	153.04	--	--	--	--	--	--	--	--
8/20/2009	NP		159.21	7.00	27.0	7.38	151.83	<50	<0.50	<0.50	<0.50	<0.50	2.2	2.05	7.01
2/19/2010	--		**159.21**	**7.00**	**27.0**	**5.31**	**153.90**	--	--	--	--	--	--	--	--
MW-4															
6/20/2000	--	c	156.53	7.00	**27.0**	7.50	149.03	20,000	5,100	440	1,000	1,700	<250	--	--

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)	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.															
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
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	162.47	7.00	**27.0**	7.02	155.45	--	--	--	--	--	--	--	--
8/24/2006	P		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	--		162.47	7.00	27.0	8.67	153.80	--	--	--	--	--	--	--	--
2/7/2007	NP		162.47	7.00	27.0	8.02	154.45	3,100	570	17	170	110	67	0.95	7.07
5/8/2007	--		162.47	7.00	27.0	7.03	155.44	--	--	--	--	--	--	--	--
8/8/2007	NP		162.47	7.00	27.0	8.60	153.87	2,900	630	22	67	57	72	0.93	6.79
11/14/2007	--		162.47	7.00	27.0	8.53	153.94	--	--	--	--	--	--	--	--
2/22/2008	P		162.47	7.00	27.0	6.25	156.22	3,900	880	39	180	92	70	2.31	6.87

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)	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.															
5/24/2008	--	d	162.47	7.00	27.0	--	--	--	--	--	--	--	--	--	--
8/21/2008	NP		162.47	7.00	27.0	8.96	153.51	3,700	1,100	26	85	130	53	2.26	6.80
11/19/2008	--		162.47	7.00	27.0	9.20	153.27	--	--	--	--	--	--	--	--
2/23/2009	P		162.47	7.00	27.0	6.35	156.12	3,000	220	9.1	23	19	39	2.21	6.51
5/14/2009	--		162.47	7.00	27.0	7.00	155.47	--	--	--	--	--	--	--	--
8/20/2009	NP		162.47	7.00	27.0	8.05	154.42	5,700	1,100	35	110	100	23	2.17	6.81
2/19/2010	**P**	**i**	**162.47**	**7.00**	**27.0**	**5.71**	**156.76**	**12,000**	**1,200**	**120**	**230**	**390**	**<5.0**	**0.81**	**6.70**
MW-5															
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	1.1	6.6
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	3.5	6.8
11/04/2004	--	c, h	151.33	10.00	23.0	8.33	143.00	--	--	--	--	--	--	--	--
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

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)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-5 Cont.															
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	--	10.00	**23.0**	7.52	--	--	--	--	--	--	--	--	--
8/24/2006	P		--	10.00	23.0	7.95	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.60	6.6
11/1/2006	--		--	10.00	23.0	8.32	--	--	--	--	--	--	--	--	--
2/7/2007	--		--	10.00	23.0	8.25	--	--	--	--	--	--	--	--	--
5/8/2007	--		--	10.00	23.0	7.60	--	--	--	--	--	--	--	--	--
8/8/2007	P		--	10.00	23.0	8.12	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.26	7.31
11/14/2007	--		--	10.00	23.0	9.10	--	--	--	--	--	--	--	--	--
2/22/2008	--		--	10.00	23.0	7.48	--	--	--	--	--	--	--	--	--
5/24/2008	--		--	10.00	23.0	8.12	--	--	--	--	--	--	--	--	--
8/21/2008	P		--	10.00	23.0	8.65	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.14	6.54
11/19/2008	--		--	10.00	23.0	11.86	--	--	--	--	--	--	--	--	--
2/23/2009	--		--	10.00	23.0	10.20	--	--	--	--	--	--	--	--	--
5/14/2009	--		--	10.00	23.0	9.63	--	--	--	--	--	--	--	--	--
8/20/2009	P		--	10.00	23.0	8.52	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.01	6.47
2/19/2010	--	**d**	--	**10.00**	**23.0**	--	--	--	--	--	--	--	--	--	--
MW-6															
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	<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	--	--	--	--	--	--	--	--

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)	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.															
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	--	f	159.41	5.00	15.0	4.78	154.63	--	--	--	--	--	--	--	--
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	--	--	--	--	--	--	--	--
5/24/2008	--		159.41	5.00	15.0	5.25	154.16	--	--	--	--	--	--	--	--
8/21/2008	NP		159.41	5.00	15.0	6.14	153.27	<50	<0.50	<0.50	<0.50	<0.50	1.9	1.99	7.13
11/19/2008	--		159.41	5.00	15.0	5.94	153.47	--	--	--	--	--	--	--	--
2/23/2009	--		159.41	5.00	15.0	5.00	154.41	--	--	--	--	--	--	--	--
5/14/2009	--		159.41	5.00	15.0	4.60	154.81	--	--	--	--	--	--	--	--
8/20/2009	NP		159.41	5.00	15.0	5.65	153.76	<50	<0.50	<0.50	<0.50	<0.50	2.0	1.98	6.81
2/19/2010	--		**159.41**	**5.00**	**15.0**	**7.28**	**152.13**	--	--	--	--	--	--	--	--

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 below TOC
ft bgs = Feet below ground surface
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well was not purged prior to sampling
P = Well was purged prior to sampling
TOC = Top of casing measured in ft
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 to NAVD88
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. Historic data prior to 5/30/2006 (change in consultant) not modified.
i = Quantitation of unknown hydrocarbon(s) in sample based on gasoline.

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.

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

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	
MW-1									
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	
5/24/2008	<3,000	<100	380	<5.0	<5.0	<5.0	<5.0	<5.0	
8/21/2008	<1,500	<50	170	<2.5	<2.5	<2.5	<2.5	<2.5	
10/19/2008	<300	<10	30	<0.50	<0.50	<0.50	<0.50	<0.50	
2/23/2009	<1,500	<50	240	<2.5	<2.5	<2.5	<2.5	<2.5	
5/14/2009	<300	<10	200	<0.50	<0.50	1.3	<0.50	<0.50	
8/20/2009	<1,200	<40	170	<2.0	<2.0	<2.0	<2.0	<2.0	
2/19/2010	**<300**	**<10**	**170**	**<0.50**	**<0.50**	**1.2**	**<0.50**	**<0.50**	
MW-2									
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

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	
MW-2 Cont.									
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	
8/21/2008	<300	<10	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
2/23/2009	<300	<10	24	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2009	<300	<10	8.4	<0.50	<0.50	<0.50	<0.50	<0.50	
2/19/2010	**<300**	**<10**	**22**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3									
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	
8/21/2008	<300	<10	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2009	<300	<10	2.2	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-4									
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	
8/21/2008	<12,000	<400	53	<20	<20	<20	<20	<20	
2/23/2009	<3,000	<100	39	<5.0	<5.0	<5.0	<5.0	<5.0	

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	
MW-4 Cont.									
8/20/2009	<12,000	<400	23	<20	<20	<20	<20	<20	
2/19/2010	**<3,000**	**<100**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	
MW-5									
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	
8/21/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6									
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	
8/21/2008	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
8/20/2009	<300	<10	2.0	<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 limi
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
2/22/2008	Southwest	0.03
5/24/2008	Southwest	0.03
8/21/2008	Southwest	0.03
11/19/2008	Southwest	0.03
2/23/2009	Southwest	0.04
5/14/2009	Southwest	0.03
8/20/2009	Southwest	0.03
2/19/2010	**West-Southwest**	**0.05**

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

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

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

DAILY REPORT
Page 1 of 1

Project: BP 374 Project No.: 06-88-602

Field Representative(s): E. Farrar T. Geddes Day: Friday Date: 9/19/10

Time Onsite: From: _____ To: _____; From: _____ To: _____; From: _____ To: _____

Y Signed HASP Y Safety Glasses Y Hard Hat Y Steel Toe Boots Y Safety Vest
Y UST Emergency System Shut-off Switches Located Y Proper Gloves
Y Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Overcast, 50's

Equipment In Use: Service truck, 3 bailers, DTW probe, Pump, pH probe

Visitors: _____

TIME:	WORK DESCRIPTION:
0815	Onsite BP 374
1015	offsite to BP 2107
	15 gal pump rinsewater

Signature: _____

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

FIELD DATA REPORT

DATE: 2/19/10
PERSONNEL: ~~BG's, Oliver~~ Efuller T. Geddes
WEATHER: 60's, overcast

PROJECT NO.: 06.88.602
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
mw-1	0836	TOC	6.07									
mw-2	0850	↓	7.36									
mw-3	0911	↓	5.31									
mw-4	0844 (overwritten)	↓	5.71									
mw-5		↓										unable to collect due to parked car
mw-6	0915	↓	7.29									

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

Groundwater Sampling Data Sheet

Well I.D.: MW-1
Project Name/Location: BP 374 — Project #: 06-58-602
Sampler's Name: E. Fuller T. Geddes — Date: 2/18/10
Purging Equipment: Pump
Sampling Equipment: Bailer
Casing Type: PVC

Casing Diameter:		4	inch
Total Well Depth:		26.67	feet
Depth to Water:	-	6.07	feet
Water Column Thickness:	=	20.6	feet
Unit Casing Volume*:	x	0.65	gallon / foot
Casing Water Volume:	=	13.3	gallons
Casing Volume:	x	3	each
Estimated Purge Volume:	=	40.17	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	0927	0.92	64.		828.9	61.5	6.72	
10	0930	X	X	X	841.9	61.6	6.72	
20	0933	X	X	X	838.3	61.6	6.66	
25	0935	X	X	X	837.4	61.4	6.65	
30	0937	X	X	X	844.5	62.3	6.65	
34	0939	0.57	X	X	846.4	62.7	6.66	
		X	X	X				
		X	X	X				

Total Water Volume Purged: 34 gallons
Depth to Water at Sample Collection: 19.98 feet
Sample Collection Time: 0945
Purged Dry? (Y (N))

Comments: TD 26.81

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

Groundwater Sampling Data Sheet

Well I.D.: MW-2
Project Name/Location: BP 374 Project #: 08.88.802
Sampler's Name: E. Farra / T. Godde Date: 2/19/10
Purging Equipment:
Sampling Equipment:
Casing Type: PVC

Casing Diameter:		4	inch
Total Well Depth:		26.29	feet
Depth to Water:	-	7.36	feet
Water Column Thickness:	=		feet
Unit Casing Volume*:	x	0.65	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	0900	0.81	74		612.9	65.2	6.90	
		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: 0 gallons
Depth to Water at Sample Collection: 7.36 feet
Sample Collection Time: 0900
Purged Dry? (Y / N)

Comments: No Purge @ 7'
DTB 26.38

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

Groundwater Sampling Data Sheet

Well I.D.: MW-4
Project Name/Location: BP 374 — Project #: 06.88.602
Sampler's Name: E. Foran T. Geddes — Date: 2/19/18
Purging Equipment: Pump
Sampling Equipment: Bailer
Casing Type: PVC

Casing Diameter:	4	inch	
Total Well Depth:	26.98	feet	
Depth to Water:	- 5.71	feet	
Water Column Thickness:	= 21.24	feet	
Unit Casing Volume*:	x 0.65	gallon / foot	
Casing Water Volume:	= 13.8	gallons	
Casing Volume:	x 3	each	
Estimated Purge Volume:	= 41.4	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	0859	0.81	110		1094	63.9	6.73	
15	1005	x	x	x	1172	63.0	6.67	
33	1010	0.61	x	x	1109	63.4	6.70	
		x	x	x				
		x	x	x				
		x	x	x				
		x	x	x				
		x	x	x				

Total Water Volume Purged: 33 gallons
Depth to Water at Sample Collection: 17.20 feet
Sample Collection Time: 1020
Purged Dry? (Y / N)

Comments: OTB 26.98

NO. 857336

NON-HAZARDOUS WASTE DATA FORM

1. BESI #

GENERATOR

2. Generator's Name and Mailing Address

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

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

BP 374
6407 Telegraph Ave
Oakland, CA

Generator's Phone: (949) 460-5200

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

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

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

5. Designated Facility Name and Site Address

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

Phone #: (530) 753-1829

6. Waste Shipping Name and Description	7. Containers No.	7. Containers Type	8. Total Quantity	9. Unit Wt/Vol	10. Profile No.
A. NON-HAZARDOUS WATER	1	TT	82	G	
B.					
C.					
D.					

11. Special Handling Instructions and Additional Information

WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

WELL PURGING / DECON WATER

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

Generator's/Offeror's Printed/Typed Name: Eric Farrar — Signature: [signature] — Month: 2 — Day: 19 — Year: 10

TRANSPORTER

13. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Eric Farrar — Signature: [signature] — Month: 2 — Day: 22 — Year: 10

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

FACILITY

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

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

GENERATOR (ORIGINAL)

Calscience Environmental Laboratories, Inc.

March 10, 2010

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

Subject: **Calscience Work Order No.: 10-02-1916**
Client Reference: ARCO 374

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/24/2010 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,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 02/24/10
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**10-02-1916-1-E**	**02/19/10 09:45**	**Aqueous**	**GC 11**	**02/25/10**	**02/26/10 02:34**	**100225B01**

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

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	90	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-02-1916-2-E**	**02/19/10 09:00**	**Aqueous**	**GC 11**	**02/25/10**	**02/26/10 03:08**	**100225B01**

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

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	95	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**10-02-1916-3-E**	**02/19/10 10:20**	**Aqueous**	**GC 11**	**02/25/10**	**02/26/10 03:42**	**100225B01**

Comment(s): -LW = Quantitated against gasoline.

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	12000	250	5		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	122	38-134	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-763**	**N/A**	**Aqueous**	**GC 11**	**02/25/10**	**02/25/10 19:15**	**100225B01**

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

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	90	38-134	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	02/24/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-02-1916
Chico, CA 95926-2642		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**10-02-1916-1-A**	**02/19/10 09:45**	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10 16:18**	**100227L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	170	5.0	10	
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)	1.2	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	95	80-128			Dibromofluoromethane	88	80-127		
Toluene-d8	96	80-120			1,4-Bromofluorobenzene	93	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**10-02-1916-2-A**	**02/19/10 09:00**	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10 16:46**	**100227L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	22	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	95	80-128			Dibromofluoromethane	93	80-127		
Toluene-d8	94	80-120			1,4-Bromofluorobenzene	91	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	**10-02-1916-3-A**	**02/19/10 10:20**	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10 17:14**	**100227L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1200	50	100		Methyl-t-Butyl Ether (MTBE)	ND	5.0	10	
1,2-Dibromoethane	ND	5.0	10		Tert-Butyl Alcohol (TBA)	ND	100	10	
1,2-Dichloroethane	ND	5.0	10		Diisopropyl Ether (DIPE)	ND	5.0	10	
Ethylbenzene	230	5.0	10		Ethyl-t-Butyl Ether (ETBE)	ND	5.0	10	
Toluene	120	5.0	10		Tert-Amyl-Methyl Ether (TAME)	ND	5.0	10	
Xylenes (total)	390	5.0	10		Ethanol	ND	3000	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	91	80-128			Dibromofluoromethane	95	80-127		
Toluene-d8	107	80-120			1,4-Bromofluorobenzene	103	68-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Broadbent & Associates, Inc.		Date Received:	02/24/10
1324 Mangrove Ave, Ste 212		Work Order No:	10-02-1916
Chico, CA 95926-2642		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-1,244**	**N/A**	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10 12:04**	**100227L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	94	80-128			Dibromofluoromethane	99	80-127		
Toluene-d8	95	80-120			1,4-Bromofluorobenzene	90	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-1,247**	**N/A**	**Aqueous**	**GC/MS BB**	**02/28/10**	**02/28/10 12:29**	**100228L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	89	80-128			Dibromofluoromethane	96	80-127		
Toluene-d8	95	80-120			1,4-Bromofluorobenzene	89	68-120		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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

Date Received: 02/24/10
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1922-3	**Aqueous**	**GC 11**	**02/25/10**	**02/25/10**	**100225S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	101	103	38-134	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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

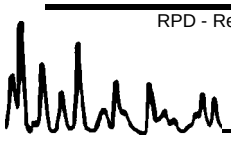
Date Received: 02/24/10
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-2258-4	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10**	**100227S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	94	91	76-124	4	0-20	
Carbon Tetrachloride	92	93	74-134	2	0-20	
Chlorobenzene	94	94	80-120	0	0-20	
1,2-Dibromoethane	88	88	80-120	1	0-20	
1,2-Dichlorobenzene	96	91	80-120	5	0-20	
1,1-Dichloroethene	90	87	73-127	3	0-20	
Ethylbenzene	98	99	78-126	1	0-20	
Toluene	99	97	80-120	2	0-20	
Trichloroethene	94	92	77-120	2	0-20	
Vinyl Chloride	43	97	72-126	77	0-20	
Methyl-t-Butyl Ether (MTBE)	85	89	67-121	5	0-49	
Tert-Butyl Alcohol (TBA)	100	93	36-162	4	0-30	
Diisopropyl Ether (DIPE)	92	93	60-138	1	0-45	
Ethyl-t-Butyl Ether (ETBE)	89	89	69-123	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	96	95	65-120	1	0-20	
Ethanol	68	90	30-180	28	0-72	

RPD - Relative Percent Difference , CL - Control Limit



Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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

Date Received: 02/24/10
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
10-02-1742-4	**Aqueous**	**GC/MS BB**	**02/28/10**	**02/28/10**	**100228S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	97	99	76-124	2	0-20	
Carbon Tetrachloride	94	95	74-134	1	0-20	
Chlorobenzene	95	97	80-120	2	0-20	
1,2-Dibromoethane	90	90	80-120	0	0-20	
1,2-Dichlorobenzene	99	104	80-120	5	0-20	
1,1-Dichloroethene	83	85	73-127	3	0-20	
Ethylbenzene	92	99	78-126	6	0-20	
Toluene	99	103	80-120	4	0-20	
Trichloroethene	97	99	77-120	2	0-20	
Vinyl Chloride	98	96	72-126	3	0-20	
Methyl-t-Butyl Ether (MTBE)	101	96	67-121	4	0-49	
Tert-Butyl Alcohol (TBA)	89	98	36-162	9	0-30	
Diisopropyl Ether (DIPE)	102	95	60-138	6	0-45	
Ethyl-t-Butyl Ether (ETBE)	102	97	69-123	6	0-30	
Tert-Amyl-Methyl Ether (TAME)	101	100	65-120	0	0-20	
Ethanol	84	88	30-180	4	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Broadbent & Associates, Inc.	Date Received: N/A
1324 Mangrove Ave, Ste 212	Work Order No: 10-02-1916
Chico, CA 95926-2642	Preparation: EPA 5030B
	Method: EPA 8015B (M)

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-763	**Aqueous**	**GC 11**	**02/25/10**	**02/25/10**	**100225B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	103	104	78-120	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,244	**Aqueous**	**GC/MS BB**	**02/27/10**	**02/27/10**	**100227L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	89	94	80-120	73-127	6	0-20	
Carbon Tetrachloride	91	95	74-134	64-144	4	0-20	
Chlorobenzene	94	93	80-120	73-127	2	0-20	
1,2-Dibromoethane	89	84	79-121	72-128	5	0-20	
1,2-Dichlorobenzene	92	93	80-120	73-127	2	0-20	
1,1-Dichloroethene	89	88	78-126	70-134	1	0-28	
Ethylbenzene	99	98	80-120	73-127	1	0-20	
Toluene	93	97	80-120	73-127	4	0-20	
Trichloroethene	87	93	79-127	71-135	7	0-20	
Vinyl Chloride	93	96	72-132	62-142	3	0-20	
Methyl-t-Butyl Ether (MTBE)	87	88	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	85	86	63-123	53-133	2	0-20	
Diisopropyl Ether (DIPE)	91	91	59-137	46-150	0	0-37	
Ethyl-t-Butyl Ether (ETBE)	91	91	69-123	60-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	92	93	70-120	62-128	1	0-20	
Ethanol	101	102	28-160	6-182	0	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 10-02-1916
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-1,247	**Aqueous**	**GC/MS BB**	**02/28/10**	**02/28/10**	**100228L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	91	88	80-120	73-127	4	0-20	
Carbon Tetrachloride	92	91	74-134	64-144	1	0-20	
Chlorobenzene	92	93	80-120	73-127	2	0-20	
1,2-Dibromoethane	88	88	79-121	72-128	0	0-20	
1,2-Dichlorobenzene	93	96	80-120	73-127	3	0-20	
1,1-Dichloroethene	84	84	78-126	70-134	0	0-28	
Ethylbenzene	96	97	80-120	73-127	1	0-20	
Toluene	94	93	80-120	73-127	1	0-20	
Trichloroethene	88	92	79-127	71-135	4	0-20	
Vinyl Chloride	89	89	72-132	62-142	0	0-20	
Methyl-t-Butyl Ether (MTBE)	85	88	69-123	60-132	4	0-20	
Tert-Butyl Alcohol (TBA)	93	87	63-123	53-133	7	0-20	
Diisopropyl Ether (DIPE)	88	87	59-137	46-150	1	0-37	
Ethyl-t-Butyl Ether (ETBE)	88	89	69-123	60-132	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	96	93	70-120	62-128	3	0-20	
Ethanol	84	90	28-160	6-182	7	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

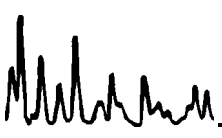
Glossary of Terms and Qualifiers

Work Order Number: 10-02-1916

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

Work Order Number: 10-02-1916

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



Atlantic Richfield Company — A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 374
BP/ARC Facility No: 374
Req Due Date (mm/dd/yy): STD-TAT (1916) **Rush TAT:** Yes ___ No X
Lab Work Order Number:

Lab Name:	Cal Science
Lab Address:	7440 Lincoln Way
Lab PM:	Richard Villafania
Lab Phone:	714-895-5494 / 714-895-7501 (fax)
Lab Shipping Accnt:	9255
Lab Bottle Order No:	
Other Info:	
BP/ARC EBM:	Chuck Carmel
EBM Phone:	925-275-3803
EBM Email:	charles.carmel@bp.com

BP/ARC Facility Address:	6407 Telegraph Avenue
City, State, ZIP Code:	Oakland, CA 94609
Lead Regulatory Agency:	ACEH
California Global ID No.:	T0600100106
Enfos Proposal No:	000XK-0011
Accounting Mode:	Provision X OOC-BU ___ OOC-RM ___
Stage:	Operate (5) Activity: Monitoring/MNA (822)

Consultant/Contractor:	Broadbent & Associates, Inc.
Consultant/Contractor Project No:	06-88-602-5-822
Address:	1324 Mangrove Ave. Ste. 212, Chico, CA 95926
Consultant/Contractor PM:	Tom Venus
Phone:	530-566-1400 / 530-566-1401 (fax)
Email EDD To:	tvenus@broadbentinc.com
Invoice To:	BP/ARC ___ Contractor ___

Report Type & QC Level: Standard X; Full Data Package ___

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor		No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol		Requested Analyses: GRO (8015M)	BTEX / 5 Oxys (8260)	EDB / 1,2-DCA (8260)	EtOH (8260)							Comments
1	MW-1	2/19/10	0945		X			6				X			X	X	X	X							
2	MW-2	↓	0900		X			6				X			X	X	X	X							
3	MW-4	↓	1020		X			6				X			X	X	X	X							
4	TB-374-100219				X			2				X													ON HOLD

Comments note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.

Sampler's Name: Tracy Gaddes
Sampler's Company: BAI
Shipment Method: GSO Ship Date: 2/23/10
Shipment Tracking No: 106193650

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
[signature]	2/23/10	1600	[signature]	2/24/10	10:[illegible]

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

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

GSO
GOLDEN STATE OVERNIGHT

1-800-322-5555

WWW.GSO.COM

SHIPPING AIR BILL

1 FROM

DATE 2/23/10 [redacted]

COMPANY BAI

ADDRESS 875 Cotting ln

ADDRESS

STE/ROOM F

CITY Vacaville

ZIP CODE 95688

SENDERS NAME Eric Fuller

PHONE NUMBER 775-217-7901

2 TO

COMPANY CAL SCIENCE

NAME

PHONE NUMBER 714-895-5494

ADDRESS 7440 LINCOLN WAY

ADDRESS

STE/ROOM

CITY GARDEN GROVE

ZIP CODE 92841

3 YOUR INTERNAL BILLING REFERENCE WILL APPEAR ON YOUR INVOICE

SPECIAL INSTRUCTIONS

4 PACKAGE INFORMATION

☐ LETTER (MAX 8 OZ)

☒ PACKAGE (WT) 10

☐ DECLARED VALUE $

☐ COD AMOUNT $ (CASH NOT ACCEPTED)

PACKAGE LABEL

5 DELIVERY SERVICE

☒ PRIORITY OVERNIGHT BY 10:30 AM

☐ EARLY PRIORITY BY 8:00 AM

☐ SATURDAY DELIVERY

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

6 RELEASE SIGNATURE

SIGN TO AUTHORIZE DELIVERY WITHOUT OBTAINING SIGNATURE

7

8 PICK UP INFORMATION

TIME DRIVER # ROUTE #

106193650

PEEL OFF HERE

106193650

9 GSO TRACKING NUMBER

PLEASE PRESS FIRMLY

1416

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 10-02-1916

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: BROADBENT & ASSOCIATES DATE: 02/24/10

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

Temperature 2.0 °C + 0.5 °C (CF) = 2.5 °C ☑ Blank ☐ Sample

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

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

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

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

CUSTODY SEALS INTACT:

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

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

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

CONTAINER TYPE:

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

Water: ☐VOA ☑VOA**h** (6) ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

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

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

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:** 100209A **Checked by:** AC

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

Preservative: **h:** HCL **n:** HNO3 **na$_2$:** $Na_2S_2O_3$ **Na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **znna:** $ZnAc_2$+NaOH **f:** Field-filtered **Scanned by:** WSC

BROADBENT & ASSOCIATES INC. FIELD PROCEDURES

A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

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

A.1.1 Water Level & Free-Product Measurement

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

A.1.2 Monitoring Well Purging

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

A.1.3 Ground-Water Sample Collection

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

A.1.4 Surface Water Sample Collection

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

A.1.5 Decontamination Protocol

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

A.1.6 Chain of Custody Procedures

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

Field Custody Procedures

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

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

Transfer of Custody and Shipment

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

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

A.1.7 Field Records

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

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

Submittal Type:	**GEO_WELL**
Submittal Title:	**1Q10 GEO_WELL 374**
Facility Global ID:	**T0600100106**
Facility Name:	**ARCO #0374**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**3/19/2010 2:07:20 PM**
Confirmation Number:	**4924874842**

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Monitoring Report - Quarterly**
Submittal Title:	**1Q10 GW Monitoring**
Facility Global ID:	**T0600100106**
Facility Name:	**ARCO #0374**
File Name:	**10021916.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**3/19/2010 2:08:10 PM**
Confirmation Number:	**7403939783**

VIEW QC REPORT

VIEW DETECTIONS REPORT