Atlantic Richfield Company
(a BP affiliated company)

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

January 28, 2009

Re: Fourth Quarter, 2008 Ground-Water Monitoring Report
Atlantic Richfield Company Station #4977
2770 Castro Valley Boulevard
Castro Valley, California
ACEH Case No. RO0002436

"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:

Paul Supple
Environmental Business Manager

Fourth Quarter, 2008 Ground-Water Monitoring Report
Atlantic Richfield Company Station #4977
2770 Castro Valley Boulevard
Castro Valley, California

Prepared for

Mr. Paul Supple
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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January 2009

Project No. 06-82-625

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

January 28, 2009

Project No. 06-82-625

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

Attn.: Mr. Paul Supple

Re: Fourth Quarter, 2008 Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #4977, 2770 Castro Valley Boulevard, Castro Valley, CA. ACEH Case No. RO0002436.

Dear Mr. Supple:

Provided herein is the *Fourth Quarter, 2008 Ground-Water Monitoring Report* for Atlantic Richfield Company Station #4977 (herein referred to as Station #4977) located at 2770 Castro Valley Boulevard, Castro Valley, CA (Property). This report presents a summary of Fourth Quarter, 2008 ground-water monitoring results.

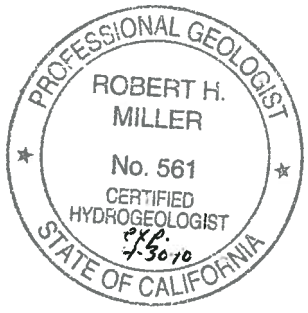
Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Matthew G. Herrick, P.G., C.HG.
Senior Hydrogeologist

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



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (submitted via ACEH ftp site)

STATION #4977 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #4977 Address:	2770 Castro Valley Boulevard, Castro Valley, CA
Station #4977 Environmental Business Manager:	Mr. Paul Supple
Consulting Co./Contact Persons:	Broadbent & Associates, Inc. (BAI) / Rob Miller & Matt Herrick
Consultant Project No.:	06-82-625
Facility Permits/Permitting Agency.:	NA

WORK PERFORMED THIS QUARTER (Fourth Quarter, 2008):

1. Submitted Third Quarter, 2008 Ground-Water Monitoring Report. Work performed by BAI.
2. Conducted ground-water monitoring/sampling for Fourth Quarter, 2008. Work performed by Stratus Environmental, Inc.

WORK PROPOSED FOR NEXT QUARTER (First Quarter, 2009):

1. Submit Fourth Quarter, 2008 Ground-Water Monitoring Report (contained herein).
2. Conduct quarterly ground-water monitoring/sampling for First Quarter, 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-water monitoring/sampling**
Frequency of ground-water sampling:	**Wells MW-1 through MW-3: Quarterly**
Frequency of ground-water monitoring:	**Quarterly**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**None**
Depth to ground water (below TOC):	**6.42 (MW-2) to 8.90 (MW-1) feet**
General ground-water flow direction:	**South**
Approximate hydraulic gradient:	**0.028 Feet per foot**

DISCUSSION:

Gasoline range organics (GRO) were detected in MW-2 and MW-3 at 31,000 micrograms per liter (µg/L) and 140 µg/L, respectively. Benzene was detected in MW-2 at 490 µg/L. Ethylbenzenene was detected in MW-2 at 670 µg/L. Xylenes were detected in MW-2 at 120 µg/L. Methyl tert-butyl ether (MTBE) was detected in MW-1, MW-2, and MW-3 at concentrations ranging from 2.7 µg/L (MW-1) to 97 µg/L (MW-2). No other analytes were detected in ground-water samples collected during Fourth Quarter, 2008.

Analytes detected during Fourth Quarter, 2008 were all within the historic minimum and maximum concentration ranges recorded for each well, with the following exceptions: ethylbenzene in MW-2, xylenes in MW-2, and MTBE in MW-3 are the lowest concentrations historically detected in each well. Ground-water elevations measured during Fourth Quarter, 2008 were within historic minimum and maximum ranges for each well.

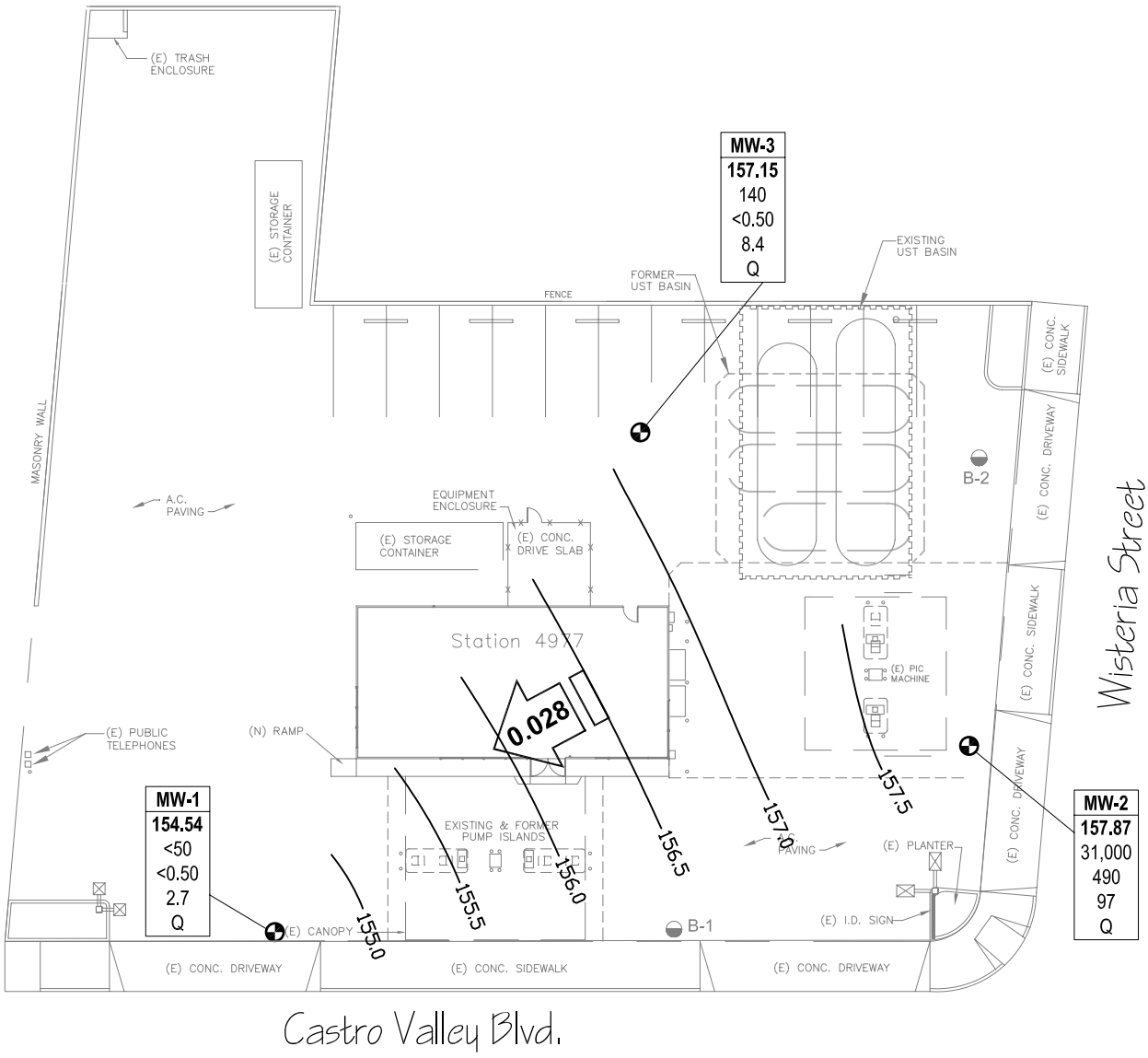
Drawing 1 depicts the ground-water elevation contour and analytical summary map for the Fourth Quarter, 2008. Table 1 includes a summary of ground-water monitoring data including relative water elevations and laboratory analyses. Table 2 provides a summary of fuel additives analytical data. Table 3 presents historical ground-water flow direction and gradient.

CLOSURE:

The findings presented in this report are based upon: observations of Stratus Environmental, Inc. and/or their subcontractor(s) field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, CA). 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 Contour and Analytical Summary Map, Station #4977, Castro Valley, CA
Table 1.	Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #4977, Castro Valley, CA
Table 2.	Summary of Fuel Additives Analytical Data, Station #4977, Castro Valley, CA
Table 3.	Historical Ground-Water Flow Direction and Gradient, Station #4977, Castro Valley, CA
Appendix A.	Stratus Environmental, Inc. Ground-Water Sampling Data Package (Includes Field Data Sheets, Non-Hazardous Waste Data Form, Chain of Custody Documentation, Certified Analytical Results, and Field Procedures for Ground-water Sampling)
Appendix B.	GeoTracker Upload Confirmation



LEGEND

- MONITORING WELL
- SOIL BORING
- Well / ELEV / GRO / BZ / MTBE / Q — WELL DESIGNATION; GROUND-WATER ELEVATION (FT ABOVE MSL); CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUND WATER (µg/L); SAMPLING FREQUENCY
- < — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- Q — SAMPLED QUARTERLY
- 155.0 — GROUND-WATER ELEVATION CONTOUR (FT ABOVE MSL)
- 0.028 — GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)

N

0 30 60

SCALE (ft)

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

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-82-625 Date: 1/15/09

Station #4977
2770 Castro Valley Blvd.
Castro Valley, California

Ground-Water Elevation Contour and Analytical Summary Map
December 2, 2008

Drawing
1

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

Station #4977, 2770 Castro Valley Blvd., Castro Valley, 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															
4/19/2002	--		161.11	5.0	**15.0**	11.21	149.90	660	12	1.3	4.3	0.8	38	--	--
9/27/2002	--		161.11	5.0	**15.0**	9.29	151.82	130	7.7	0.87	5.4	0.79	39	1.7	6.9
12/16/2002	--	a	161.11	5.0	**15.0**	8.55	152.56	77	1.8	<0.50	0.69	<1.0	42	1.6	6.9
3/11/2003	--		161.11	5.0	**15.0**	8.07	153.04	140	9.8	<0.50	5.6	<0.50	20	1.4	7.4
6/17/2003	--		161.11	5.0	**15.0**	8.31	152.80	510	60	1.4	81	<1.0	23	2.2	7
9/18/2003	--	b	161.11	5.0	**15.0**	9.45	151.66	72	2.4	1.4	1.6	1.5	39	2.7	7
12/11/2003	P		161.11	5.0	15.0	8.80	152.31	79	1.5	<0.50	1.5	4.4	48	2.1	7.0
03/11/2004	P		163.44	5.0	15.0	7.61	155.83	<50	1.3	<0.50	0.77	1.3	17	1.4	6.8
06/02/2004	P		163.44	5.0	15.0	8.95	154.49	53	1.4	<0.50	0.93	<0.50	39	2.3	7.1
09/22/2004	P		163.44	5.0	15.0	9.42	154.02	70	<0.50	<0.50	<0.50	<0.50	48	1.7	6.8
12/15/2004	P		163.44	5.0	15.0	7.88	155.56	63	<0.50	<0.50	<0.50	<0.50	45	1.8	6.9
03/07/2005	P		163.44	5.0	15.0	7.02	156.42	<50	<0.50	<0.50	<0.50	<0.50	4.0	2.4	6.8
06/27/2005	P		163.44	5.0	15.0	7.53	155.91	52	2.0	<0.50	1.9	0.78	8.1	2.8	7.1
09/16/2005	P		163.44	5.0	15.0	9.20	154.24	<50	<0.50	<0.50	<0.50	0.76	14	1.82	6.9
12/27/2005	P		163.44	5.0	15.0	7.60	155.84	<50	1.3	<0.50	1.5	<0.50	9.4	2.02	7.87
03/16/2006	P		163.44	5.0	15.0	6.97	156.47	71	3.0	<0.50	3.5	<0.50	3.4	1.6	7.1
6/26/2006	P		163.44	5.0	**15.0**	8.58	154.86	71	0.69	<0.50	1.1	3.5	3.2	2.2	6.9
9/29/2006	P		163.44	5.0	15.0	8.85	154.59	<50	<0.50	<0.50	<0.50	<0.50	5.2	2.35	6.7
12/19/2006	P		163.44	5.0	15.0	8.00	155.44	<50	<0.50	<0.50	<0.50	<0.50	4.3	4.80	7.21
3/29/2007	P		163.44	5.0	15.0	7.70	155.74	<50	<0.50	<0.50	<0.50	<0.50	2.3	3.44	7.18
6/5/2007	P		163.44	5.0	15.0	8.77	154.67	<50	<0.50	<0.50	<0.50	<0.50	3.2	3.45	7.29
9/25/2007	P		163.44	5.0	15.0	9.18	154.26	<50	<0.50	<0.50	<0.50	<0.50	5.3	2.61	7.41
12/26/2007	P		163.44	5.0	15.0	8.45	154.99	<50	<0.50	<0.50	<0.50	<0.50	2.9	5.57	7.43
3/25/2008	P		163.44	5.0	15.0	8.29	155.15	<50	<0.50	<0.50	<0.50	<0.50	0.94	3.52	7.80
6/10/2008	P		163.44	5.0	15.0	9.17	154.27	<50	<0.50	<0.50	<0.50	<0.50	1.3	3.38	7.01
9/2/2008	P		163.44	5.0	15.0	9.15	154.29	<50	<0.50	<0.50	<0.50	<0.50	5.6	2.30	6.81
12/2/2008	**P**		**163.44**	**5.0**	**15.0**	**8.90**	**154.54**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.7**	**2.41**	**6.96**
MW-2															
4/19/2002	--		161.87	5.0	**15.0**	6.59	155.28	28,000	970	120	860	6,900	760	--	--
9/27/2002	--		161.87	5.0	**15.0**	7.18	154.69	17,000	1,400	<50	1,200	3,700	1,400	1.5	6.8

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

Station #4977, 2770 Castro Valley Blvd., Castro Valley, 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-2 Cont.															
12/16/2002	--	a	161.87	5.0	**15.0**	7.31	154.56	17,000	1,000	<50	980	3,300	980	1.9	6.8
3/11/2003	--		161.87	5.0	**15.0**	6.02	155.85	24,000	1,600	70	1,300	4,300	920	1.7	7.4
6/17/2003	--		161.87	5.0	**15.0**	6.31	155.56	28,000	1,300	55	1,300	4,500	610	1.4	6.9
9/18/2003	--		161.87	5.0	**15.0**	7.61	154.26	19,000	960	63	1,100	3,100	580	2.7	6.8
12/11/2003	P		161.87	5.0	15.0	6.50	155.37	29,000	710	53	1,300	3,800	490	2.0	7.0
03/11/2004	P		164.29	5.0	15.0	6.02	158.27	19,000	830	49	1,500	4,000	410	0.8	6.5
06/02/2004	P		164.29	5.0	15.0	7.14	157.15	25,000	680	<50	1,300	3,900	240	4.3	7.1
09/22/2004	--		164.29	5.0	15.0	7.63	156.66	15,000	980	<25	980	940	390	--	6.7
12/15/2004	P	c	164.29	5.0	15.0	6.48	157.81	22,000	610	26	1,300	3,200	290	0.3	6.9
03/07/2005	P		164.29	5.0	15.0	6.08	158.21	25,000	570	33	1,400	3,900	120	2.3	6.8
06/27/2005	P		164.29	5.0	15.0	6.90	157.39	24,000	630	32	1,200	2,900	86	2.5	7.2
09/16/2005	P		164.29	5.0	15.0	7.66	156.63	25,000	550	<25	1,400	3,000	82	1.41	7.0
12/27/2005	P		164.29	5.0	15.0	5.60	158.69	33,000	540	<25	1,300	2,700	100	2.26	7.19
03/16/2006	P	c	164.29	5.0	15.0	7.25	157.04	29,000	710	<50	1,400	2,600	78	1.4	7.1
6/26/2006	P	c	164.29	5.0	**15.0**	6.60	157.69	20,000	630	<25	1,200	1,100	110	0.64	6.8
9/29/2006	P		164.29	5.0	15.0	6.85	157.44	24,000	530	<25	1,300	1,800	86	1.36	6.7
12/19/2006	P		164.29	5.0	15.0	6.02	158.27	21,000	500	<25	1,400	1,700	70	1.11	7.42
3/29/2007	P		164.29	5.0	15.0	6.03	158.26	16,000	530	<25	1,100	1,100	80	2.98	7.18
6/5/2007	P		164.29	5.0	15.0	6.85	157.44	21,000	420	<25	1,100	1,100	50	2.09	7.20
9/25/2007	P		164.29	5.0	15.0	7.15	157.14	25,000	620	<25	1,400	1,200	70	3.25	7.59
12/26/2007	P		164.29	5.0	15.0	6.25	158.04	16,000	440	<5.0	760	570	80	1.84	7.66
3/25/2008	P		164.29	5.0	15.0	6.63	157.66	16,000	530	7.8	790	470	96	1.78	7.72
6/10/2008	P		164.29	5.0	15.0	7.04	157.25	14,000	480	<25	730	240	100	1.83	6.96
9/2/2008	P		164.29	5.0	15.0	7.25	157.04	13,000	440	<25	690	240	91	3.09	6.61
12/2/2008	**P**		**164.29**	**5.0**	**15.0**	**6.42**	**157.87**	**31,000**	**490**	**<10**	**670**	**120**	**97**	**3.05**	**7.00**
MW-3															
4/19/2002	--		162.14	5.0	**15.0**	6.94	155.20	1,200	29	1.1	43	62	1,700	--	--
9/27/2002	--		162.14	5.0	**15.0**	8.26	153.88	740	7.8	<2.5	6.8	4.4	1,100	1	6.7
12/16/2002	--	a	162.14	5.0	**15.0**	6.76	155.38	1,200	13	<10	170	88	910	2.3	6.8
3/11/2003	--		162.14	5.0	**15.0**	6.92	155.22	<2,500	<25	<25	<25	<25	470	1.7	7.5

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

Station #4977, 2770 Castro Valley Blvd., Castro Valley, 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-3 Cont.															
6/17/2003	--		162.14	5.0	**15.0**	7.44	154.70	<1,000	<10	<10	14	<10	530	1.9	7
9/18/2003	--		162.14	5.0	**15.0**	8.43	153.71	470	4.8	<2.5	10	9.2	300	2.9	6.8
12/11/2003	P		162.14	5.0	15.0	6.72	155.42	<500	<5.0	<5.0	7.0	13	180	1.9	6.9
03/11/2004	P		164.53	5.0	15.0	6.09	158.44	360	1.9	<1.0	5.6	5.0	110	2.6	6.8
06/02/2004	P		164.53	5.0	15.0	7.50	157.03	380	2.8	<0.50	8.0	2.1	43	3.6	7.3
09/22/2004	P		164.53	5.0	15.0	8.00	156.53	270	<0.50	<0.50	0.54	<0.50	50	1.8	6.9
12/15/2004	P		164.53	5.0	15.0	6.43	158.10	390	3.5	<0.50	20	3.7	49	1.1	6.9
03/07/2005	P		164.53	5.0	15.0	6.12	158.41	1,900	13	<1.0	93	29	70	2.3	6.8
06/27/2005	P		164.53	5.0	15.0	7.08	157.45	830	4.0	<0.50	13	2.8	33	3.3	7.3
09/16/2005	P		164.53	5.0	15.0	7.28	157.25	320	2.1	<0.50	5.4	0.60	21	2.11	7.0
12/27/2005	P		164.53	5.0	15.0	6.47	158.06	770	6.0	<0.50	33	2.7	36	2.96	7.42
03/16/2006	P		164.53	5.0	15.0	6.10	158.43	1,600	11	<0.50	59	6.4	45	1.4	7.1
6/26/2006	P		164.53	5.0	**15.0**	6.92	157.61	400	<0.50	<0.50	1.6	2.1	26	2.41	7.0
9/29/2006	P		164.53	5.0	15.0	7.38	157.15	220	0.86	<0.50	2.2	0.58	14	1.95	7.0
12/19/2006	P		164.53	5.0	15.0	6.65	157.88	450	4.3	<0.50	19	1.4	19	3.68	7.30
3/29/2007	P		164.53	5.0	15.0	6.92	157.61	390	3.0	<0.50	9.1	0.60	27	1.98	7.16
6/5/2007	P		164.53	5.0	15.0	7.01	157.52	390	1.9	<0.50	6.9	<0.50	20	1.99	7.34
9/25/2007	P		164.53	5.0	15.0	7.52	157.01	260	1.3	<0.50	2.7	<0.50	12	3.44	7.41
12/26/2007	P		164.53	5.0	15.0	6.65	157.88	460	3.1	<0.50	15	0.89	17	4.05	7.46
3/25/2008	P		164.53	5.0	15.0	6.71	157.82	260	0.91	0.71	2.5	0.54	29	2.40	7.63
6/10/2008	P		164.53	5.0	15.0	7.33	157.20	120	<0.50	<0.50	2.0	<0.50	12	2.29	7.59
9/2/2008	P		164.53	5.0	15.0	7.53	157.00	97	<0.50	<0.50	<0.50	<0.50	9.3	3.28	6.81
12/2/2008	**P**		**164.53**	**5.0**	**15.0**	**7.38**	**157.15**	**140**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**8.4**	**3.18**	**7.06**

SYMBOLS AND ABBREVIATIONS:
< = Not detected at or above specified laboratory reporting limits
-- = Not measured, sampled, analyzed, applicable
ft bgs = Feet below ground surface
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
GRO = Gasoline range organics
GWE = Groundwater elevation in ft MSL
mg/L = Milligrams per liter
ft MSL = Feet above mean sea level
MTBE = Methyl tert-butyl ether analyzed by EPA Method 8021B unless otherwise noted (before 12/16/02)
P/NP = Well was purged/not purged prior to sampling
TPH-g = Total petroleum hydrocarbons as gasoline (C5-C9)
TOC = Top of casing measured in ft MSL
µg/L = Micrograms per liter

FOOTNOTES:
a = TPH, benzene, toluene, ethylbenzene, total xylenes, and MTBE analyzed by EPA Method 8260B beginning on 4th quarter sampling event (12/16/02).
b = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose.
c = Sheen in well.

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 inclusion of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

Wells were re-surveyed on 3/23/2004.

Values for DO and pH were field measurements.

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

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 #4977, 2770 Castro Valley Blvd., Castro Valley, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
12/16/2002	<50	<5.0	42	<0.50	<0.50	<0.50	<0.50	<0.50	
3/11/2003	<100	<20	20	<0.50	<0.50	<0.50	<0.50	<0.50	
6/17/2003	<200	<40	23	<1.0	<1.0	<1.0	<1.0	<1.0	
9/18/2003	<100	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	a
12/11/2003	<100	<20	48	<0.50	<0.50	<0.50	<0.50	<0.50	
03/11/2004	<100	<20	17	<0.50	<0.50	<0.50	<0.50	<0.50	
06/02/2004	<100	<20	39	<0.50	<0.50	<0.50	<0.50	<0.50	
09/22/2004	<100	<20	48	<0.50	<0.50	<0.50	<0.50	<0.50	
12/15/2004	<100	<20	45	<0.50	<0.50	<0.50	<0.50	<0.50	a
03/07/2005	<100	<20	4.0	<0.50	<0.50	<0.50	<0.50	<0.50	
06/27/2005	<100	<20	8.1	<0.50	<0.50	<0.50	<0.50	<0.50	
09/16/2005	<100	<20	14	<0.50	<0.50	<0.50	<0.50	<0.50	
12/27/2005	<100	<20	9.4	<0.50	<0.50	<0.50	<0.50	<0.50	b
03/16/2006	<300	<20	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	c
6/26/2006	<300	<20	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	
9/29/2006	<300	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	
12/9/2006	<300	<20	4.3	<0.50	<0.50	<0.50	<0.50	--	b
3/29/2007	<300	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	
6/5/2007	<300	<20	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	
9/25/2007	<300	<20	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	
12/26/2007	<300	<20	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	
3/25/2008	<300	<10	0.94	<0.50	<0.50	<0.50	<0.50	<0.50	
6/10/2008	<300	<10	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
9/2/2008	<300	<10	5.6	<0.50	<0.50	<0.50	<0.50	<0.50	
12/2/2008	**<300**	**<10**	**2.7**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-2									
12/16/2002	<5,000	<500	980	<50	<50	<50	<50	<50	
3/11/2003	<10,000	<2,000	920	<50	<50	<50	<50	<50	
6/17/2003	<10,000	<2,000	610	<50	<50	<50	<50	<50	
9/18/2003	<5,000	<1,000	580	<25	<25	<25	<25	<25	
12/11/2003	<5,000	<1,000	490	<25	<25	<25	<25	<25	

Table 2. Summary of Fuel Additives Analytical Data

Station #4977, 2770 Castro Valley Blvd., Castro Valley, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-2 Cont.									
03/11/2004	<2,000	<400	410	<10	<10	<10	<10	<10	
06/02/2004	<10,000	<2,000	240	<50	<50	<50	<50	<50	
09/22/2004	<5,000	<1,000	390	<25	<25	<25	<25	<25	
12/15/2004	<2,000	<400	290	<10	<10	<10	<10	<10	a
03/07/2005	<5,000	<1,000	120	<25	<25	<25	<25	<25	
06/27/2005	<5,000	<1,000	86	<25	<25	<25	<25	<25	
09/16/2005	<5,000	<1,000	82	<25	<25	<25	<25	<25	
12/27/2005	<5,000	<1,000	100	<25	<25	<25	<25	<25	b
03/16/2006	<30,000	<2,000	78	<50	<50	<50	<50	<50	c
6/26/2006	<15,000	<1,000	110	<25	<25	<25	<25	<25	
9/29/2006	<15,000	<1,000	86	<25	<25	<25	<25	<25	
12/9/2006	<15,000	<1,000	70	<25	<25	<25	<25	--	b
3/29/2007	<15,000	<1,000	80	<25	<25	<25	<25	<25	
6/5/2007	<15,000	<1,000	50	<25	<25	<25	<25	<25	
9/25/2007	<15,000	<1,000	70	<25	<25	<25	<25	<25	
12/26/2007	<3,000	<200	80	<5.0	<5.0	<5.0	<5.0	<5.0	
3/25/2008	<1,500	<50	96	<2.5	<2.5	<2.5	<2.5	<2.5	
6/10/2008	<15,000	<500	100	<25	<25	<25	<25	<25	
9/2/2008	<15,000	<500	91	<25	<25	<25	<25	<25	
12/2/2008	**<6,000**	**<200**	**97**	**<10**	**<10**	**<10**	**<10**	**<10**	
MW-3									
12/16/2002	<1,000	<100	910	<10	<10	12	<10	<10	
3/11/2003	<5,000	<1,000	470	<25	<25	<25	<25	<25	
6/17/2003	<2,000	<400	530	<10	<10	<10	<10	<10	
9/18/2003	<500	<100	300	<2.5	<2.5	3.2	<2.5	<2.5	
12/11/2003	<1,000	<200	180	<5.0	<5.0	<5.0	<5.0	<5.0	
03/11/2004	<200	570	110	<1.0	<1.0	<1.0	<1.0	<1.0	
06/02/2004	<100	130	43	<0.50	<0.50	0.56	<0.50	<0.50	
09/22/2004	<100	28	50	<0.50	<0.50	0.51	<0.50	<0.50	
12/15/2004	<100	110	49	<0.50	0.52	0.61	<0.50	<0.50	a
03/07/2005	<200	190	70	<1.0	<1.0	<1.0	<1.0	<1.0	

Table 2. Summary of Fuel Additives Analytical Data

Station #4977, 2770 Castro Valley Blvd., Castro Valley, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
06/27/2005	<100	130	33	<0.50	<0.50	<0.50	<0.50	<0.50	
09/16/2005	<100	44	21	<0.50	<0.50	<0.50	<0.50	<0.50	
12/27/2005	<100	150	36	<0.50	<0.50	<0.50	<0.50	<0.50	b
03/16/2006	<300	160	45	<0.50	<0.50	0.84	<0.50	<0.50	c
6/26/2006	<300	53	26	<0.50	<0.50	<0.50	<0.50	<0.50	
9/29/2006	<300	55	14	<0.50	<0.50	<0.50	<0.50	<0.50	
12/9/2006	<300	<20	19	<0.50	<0.50	<0.50	<0.50	--	b
3/29/2007	<300	130	27	<0.50	<0.50	<0.50	<0.50	<0.50	
6/5/2007	<300	77	20	<0.50	<0.50	<0.50	<0.50	<0.50	
9/25/2007	<300	30	12	<0.50	<0.50	<0.50	<0.50	<0.50	
12/26/2007	<300	76	17	<0.50	<0.50	<0.50	<0.50	<0.50	
3/25/2008	<300	100	29	<0.50	<0.50	<0.50	<0.50	<0.50	
6/10/2008	<300	25	12	<0.50	<0.50	<0.50	<0.50	<0.50	
9/2/2008	<300	<10	9.3	<0.50	<0.50	<0.50	<0.50	<0.50	
12/2/2008	**<300**	**<10**	**8.4**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

SYMBOLS AND ABBREVIATIONS:
< = Not detected at or above specified laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per liter

FOOTNOTES:
a = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose.
b = Calibration verification for ethanol was within method limits but outside contract limits.
c = Possible high bias for DIPE, 1,2-DCA, and ethanol due to CCV falling outside acceptance criteria.

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 #4977, 2770 Castro Valley Blvd., Castro Valley, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
4/19/2002	Southwest	0.038
9/27/2002	Southwest	0.021
12/16/2002	Southeast	0.029
3/11/2003	South	0.024
6/17/2003	South-Southwest	0.022
9/18/2003	South-Southwest	0.022
3/11/2004	South-Southwest	0.024
6/2/2004	South	0.025
9/22/2004	South	0.025
12/15/2004	South	0.020
3/7/2005	South	0.02
6/27/2005	South	0.01
9/16/2005	Southeast	0.03
12/27/2005	South-Southeast	0.02
3/16/2006	Southeast	0.02
6/26/2006	South	0.03
9/29/2006	South	0.025
12/19/2006	South	0.024
3/29/2007	South	0.020
6/5/2007	South	0.027
9/25/2007	South	0.023
12/26/2007	South	0.027
3/25/2008	South	0.026
6/10/2008	South	0.026
9/2/2008	South	0.026
12/2/2008	**South**	**0.028**

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 ENVIRONMENTAL, INC. GROUND-WATER SAMPLING DATA PACKAGE (INCLUDES FIELD DATA SHEETS, NON-HAZARDOUS WASTE DATA FORM, CHAIN OF CUSTODY DOCUMENTATION, CERTIFIED ANALYTICAL RESULTS, AND FIELD PROCEDURES FOR GROUND-WATER SAMPLING)

STRATUS
ENVIRONMENTAL, INC.

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

December 22, 2008

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

Re: Groundwater Sampling Data Package, BP Service Station No. 4977, located at 2770 Castro Valley Road, Castro Valley, California.

General Information

Data Submittal Prepared / Reviewed by: Becky Carroll / Jay Johnson
Phone Number: (530) 676-6004
On-Site Supplier Representative: Roberto Heimlich

Sampling Date: December 2, 2008
Arrival: 9:10 *Departure:* 11:06
Weather Conditions: Clear
Unusual Field Conditions: None noted.
Scope of Work Performed: Quarterly monitoring and sampling.
Variations from Work Scope: None noted.

This submittal presents the tabulation of data collected in association with routine groundwater monitoring. The attachments include field data sheets, non-hazardous waste data form, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling documentation. 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
- Non-Hazardous Waste Data Form
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Sampling

CC: Mr. Paul Supple, BP/ARCO

AR - 900

BP Alameda Portfolio

HYDROLOGIC DATA SHEET

Gauge Date: 12/2/08

Field Technician: ROBERTO

Project Name: 2770 Castro Valley Blvd, Castro Valley

Project Number: 4977

TOC = Top of Well Casing Elevation
TOS = Depth to Top of Screen
DTW = Depth to Groundwater Below TOC
DTB = Depth to Bottom of Well Casing Below TOC

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

WELL OR LOCATION	TIME	MEASUREMENT						PURGE & SAMPLE	SHEEN CONFIRMATION (w/baller)	COMMENTS
		TOC	TOS	DTW	DTB	DIA	ELEV			
mw-1	9:31			8.90	15.00	4"				
mw-2	9:36			6.42	14.58	4"				
mw-3	9:25			7.38	14.85	4"				

Fw- Arturo Heimlich

pH/Conductivity/temperature Meter - YSI Model 63

DO Meter - YSI 55 Series

Please refer to groundwater sampling field procedures

Calibration Date

pH 12/2/08

Conductivity 12/2/08

DO 12/2/08

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 4977 | PURGED BY: RH | WELL I.D.: MW-1

CLIENT NAME: | SAMPLED BY: RH | SAMPLE I.D.: MW-1

LOCATION: Castro Valley - 2770 Castro Valley Road | QA SAMPLES:

DATE PURGED 12/2/08 | START (2400hr) 10:31 | END (2400hr) 10:40

DATE SAMPLED 12/2/08 | SAMPLE TIME (2400hr) 10:55

SAMPLE TYPE: Groundwater X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER: Casing Volume: (gallons per foot) — 2" (0.17) | 3" (0.38) | 4" ✓ (0.67) | 5" (1.02) | 6" (1.50) | 8" (2.60) | Other ( )

DEPTH TO BOTTOM (feet) = 15.00 | CASING VOLUME (gal) = 4.0

DEPTH TO WATER (feet) = 8.90 | CALCULATED PURGE (gal) = 12.2

WATER COLUMN HEIGHT (feet) = 6.1 | ACTUAL PURGE (gal) = 12.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
12/2/08	10:33	4	21.8	1310	7.16	clear	
✓	10:35	8	22.0	1312	7.00	✓	
	10:37	12.5	22.2	1314	6.96		

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 9.79 | SAMPLE TURBIDITY: clear

80% RECHARGE: ✓ YES ___ NO | ANALYSES: 8260

ODOR: NO | SAMPLE VESSEL / PRESERVATIVE: 6 VOAs/HCL

PURGING EQUIPMENT

___ Bladder Pump
✓ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

Pump Depth: 14.50

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
✓ Bailer (___ PVC or ✓ disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: GOOD | LOCK#: MASTER

REMARKS: PD 2.41

SIGNATURE: [signature]

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 4977 PURGED BY: R H WELL I.D.: MW-2

CLIENT NAME: SAMPLED BY: R H SAMPLE I.D.: MW-2

LOCATION: Castro Valley - 2770 Castro Valley Road QA SAMPLES:

DATE PURGED 12/2/08 START (2400hr) 10:07 END (2400hr) 10:16

DATE SAMPLED 12/2/08 SAMPLE TIME (2400hr) 10:26

SAMPLE TYPE: Groundwater X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER: 2" ___ (0.17) 3" ___ (0.38) 4" ✓ (0.67) 5" ___ (1.02) 6" ___ (1.50) 8" ___ (2.60) Other ___ ( )

Casing Volume: (gallons per foot)

DEPTH TO BOTTOM (feet) = 14.58 CASING VOLUME (gal) = 5.4

DEPTH TO WATER (feet) = 6.42 CALCULATED PURGE (gal) = 16.4

WATER COLUMN HEIGHT (feet) = 8.1 ACTUAL PURGE (gal) = 16.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
12/2/08	10:09	6	20.8	848	7.32	clear	
↓	10:11	11	22.1	869	7.07	↓	
↓	10:13	16.5	22.5	873	7.00	↓	

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 7.29 SAMPLE TURBIDITY: clear

80% RECHARGE: ✓ YES ___ NO ANALYSES: 5W0.

ODOR: no SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCl

PURGING EQUIPMENT

___ Bladder Pump
✓ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

Pump Depth: 14

SAMPLING EQUIPMENT

___ Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Peristaltic Pump
___ Bailer (Teflon)
✓ Bailer (___ PVC or ✓ Disposable)
___ Bailer (Stainless Steel)
___ Dedicated ___

Other: ___

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 3.05

SIGNATURE: [signature]

Page ___ of ___

BP ALAMEDA PORTFOLIO

WATER SAMPLE FIELD DATA SHEET

PROJECT #: 4977 PURGED BY: RH WELL I.D.: MW-3

CLIENT NAME: SAMPLED BY: RH SAMPLE I.D.: MW-3

LOCATION: Castro Valley - 2770 Castro Valley Road QA SAMPLES:

DATE PURGED 12/2/08 START (2400hr) 9:41 END (2400hr) 9:51

DATE SAMPLED 12/2/08 SAMPLE TIME (2400hr) 10:03

SAMPLE TYPE: Groundwater x Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER: 2" ___ (0.17) 3" ___ (0.38) 4" x (0.67) 5" ___ (1.02) 6" ___ (1.50) 8" ___ (2.60) Other ___ ( )

Casing Volume: (gallons per foot)

DEPTH TO BOTTOM (feet) = 14.85 CASING VOLUME (gal) = 5.0

DEPTH TO WATER (feet) = 7.38 CALCULATED PURGE (gal) = 15.0

WATER COLUMN HEIGHT (feet) = 7.4 ACTUAL PURGE (gal) = 15.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees C)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
12/2/08	9:43	5	19.0	539	7.59	clear	
"	9:45	10	21.8	706	7.19	"	
"	9:47	15.5	22.7	715	7.06	"	

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 8.50 SAMPLE TURBIDITY: clear

80% RECHARGE: x YES ___ NO ANALYSES: 8260

ODOR: no SAMPLE VESSEL / PRESERVATIVE: 6 VOAs / HCL

PURGING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)

x Centrifugal Pump ___ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Peristaltic Pump ___ Dedicated ___

Other: ___

Pump Depth: 14.50

SAMPLING EQUIPMENT

___ Bladder Pump ___ Bailer (Teflon)

___ Centrifugal Pump x Bailer (___ PVC or x disposable)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Peristaltic Pump ___ Dedicated ___

Other: ___

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 3.18

SIGNATURE: [signature] Page ___ of ___

WELLHEAD OBSERVATION FORM

Site Name/Number: BP 4977 Date: 12/2/02 Technician: Cordero

Well I.D.	Box in Good Condition? X = Yes Blank = No	Lock Missing? X = Yes (replaced) Blank = No	Water in Wellbox? X = Yes Blank = No	Water Level Relative to Cap? A = Above cap B = Below cap L = Level w/cap	Well Cap? I = Intact M = Missing or Compromised (replaced)	Bolts Missing? X = Yes Blank = No	Bolts Stripped? X = Yes Blank = No	Bolt Holes Stripped? X = Yes Blank = No	Cracked or Broken Lid? X = Yes Blank = No	Cracked or Broken Box? X = Yes Blank = No	Grout Level more than 1ft below TOC? X = Yes Blank = No	Additional Comments (such as missing lid, concrete needs replacement, or other - explain)
MW-1	X	—	—	—	I	—	—	—	—	—	—	
MW-2	X	—	—	—	I	—	—	—	—	—	—	
MW-3	X	—	—	—	I	—	—	—	—	—	—	

DRUM INVENTORY

Drums on site? Yes (No) (circle)

Type and #: Steel: _____ Plastic: _____

Note whether drums are full or empty, solids or liquids:

_____

_____

Drum label info (description, date, contact info):

_____

_____

GENERAL SITE CONDITIONS

Make notes on housekeeping conditions (such as trash around remediation system enclosure/compound, bent or missing bollards, signs missing from compound fences, graffiti on compound, etc.)

_____

_____

_____

_____

_____

_____

(updated 3-20-02, SS)

NO. 672249

NON-HAZARDOUS WASTE DATA FORM

TO BE COMPLETED BY GENERATOR

SITE: EPA I.D. NO.

NAME BP WEST COAST PRODUCTS LLC ARCO # 4977 PROFILE NO.

ADDRESS P.O. BOX 682492

CITY, STATE, ZIP RANCHO SANTA MARGARITA, CA 92688 PHONE NO. ( )

CONTAINERS: No. VOLUME 45 WEIGHT

TYPE: ☐ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☐ OTHER

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

COMPONENTS OF WASTE	PPM	%	COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%	5.		
2. TDH		<1%	6.		
3.			7. BTEX		
4.			8.		

PROPERTIES: 7-14 ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PROTECTIVE CLOTHING

THE GENERATOR CERTIFIES THAT THE WASTE AS DESCRIBED IS 100% NON-HAZARDOUS.

Larry Beckett BEST for BP 12/6/12

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TRANSPORTER

Transporter #1 Transporter #2 EPA I.D. NO.

NAME STRATUS ENVIRONMENTAL

ADDRESS 3330 CAMERON PARK DR SERVICE ORDER NO.

CITY, STATE, ZIP CAMERON PARK, CA 95682 PICK UP DATE

PHONE NO. 530-676-2061

TRUCK, UNIT, I.D. NO. Robert Hendrix 12/6/12

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TSD FACILITY

NAME INSTRAT, INC EPA I.D. NO.

ADDRESS 1105 AIRPORT RD #C DISPOSAL METHOD

CITY, STATE, ZIP RIO VISTA, CA 94571 ☐ LANDFILL ☐ OTHER

PHONE NO. 530-753-1923

TYPED OR PRINTED FULL NAME & SIGNATURE DATE

GEN		ODOR/DEW	L	A	TONS
TRANS			S	B	
DID			RTWD	RWDF	NONE

DISCREPANCY

Atlantic Richfield Company
A BP affiliated company

Chain of Custody Record

Project Name: ARCO 4977
BP BU/AR Region/Enfos Segment: BP > Americas > West > Retail > Alameda >4
State or Lead Regulatory Agency:
Requested Due Date (mm/dd/yy):

On-site Time:	9:10	Temp:	62
Off-site Time:	11:06	Temp:	62
Sky Conditions:	Clear		
Meteorological Events:	NA		
Wind Speed:	0	Direction:	NA

Lab Name:	Calscience
Address:	7440 Lincoln Way
	Garden Grove, CA 92841
Lab PM:	Linda Scharpenberg
Tele/Fax:	714-895-5494 714-895-7501(fax)
BP/AR PM Contact:	Paul Supple
Address:	2010 Crow Canyon Place, Suite 150
	San Ramon, CA
Tele/Fax:	925-275-3506

BP/AR Facility No.:	4977
BP/AR Facility Address:	2770 Castro Valley Road, Castro Valley
Site Lat/Long:	
California Global ID No.:	T0600010089
Enfos Project No.:	G0C2H-0021
Provision or OOC (circle one)	Provision
Phase/WBS:	04-Monitoring
Sub Phase/Task:	03-Analytical
Cost Element:	01-Contractor labor

Consultant/Contractor:	Stratus Environmental, Inc.
Address:	3330 Cameron Park Drive, Suite 550
	Cameron Park, CA 95682
Consultant/Contractor Project No.:	
Consultant/Contractor PM:	Jay Johnson
Tele/Fax:	(530) 676-6000 / (530) 676-6005
Report Type & QC Level:	Level 1 with EDF
E-mail EDD To:	bcarroll@stratusinc.net
Invoice to:	Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analysis: BTEX/Oxy* by 8260	1,2-DCA	Ethanol by 8260	EDB	GRO by 8260						Sample Point Lat/Long and Comments
1	MW-1	10:55	12/2/08		X			6				X		X	X	X	X	X						
2	MW-2	10:26	"		X			6				X		X	X	X	X	X						
3	MW-3	10:03	"		X			6				X		X	X	X	X	X						
4	TB-4977 12/2/08-4:00	4:00	"		X			2				X		X	X	X	X	X						HOLD
5																								
6																								
7																								
8																								
9																								
10																								

Sampler's Name:	Roberto Heinlich
Sampler's Company:	Dowlos Eng.
Shipment Date:	
Shipment Method:	
Shipment Tracking No:	

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time

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

Calscience Environmental Laboratories, Inc.

December 15, 2008

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

Subject: **Calscience Work Order No.: 08-12-0427**
Client Reference: ARCO 4977

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 12/4/2008 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,

Philip Samelle for

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	12/04/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-12-0427
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: ARCO 4977

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-1	**08-12-0427-1-E**	**12/02/08 10:55**	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08 14:09**	**081205B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	73	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**08-12-0427-2-E**	**12/02/08 10:26**	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08 15:49**	**081205B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	31000	2500	50		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	70	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**08-12-0427-3-E**	**12/02/08 10:03**	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08 16:22**	**081205B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	140	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	73	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-361**	**N/A**	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08 12:30**	**081205B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	60	38-134			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	12/04/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-12-0427
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L
Project: ARCO 4977			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	**08-12-0427-1-C**	**12/02/08 10:55**	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08 20:00**	**081209L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	2.7	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	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	110	73-157			Dibromofluoromethane	111	82-142		
Toluene-d8	86	82-112			1,4-Bromofluorobenzene	91	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	**08-12-0427-2-C**	**12/02/08 10:26**	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08 20:27**	**081209L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	490	10	20		Methyl-t-Butyl Ether (MTBE)	97	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	670	10	20		Ethyl-t-Butyl Ether (ETBE)	ND	10	20	
Toluene	ND	10	20		Tert-Amyl-Methyl Ether (TAME)	ND	10	20	
Xylenes (total)	120	10	20		Ethanol	ND	6000	20	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	98	73-157			Dibromofluoromethane	102	82-142		
Toluene-d8	97	82-112			1,4-Bromofluorobenzene	92	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	**08-12-0427-3-C**	**12/02/08 10:03**	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08 20:55**	**081209L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	8.4	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	92	73-157			Dibromofluoromethane	98	82-142		
Toluene-d8	91	82-112			1,4-Bromofluorobenzene	94	75-105		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	12/04/08
3330 Cameron Park Drive, Suite 550	Work Order No:	08-12-0427
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B
	Units:	ug/L
Project: ARCO 4977		Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-593**	**N/A**	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08 13:40**	**081209L01**

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	91	73-157			Dibromofluoromethane	99	82-142		
Toluene-d8	94	82-112			1,4-Bromofluorobenzene	89	75-105		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	12/04/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-12-0427
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-1	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08**	**081205S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	85	81	38-134	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.	Date Received:	12/04/08
3330 Cameron Park Drive, Suite 550	Work Order No:	08-12-0427
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B

Project ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-12-0253-2	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08**	**081209S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	107	104	86-122	2	0-8	
Carbon Tetrachloride	106	106	78-138	1	0-9	
Chlorobenzene	113	113	90-120	0	0-9	
1,2-Dibromoethane	123	116	70-130	6	0-30	
1,2-Dichlorobenzene	112	105	89-119	6	0-10	
1,1-Dichloroethene	107	107	52-142	0	0-23	
Ethylbenzene	111	114	70-130	2	0-30	
Toluene	109	106	85-127	3	0-12	
Trichloroethene	106	105	78-126	1	0-10	
Vinyl Chloride	107	114	56-140	6	0-21	
Methyl-t-Butyl Ether (MTBE)	113	102	64-136	10	0-28	
Tert-Butyl Alcohol (TBA)	90	108	27-183	19	0-60	
Diisopropyl Ether (DIPE)	109	99	78-126	10	0-16	
Ethyl-t-Butyl Ether (ETBE)	113	99	67-133	13	0-21	
Tert-Amyl-Methyl Ether (TAME)	117	105	63-141	11	0-21	
Ethanol	86	104	11-167	19	0-64	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	08-12-0427
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-361	**Aqueous**	**GC 4**	**12/05/08**	**12/05/08**	**081205B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	89	96	78-120	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	08-12-0427
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number	
099-12-703-593	**Aqueous**	**GC/MS L**	**12/09/08**	**12/09/08**	**081209L01**	
Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	102	110	87-117	82-122	7	0-7	
Carbon Tetrachloride	105	104	78-132	69-141	0	0-8	
Chlorobenzene	112	110	88-118	83-123	2	0-8	
1,2-Dibromoethane	120	117	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	112	114	88-118	83-123	3	0-8	
1,1-Dichloroethene	104	106	71-131	61-141	2	0-14	
Ethylbenzene	113	111	80-120	73-127	1	0-20	
Toluene	105	110	85-127	78-134	4	0-7	
Trichloroethene	106	110	85-121	79-127	3	0-11	
Vinyl Chloride	106	111	64-136	52-148	4	0-10	
Methyl-t-Butyl Ether (MTBE)	112	110	67-133	56-144	2	0-16	
Tert-Butyl Alcohol (TBA)	96	92	34-154	14-174	4	0-19	
Diisopropyl Ether (DIPE)	100	100	80-122	73-129	0	0-8	
Ethyl-t-Butyl Ether (ETBE)	108	112	73-127	64-136	3	0-11	
Tert-Amyl-Methyl Ether (TAME)	112	115	69-135	58-146	3	0-12	
Ethanol	93	85	34-124	19-139	9	0-44	

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: 08-12-0427

Qualifier	Definition
AX	Sample too dilute to quantify surrogate.
BA	There was no MS/MSD analyzed with this batch due to insufficient sample volume (NR = not reported). See Blank Spike/Blank Spike Duplicate.
BA,AY	Relative percent difference out of control, 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.
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.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GS	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	Surrogate recovery below the acceptance limit.
LH	Surrogate recovery above the acceptance limit.
LM,AY	MS and/or MSD above acceptance limits. See Blank Spike (LCS). Matrix interfence suspected.
LN,AY	MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interfence suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.

Work Order Number: 08-12-0427

Qualifier	Definition
MB	Analyte present in the method blank.
MG	Analyte is a suspected lab contaminate.
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.

Atlantic Richfield Company
bp
A BP affiliated company

Chain of Custody Record

0427

Page 1 of 1

Project Name: ARCO 4977
BP BU/AR Region/Enfos Segment: BP > Americas > West > Retail > Alameda >4
State or Lead Regulatory Agency:
Requested Due Date (mm/dd/yy):

On-site Time:	9:10	Temp:	62
Off-site Time:	11:06	Temp:	62
Sky Conditions:	clear		
Meteorological Events:	NA		
Wind Speed:	0	Direction:	NA

Lab Name: Calscience	BP/AR Facility No.: 4977	Consultant/Contractor: Stratus Environmental, Inc.
Address: 7440 Lincoln Way	BP/AR Facility Address: 2770 Castro Valley Road, Castro Valley	Address: 3330 Cameron Park Drive, Suite 550
Garden Grove, CA 92841	Site Lat/Long:	Cameron Park, CA 95682
Lab PM: Linda Scharpenberg	California Global ID No.: T060010089	Consultant/Contractor Project No.:
Tele/Fax: 714-895-5494 714-895-7501(fax)	Enfos Project No.: G0C2H-0021	Consultant/Contractor PM: Jay Johnson
BP/AR PM Contact: Paul Supple	Provision or OOC (circle one) Provision	Tele/Fax: (530) 676-6000 / (530) 676-6005
Address: 2010 Crow Canyon Place, Suite 150	Phase/WBS: 04-Monitoring	Report Type & QC Level: Level 1 with EDF
San Ramon, CA	Sub Phase/Task: 03-Analytical	E-mail EDD To: bcarroll@stratusinc.net
Tele/Fax: 925-275-3506	Cost Element: 01-Contractor labor	Invoice to: Atlantic Richfield Co.

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air		Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol		Requested Analysis: BTEX/Oxy* by 8260	Requested Analysis: 1,2-DCA	Requested Analysis: Ethanol by 8260	Requested Analysis: EDB	Requested Analysis: GRO by 8015m						Sample Point Lat/Long and Comments Oxy = MTBE, TAME, ETBE, DIPE, TBA
1	MW-1	10:55	12/2/08		X				6				X			X	X	X	X	X						
2	MW-2	10:26	"		X				6				X			X	X	X	X	X						
3	MW-3	10:03	"		X				6				X			X	X	X	X	X						
4	TB-4977 12/2/08-4:00	4:00	"		X				2				X			X	X	X	X	X						HOLD
5																										
6																										
7																										
8																										
9																										
10																										

Sampler's Name: ROBERTO HEIMLICH	**Relinquished By / Affiliation**	**Date**	**Time**	**Accepted By / Affiliation**	**Date**	**Time**
Sampler's Company: DOULOS ENV.						
Shipment Date:						
Shipment Method:						
Shipment Tracking No: 106193048					12/3/08	1030

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

BP COC Rev. 5 10/11/2006

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08-12-0427

SAMPLE RECEIPT FORM

Cooler 1 **of** 1

CLIENT: Stratus **DATE:** 12/04/08

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

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °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:** JP

CUSTODY SEALS INTACT:

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

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** W.S.C

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on sample label(s)	☑	☐	☐
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☑VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☐250CGBs ☐1PB ☐500PB ☐500PBna ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____ ☐ VL

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by: W.S.C

Reviewed by: YL

Scanned by: W.S.C

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

The sampling procedures for groundwater monitoring events are contained in this appendix.

Equipment Calibration

Standard groundwater sampling equipment – pH/Conductivity/Temperature meter, and dissolved oxygen (DO) meters are calibrated prior to all field work. All calibration is conducted in accordance with equipment manufacturer's recommended procedure and buffer solutions. MSDS for all buffer solutions are maintained in Stratus vehicles. Calibration is completed everyday prior to field work and also once a week. The pH probe is calibrated for a pH of 7.0 daily and for 4.0, 7.0 and 10.0 weekly. The conductivity probe is calibrated for 1413 µs daily and 1413 µs and 447 µs weekly. The temperature probe is calibrated weekly with a NIST-traceable thermometer. The DO probe is calibrated for 100% oxygen daily and 0% and 100% oxygen weekly. All calibration logs are maintained in the Stratus office.

Groundwater and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

Prior to measuring the depth to liquid in the well, the well caps are removed and the liquid level allowed to stabilize. A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the groundwater depth in monitoring wells that do not contain LPH. Depth to groundwater or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typically a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

Subjective Analysis of Groundwater

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

Monitoring Well Sampling

In many cases, determining whether to purge or not to purge wells prior to sample collection is made in the field and is often based on depth to water relative to the screen interval of the well. Site-specific field data sheets present details associated with the purge method and equipment used.

Monitoring wells, when purged, use a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water has been removed. Field measuring equipment is calibrated and maintained according to the manufacturer's instructions. If three well volumes cannot be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a groundwater sample is then collected from each of the wells using disposable bailers.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These bottles will be filled completely to prevent air accumulation in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Groundwater Sample Labeling and Preservation

Samples are collected in appropriate containers supplied by the laboratory. All required chemical preservation is added to the bottles prior to delivery to Stratus. Sample label information includes a unique sample identification number, job identification number, date, and time. After labeling, all groundwater samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip and temperature blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and

contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

Equipment Cleaning

All reusable sampling equipments are cleaned using phosphate-free detergents and rinsed with de-ionized water.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION

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:	**4Q08 GEO_WELL 4977**
Facility Global ID:	**T0600100089**
Facility Name:	**ARCO #4977**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**1/15/2009 11:41:17 AM**
Confirmation Number:	**4977657496**

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:	**4Q08 GW Monitoring**
Facility Global ID:	**T0600100089**
Facility Name:	**ARCO #4977**
File Name:	**08120427.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**1/15/2009 11:45:36 AM**
Confirmation Number:	**2833862781**

VIEW QC REPORT

VIEW DETECTIONS REPORT