



Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 1257
San Ramon, CA 94583
Phone: (925) 275-3801
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April 25, 2008

Re: First 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

RECEIVED

9:41 am, May 02, 2008

Alameda County
Environmental Health



A BP affiliated company

First 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



1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
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April 2008

Project No. 06-02-625

April 25, 2008

Project No. 06-02-625

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

Attn.: Mr. Paul Supple

Re: First 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 *First 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 First Quarter, 2008 ground-water monitoring results.

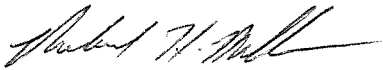
Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

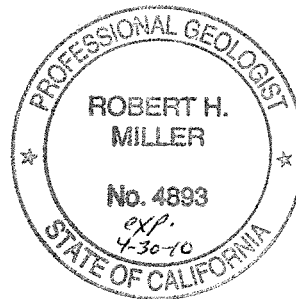
BROADBENT & ASSOCIATES, INC.



Matthew G. Herrick, P.G.
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.:		06-02-625
Facility Permits/Permitting Agency.:		NA

WORK PERFORMED THIS QUARTER (First Quarter, 2008):

1. Submitted Fourth Quarter, 2007 Ground-Water Monitoring Report. Work performed by BAI.
2. Conducted ground-water monitoring/sampling for First Quarter, 2008. Work performed by Stratus Environmental, Inc.

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

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

QUARTERLY RESULTS SUMMARY:

Current phase of project:	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):	6.63 (MW-2) to 8.29 (MW-1) feet
General ground-water flow direction:	South
Approximate hydraulic gradient:	0.026 Feet per foot

DISCUSSION:

Gasoline range organics (GRO) were detected in MW-2 and MW-3 at 16,000 micrograms per liter ($\mu\text{g/L}$) and 260 $\mu\text{g/L}$, respectively. Benzene was detected in MW-2 and MW-3 at 530 $\mu\text{g/L}$ and 0.91 $\mu\text{g/L}$, respectively. Toluene was detected in MW-2 and MW-3 at 7.8 $\mu\text{g/L}$ and 0.71 $\mu\text{g/L}$, respectively. Ethylbenzene was detected in MW-2 and MW-3 at 790 $\mu\text{g/L}$ and 2.5 $\mu\text{g/L}$, respectively. Xylenes were detected in MW-2 and MW-3 at 470 $\mu\text{g/L}$ and 0.54 $\mu\text{g/L}$, respectively. Methyl tert-butyl ether (MTBE) was detected in MW-1, MW-2, and MW-3 at concentrations ranging from 0.94 $\mu\text{g/L}$ (MW-1) to 96 $\mu\text{g/L}$ (MW-2). Tert-Butyl alcohol (TBA) was detected in MW-3 at 100 $\mu\text{g/L}$. No other analytes were detected in ground-water samples collected during First Quarter, 2008.

Analytes detected during First Quarter, 2008 were all within the historic minimum and maximum concentration ranges recorded for each well, with the following exceptions: MTBE in MW-1 and xylenes in MW-2 are the lowest concentration historically detected in each well. Ground-water elevations measured during First Quarter, 2008 were within historic minimum and maximum ranges for each well.

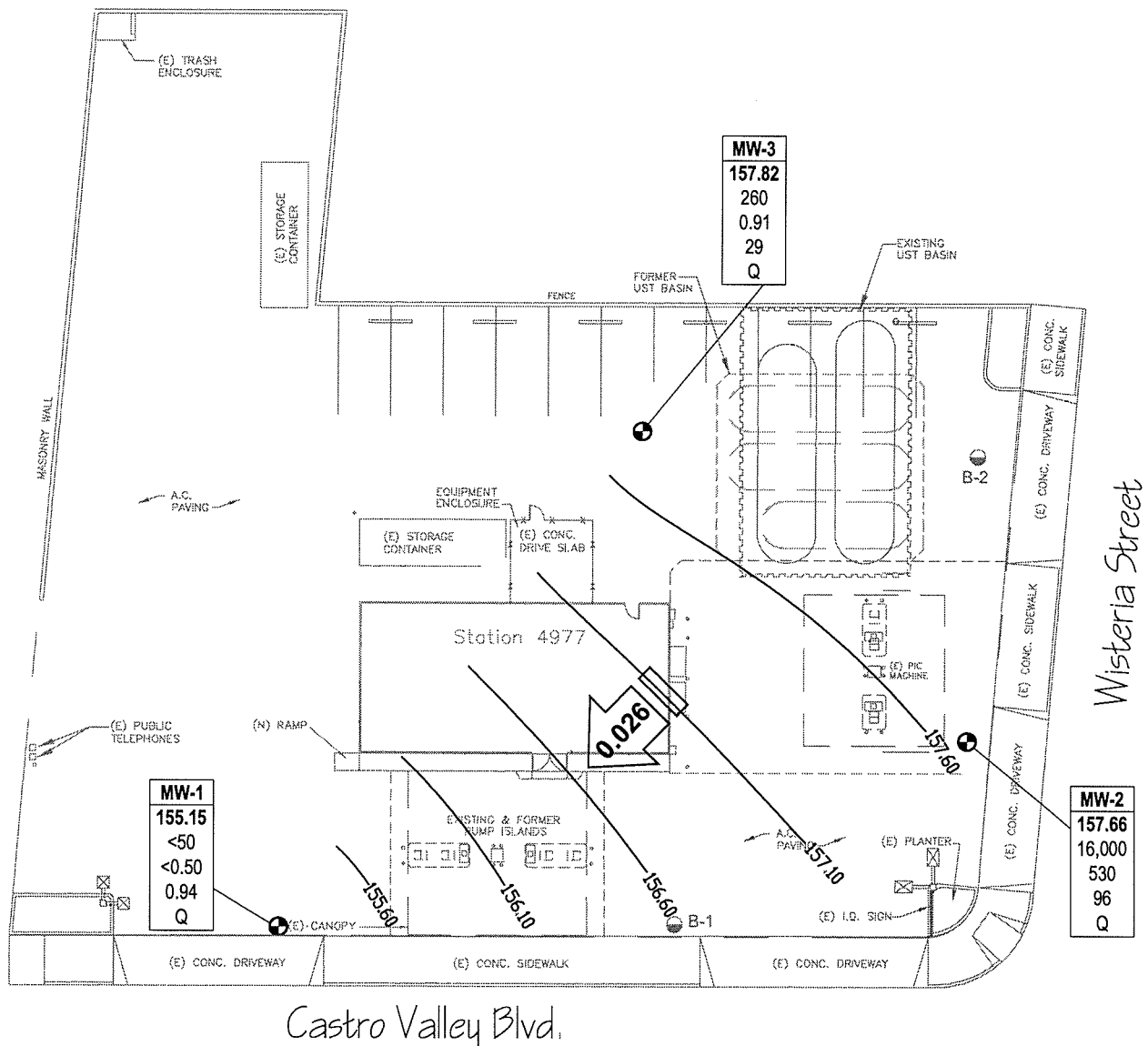
Drawing 1 depicts the ground-water elevation contour and analytical summary map for the First Quarter, 2008. Table 1 includes a summary of ground-water monitoring data including relative water elevations and laboratory analyses. Table 2 provides a summary of fuel additives analytical data. Table 3 presents 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 Groundwater Sampling)
- Appendix B. GeoTracker Upload Confirmation



LEGEND

- ⊕ MONITORING WELL
- SOIL BORING

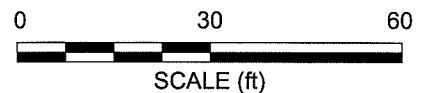
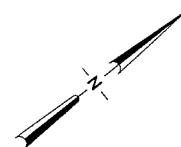
Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT ABOVE MSL)
GRO	CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUND WATER (µg/L)
BZ	
MTBE	
Q	SAMPLING FREQUENCY

< NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS

Q SAMPLED QUARTERLY

— 156.60 GROUND-WATER ELEVATION CONTOUR (FT ABOVE MSL)

← 0.026 GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)



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

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
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
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

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.															
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
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
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

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.															
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

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.

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	
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	
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	

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.									
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	
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	
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	

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.									
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	

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

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 GROUNDWATER SAMPLING)**



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

April 10, 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) 676-6000

On-Site Supplier Representative: Roberto Heimlich

Sampling Date: March 25, 2008

Arrival: 07:00 *Departure:* 9:00

Weather Conditions: Cloudy

Unusual Field Conditions: None noted

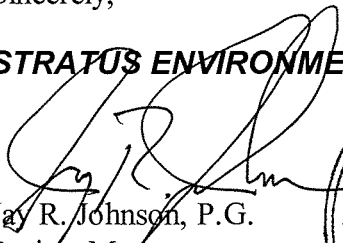
Scope of Work Performed: Quarterly monitoring and sampling

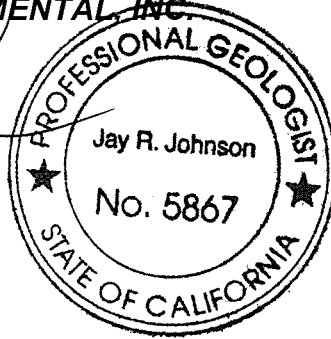
Variations from Work Scope: None noted

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

BP Alameda Portfolio
HYDROLOGIC DATA SHEET

AT 7:00

Gauge Date: 3/25/08

Project Name: 2770 Castro Valley Blvd, Castro Valley

Field Technician: ROBERTO

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	7:26			8.29	15.00	4"				
MW-2	7:20			6.63	14.58	4"				
MW-3	7:15			6.71	14.85	4"				

pH/Conductivity/temperature Meter - YSI Model 63
 DO Meter - YSI 55 Series (DO is always measured before purge)
 Please refer to groundwater sampling field procedures

Calibration Date _____
 pH 305/08
 Conductivity 305/08
 DO 305/08

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 3/25/08 START (2400hr) 8:24 END (2400hr) 8:31
 DATE SAMPLED 3/25/08 SAMPLE TIME (2400hr) 8:45
 SAMPLE TYPE: Groundwater Surface Water _____ Treatment Effluent _____ Other _____

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

DEPTH TO BOTTOM (feet) = 15.00 CASING VOLUME (gal) = 4.4
 DEPTH TO WATER (feet) = 8.29 CALCULATED PURGE (gal) = 13.4
 WATER COLUMN HEIGHT (feet) = 6.71 ACTUAL PURGE (gal) = 13.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>3/25/08</u>	<u>8:24</u>	<u>4</u>	<u>17.3</u>	<u>1252</u>	<u>7.87</u>	<u>clear</u>	
	<u>8:28</u>	<u>8</u>	<u>19.7</u>		<u>7.83</u>		
	<u>8:30</u>	<u>13.5</u>	<u>20.0</u>	<u>1196</u>	<u>7.80</u>	<u>✓</u>	

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 10.02 SAMPLE TURBIDITY: clear
 80% RECHARGE: YES NO ANALYSES: SWD
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAS / HCL

PURGING EQUIPMENT

Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated _____
 Other: _____
 Pump Depth: 14.50

SAMPLING EQUIPMENT

Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC or disposable)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated _____
 Other: _____

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DC 2.52

SIGNATURE: [Signature] Page of

BP ALAMEDA PORTFOLIO
WATER SAMPLE FIELD DATA SHEET

PROJECT #: 4977 PURGED BY: RH WELL I.D.: MW-2
 CLIENT NAME: _____ SAMPLED BY: RH SAMPLE I.D.: MW-2
 LOCATION: Castro Valley - 2770 Castro Valley Road QA SAMPLES: _____

DATE PURGED 3/25/08 START (2400hr) 7:57 END (2400hr) 8:08
 DATE SAMPLED 3/25/08 SAMPLE TIME (2400hr) 8:19
 SAMPLE TYPE: Groundwater Surface Water _____ Treatment Effluent _____ Other _____

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

DEPTH TO BOTTOM (feet) = 14.58 CASING VOLUME (gal) = 6.3
 DEPTH TO WATER (feet) = 6.63 CALCULATED PURGE (gal) = 15.9
 WATER COLUMN HEIGHT (feet) = 7.95 ACTUAL PURGE (gal) = 16

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>3/25/08</u>	<u>7:59</u>	<u>5</u>	<u>17.2</u>	<u>774</u>	<u>7.85</u>	<u>clear</u>	
<u>✓</u>	<u>8:01</u>	<u>10</u>	<u>18.5</u>	<u>770</u>	<u>7.75</u>	<u>✓</u>	
<u>✓</u>	<u>8:03</u>	<u>16</u>	<u>18.7</u>	<u>768</u>	<u>7.72</u>	<u>✓</u>	

SAMPLE DEPTH TO WATER: 8.16 SAMPLE INFORMATION SAMPLE TURBIDITY: clear

80% RECHARGE: YES NO ANALYSES: SWO
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 UOAS / HCL

PURGING EQUIPMENT
 Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated
 Other: _____
 Pump Depth: 14

SAMPLING EQUIPMENT
 Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC or disposable)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated
 Other: _____

WELL INTEGRITY: GOOD LOCK#: WALTER

REMARKS: DO 1.78

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 3/25/08 START (2400hr) 7:31 END (2400hr) 7:42
 DATE SAMPLED 3/25/08 SAMPLE TIME (2400hr) 7:53
 SAMPLE TYPE: Groundwater Surface Water _____ Treatment Effluent _____ Other _____

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

DEPTH TO BOTTOM (feet) = 14.85 CASING VOLUME (gal) = 5.4
 DEPTH TO WATER (feet) = 6.71 CALCULATED PURGE (gal) = 16.3
 WATER COLUMN HEIGHT (feet) = 8.14 ACTUAL PURGE (gal) = 16.5

FIELD MEASUREMENTS

DATE	TIME (2400hr)	VOLUME (gal)	TEMP. (degrees F)	CONDUCTIVITY (umhos/cm)	pH (units)	COLOR (visual)	TURBIDITY (NTU)
<u>3/25/08</u>	<u>7:33</u>	<u>6</u>	<u>17.2</u>	<u>833</u>	<u>7.58</u>	<u>clear</u>	
<u>1</u>	<u>7:35</u>	<u>11</u>	<u>17.7</u>	<u>832</u>	<u>7.61</u>	<u>1</u>	
<u>1</u>	<u>7:37</u>	<u>16.5</u>	<u>17.9</u>	<u>831</u>	<u>7.63</u>	<u>1</u>	

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER: 7.93 SAMPLE TURBIDITY: clear

80% RECHARGE: YES NO ANALYSES: GWO
 ODOR: NO SAMPLE VESSEL / PRESERVATIVE: 6 VOAS / HCL

PURGING EQUIPMENT

Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated _____
 Other: _____

Pump Depth: 14.50

SAMPLING EQUIPMENT

Bladder Pump Bailor (Teflon)
 Centrifugal Pump Bailor (PVC or disposable)
 Submersible Pump Bailor (Stainless Steel)
 Peristaltic Pump Dedicated _____
 Other: _____

WELL INTEGRITY: GOOD LOCK#: MASTER

REMARKS: DO 2.40

SIGNATURE: [Signature] Page _____ of _____

NO. 665492

NON-HAZARDOUS WASTE DATA FORM

SITE 1

EPA I.D. NO.

NOT REQUIRED

NAME BP WEST COAST PRODUCTS LLC ARCO # 4977

ADDRESS P.O. BOX 80245
RANCHO SANTA MARGARITA

3770 CASTRO VALLEY BLVD

CITY, STATE, ZIP CA 92688

PHONE NO. () - () - ()

CONTAINERS: No. _____ VOLUME 46 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. TPH <1% _____ 6. _____

3. _____ 7. BESI# _____

4. _____ 8. _____

PROPERTIES: 7-10 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 Moothart BESI for BP
TYPED OR PRINTED FULL NAME & SIGNATURE

3/25/08
DATE

TRANSPORTER #1 NAME STRATUS ENVIRONMENTAL TRANSPORTER #2 NAME _____ EPA I.D. NO. _____

ADDRESS 3330 CAMERON PARK DR SERVICE ORDER NO. _____

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

PHONE NO. 530-676-2031

TRUCK UNIT I.D. NO. _____ ROBERTO HEIMLICH TYPED OR PRINTED FULL NAME & SIGNATURE 3/25/08 DATE

NAME SEAPORT REFINING & ENVIRONMENTAL, LLC EPA I.D. NO. _____

ADDRESS 700 SEAPORT BLVD. DISPOSAL METHOD LANDFILL OTHER _____

CITY, STATE, ZIP REDWOOD CITY, CA 94063

PHONE NO. 650-364-1024

TYPED OR PRINTED FULL NAME & SIGNATURE _____

DATE _____

GEN	OLD/NEW	L	A	TONS
TRANS		S	B	
C/D		RTCD	HWDF	NONE

DISCREPANCY _____

TO BE COMPLETED BY GENERATOR

TRANSPORTER

TSDF FACILITY



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: <u>7:00</u>	Temp: <u>58</u>
Off-site Time: <u>9:00</u>	Temp: <u>58</u>
Sky Conditions: <u>Cloudy</u>	
Meteorological Events: <u>NA</u>	
Wind Speed: <u>0</u>	Direction: <u>NA</u>

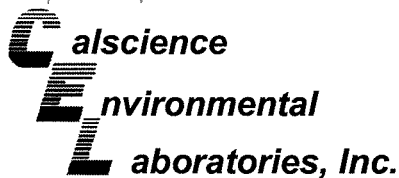
Lab Name: <u>Calscience</u>	BP/AR Facility No.: <u>4977</u>	Consultant/Contractor: <u>Stratus Environmental, Inc.</u>
Address: <u>7440 Lincoln Way</u> <u>Garden Grove, CA 92841</u>	BP/AR Facility Address: <u>2770 Castro Valley Road, Castro Valley</u>	Address: <u>3330 Cameron Park Drive, Suite 550</u>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

Item No.	Sample Description	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis					Sample Point Lat/Long and Comments Oxy = MTBE, TAME, ETBE, DIPE, TBA			
				Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	ETEX Oxy* by 8260	1,2-DCA	Ethanol by 8260	EDB	CRO by 8015m				
1	MW-1	8:45	3/25/08	X				6						X	X	X	X	X				
2	MW-2	8:19	3/25/08	X				6						X	X	X	X	X				
3	MW-3	7:53	3/25/08	X				6						X	X	X	X	X				
4	TB-4977 3/25/08 - 6:00	6:00	3/25/08	X				3														HOLD
5																						
6																						
7																						
8																						
9																						
10																						

Sampler's Name: <u>ROBERTO HEMMICH</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: <u>DOULOS ENV.</u>						
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions: Please cc results to rmliller@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



April 08, 2008

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

Subject: **CalScience Work Order No.: 08-03-2362**
Client Reference: ARCO 4977

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/27/2008 and analyzed in accordance with the attached chain-of-custody.

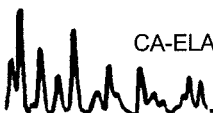
Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard CalScience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

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

Sincerely,

A handwritten signature in black ink, which appears to read "Linda Scharpenberg". The signature is written in a cursive style and is positioned above the typed name.

CalScience Environmental
Laboratories, Inc.
Linda Scharpenberg
Project Manager



CASE NARRATIVE – 08-03-2362

Data Qualifiers - EPA 8260:

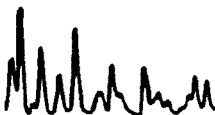
080405S01:

The % recovery for ethanol in the MS was bias high. The % recoveries were within criteria in the LCS/LCSD. The MS has been flagged “3” within the report.

“3” = LM, AY

LM = MS and/or MSD above acceptance limits. See Blank Spike (LCS).

AY = Matrix Interference Suspected





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

Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

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	08-03-2362-1-D	03/25/08 08:45	Aqueous	GC 29	03/31/08	03/31/08 17:07	080331B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	92	38-134			

MW-2	08-03-2362-2-E	03/25/08 08:19	Aqueous	GC 29	04/01/08	04/01/08 11:25	080331B02
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	16000	1200	25		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	106	38-134			

MW-3	08-03-2362-3-D	03/25/08 07:53	Aqueous	GC 29	03/31/08	03/31/08 18:15	080331B01
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	260	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	100	38-134			

Method Blank	099-12-695-87	N/A	Aqueous	GC 29	03/31/08	03/31/08 10:21	080331B01
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Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	90	38-134			

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



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

Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

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	099-12-695-89	N/A	Aqueous	GC 29	03/31/08	04/01/08 02:08	080331B02

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qual</u>	<u>Units</u>
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	92	38-134			

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

Analytical Report



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

Date Received: 03/27/08
 Work Order No: 08-03-2362
 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	08-03-2362-1-A	03/25/08 08:45	Aqueous	GC/MS Z	04/05/08	04/05/08 18:52	080405L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.94	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	116	73-157			Dibromofluoromethane	117	82-142		
Toluene-d8	101	82-112			1,4-Bromofluorobenzene	96	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-2	08-03-2362-2-A	03/25/08 08:19	Aqueous	GC/MS Z	04/05/08	04/05/08 19:22	080405L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	530	25	50		Methyl-t-Butyl Ether (MTBE)	96	2.5	5	
1,2-Dibromoethane	ND	2.5	5		Tert-Butyl Alcohol (TBA)	ND	50	5	
1,2-Dichloroethane	ND	2.5	5		Diisopropyl Ether (DIPE)	ND	2.5	5	
Ethylbenzene	790	25	50		Ethyl-t-Butyl Ether (ETBE)	ND	2.5	5	
Toluene	7.8	2.5	5		Tert-Amyl-Methyl Ether (TAME)	ND	2.5	5	
Xylenes (total)	470	25	5		Ethanol	ND	1500	5	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	108	73-157			Dibromofluoromethane	112	82-142		
Toluene-d8	104	82-112			1,4-Bromofluorobenzene	100	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-3	08-03-2362-3-A	03/25/08 07:53	Aqueous	GC/MS Z	04/05/08	04/05/08 19:52	080405L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	0.91	0.50	1		Methyl-t-Butyl Ether (MTBE)	29	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	100	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	2.5	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	0.71	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	0.54	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	114	73-157			Dibromofluoromethane	114	82-142		
Toluene-d8	102	82-112			1,4-Bromofluorobenzene	100	75-105		

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

Analytical Report

03/27/08

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

Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8260B
 Units: ug/L

Project: ARCO 4977

Page 2 of 2

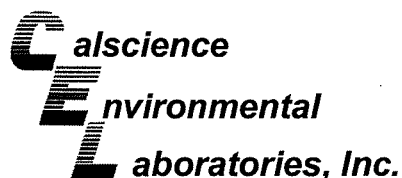
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-150	N/A	Aqueous	GC/MS Z	04/05/08	04/05/08 12:50	080405L01

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	115	73-157			Dibromofluoromethane	108	82-142		
Toluene-d8	101	82-112			1,4-Bromofluorobenzene	94	75-105		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-153	N/A	Aqueous	GC/MS BB	04/07/08	04/07/08 12:44	080407L01

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	93	73-157			Dibromofluoromethane	95	82-142		
Toluene-d8	101	82-112			1,4-Bromofluorobenzene	101	75-105		

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



Quality Control - Spike/Spike Duplicate

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

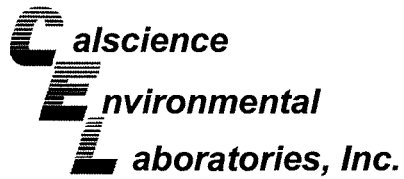
Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-03-2343-6	Aqueous	GC 29	03/31/08	03/31/08	080331S01

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	104	106	38-134	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



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

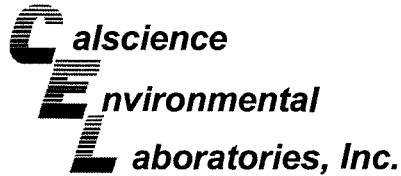
Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-03-2442-4	Aqueous	GC 29	03/31/08	04/01/08	080331S02

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

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



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

Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8260B

Project ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-03-2340-9	Aqueous	GC/MS Z	04/05/08	04/05/08	080405S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	107	102	86-122	5	0-8	
Carbon Tetrachloride	115	110	78-138	5	0-9	
Chlorobenzene	106	103	90-120	3	0-9	
1,2-Dibromoethane	100	94	70-130	6	0-30	
1,2-Dichlorobenzene	104	100	89-119	4	0-10	
1,1-Dichloroethene	111	106	52-142	5	0-23	
Ethylbenzene	107	104	70-130	3	0-30	
Toluene	107	103	85-127	4	0-12	
Trichloroethene	106	100	78-126	6	0-10	
Vinyl Chloride	113	109	56-140	3	0-21	
Methyl-t-Butyl Ether (MTBE)	92	84	64-136	5	0-28	
Tert-Butyl Alcohol (TBA)	104	102	27-183	2	0-60	
Diisopropyl Ether (DIPE)	114	110	78-126	4	0-16	
Ethyl-t-Butyl Ether (ETBE)	96	93	67-133	3	0-21	
Tert-Amyl-Methyl Ether (TAME)	83	80	63-141	3	0-21	
Ethanol	169	155	11-167	9	0-64	3

RPD - Relative Percent Difference , CL - Control Limit



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

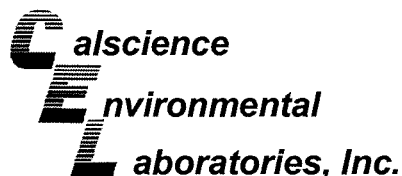
Date Received: 03/27/08
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8260B

Project ARCO 4977

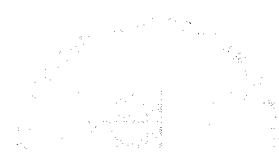
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-04-0548-3	Aqueous	GC/MS BB	04/07/08	04/07/08	080407S01

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Benzene	109	107	86-122	1	0-8	
Carbon Tetrachloride	89	89	78-138	0	0-9	
Chlorobenzene	100	102	90-120	1	0-9	
1,2-Dibromoethane	97	95	70-130	2	0-30	
1,2-Dichlorobenzene	99	96	89-119	3	0-10	
1,1-Dichloroethene	87	88	52-142	0	0-23	
Ethylbenzene	98	97	70-130	1	0-30	
Toluene	103	101	85-127	2	0-12	
Trichloroethene	100	99	78-126	1	0-10	
Vinyl Chloride	81	83	56-140	2	0-21	
Methyl-t-Butyl Ether (MTBE)	85	85	64-136	0	0-28	
Tert-Butyl Alcohol (TBA)	108	96	27-183	12	0-60	
Diisopropyl Ether (DIPE)	83	89	78-126	7	0-16	
Ethyl-t-Butyl Ether (ETBE)	88	90	67-133	2	0-21	
Tert-Amyl-Methyl Ether (TAME)	96	93	63-141	3	0-21	
Ethanol	62	51	11-167	21	0-64	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



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

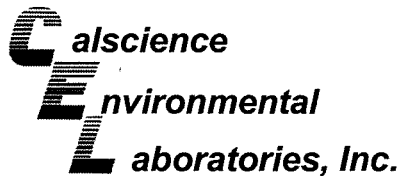
Date Received: N/A
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-87	Aqueous	GC 29	03/31/08	03/31/08	080331B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	110	107	78-120	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate



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

Date Received: N/A
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-89	Aqueous	GC 29	03/31/08	04/01/08	080331B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	98	106	78-120	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit



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

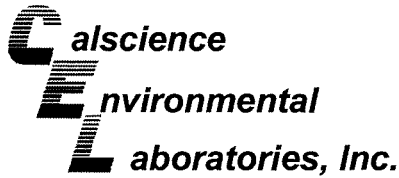
Date Received: N/A
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8260B

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-150	Aqueous	GC/MS Z	04/05/08	04/05/08	080405L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	102	100	87-117	1	0-7	
Carbon Tetrachloride	107	108	78-132	1	0-8	
Chlorobenzene	101	102	88-118	1	0-8	
1,2-Dibromoethane	96	100	80-120	4	0-20	
1,2-Dichlorobenzene	99	100	88-118	0	0-8	
1,1-Dichloroethene	102	102	71-131	0	0-14	
Ethylbenzene	103	104	80-120	0	0-20	
Toluene	103	101	85-127	2	0-7	
Trichloroethene	102	102	85-121	0	0-11	
Vinyl Chloride	102	106	64-136	3	0-10	
Methyl-t-Butyl Ether (MTBE)	91	93	67-133	3	0-16	
Tert-Butyl Alcohol (TBA)	96	95	34-154	1	0-19	
Diisopropyl Ether (DIPE)	103	103	80-122	0	0-8	
Ethyl-t-Butyl Ether (ETBE)	92	92	73-127	0	0-11	
Tert-Amyl-Methyl Ether (TAME)	84	84	69-135	0	0-12	
Ethanol	98	100	34-124	2	0-44	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - LCS/LCS Duplicate



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

Date Received: N/A
 Work Order No: 08-03-2362
 Preparation: EPA 5030B
 Method: EPA 8260B

Project: ARCO 4977

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-153	Aqueous	GC/MS BB	04/07/08	04/07/08	080407L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	104	108	87-117	3	0-7	
Carbon Tetrachloride	92	91	78-132	1	0-8	
Chlorobenzene	102	103	88-118	1	0-8	
1,2-Dibromoethane	93	94	80-120	0	0-20	
1,2-Dichlorobenzene	98	98	88-118	0	0-8	
1,1-Dichloroethene	90	90	71-131	0	0-14	
Ethylbenzene	103	103	80-120	1	0-20	
Toluene	101	102	85-127	1	0-7	
Trichloroethene	100	101	85-121	1	0-11	
Vinyl Chloride	83	81	64-136	2	0-10	
Methyl-t-Butyl Ether (MTBE)	81	82	67-133	1	0-16	
Tert-Butyl Alcohol (TBA)	96	95	34-154	1	0-19	
Diisopropyl Ether (DIPE)	85	88	80-122	3	0-8	
Ethyl-t-Butyl Ether (ETBE)	83	87	73-127	5	0-11	
Tert-Amyl-Methyl Ether (TAME)	90	91	69-135	2	0-12	
Ethanol	61	61	34-124	1	0-44	

RPD - Relative Percent Difference, CL - Control Limit



Work Order Number: 08-03-2362

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



Chain of Custody Record

3362

Project Name: ARCO 4977
 BP BU/AR Region/Enfos Segment: BP > Americas > West > Retail > Alameda > 49
 State or Lead Regulatory Agency: _____
 Requested Due Date (mm/dd/yy): _____

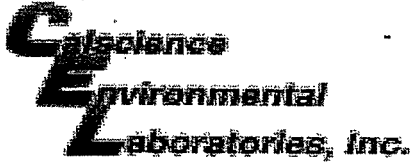
On-site Time:	<u>7:00</u>	Temp:	<u>58</u>
Off-site Time:	<u>9:00</u>	Temp:	<u>58</u>
Sky Conditions:	<u>Cloudy</u>		
Meteorological Events:	<u>NA</u>		
Wind Speed:	<u>0</u>	Direction:	<u>NA</u>

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

Item No.	Sample Description	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis					Sample Point Lat/Long and Comments Oxy = MTBE, TAME, ETBE, DIPE, TBA	
				Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	BTEX/Oxy* by 8260	1,2-DCA	Ethanol by 8260	EDB	GRO by 8015m		
1	MW-1	8:45	3/25/08	X				6			X				X	X	X	X	X	
2	MW-2	8:19	3/25/08	X				6			X				X	X	X	X	X	
3	MW-3	7:53	3/25/08	X				6			X				X	X	X	X	X	
4	TB-4977 3/25/08 - 6:00	6:00	3/25/08	X				3			X	X	X	X	X	X	X	X	X	HOLD
5																				
6																				
7																				
8																				
9																				
10																				

Sampler's Name: <u>ROBERTO HEIMLICH</u>	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: <u>DOULOS ENV.</u>						
Shipment Date:						
Shipment Method:						
Shipment Tracking No: <u>9255411592</u>				<u>[Signature]</u>	<u>3/25/08</u>	<u>0945</u>
Special Instructions: <u>Please cc results to rmiller@broadbentinc.com</u>						

Custody Seals In Place: Yes / No	Temp Blank: Yes / No	Cooler Temp on Receipt: °F/C	Trip Blank: Yes / No	MS/MSD Sample Submitted: Yes / No
----------------------------------	----------------------	------------------------------	----------------------	-----------------------------------



WORK ORDER #: 08 - 03 - 2362

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Stratus

DATE: 3/27/08

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

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

LABORATORY (Other than Calscience Courier):

- 3.2 °C Temperature blank.
- °C IR thermometer.
- Ambient temperature.

Initial: SP

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: No (Not Intact) : _____ Not Present: _____

Initial: SP

SAMPLE CONDITION:

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

Initial: SP

COMMENTS:

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 μ s daily and 1413 μ s and 447 μ s 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

Electronic Submittal Information

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

UPLOADING A GEO_WELL FILE

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

Submittal Title:	1Q08 GEO_WELL 4977
Facility Global ID:	T0600100089
Facility Name:	ARCO #4977
Submittal Date/Time:	4/16/2008 2:07:45 PM
Confirmation Number:	5553072869

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(CONTRACTOR)

[CONTACT SITE ADMINISTRATOR.](#)

Electronic Submittal Information

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

Your EDF file has been successfully uploaded!

Confirmation Number: 6301876962

Date/Time of Submittal: 4/16/2008 2:09:20 PM

Facility Global ID: T0600100089

Facility Name: ARCO #4977

Submittal Title: 1Q08 GW Monitoring

Submittal Type: GW Monitoring Report

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

ARCO #4977 2770 CASTRO VALLEY CASTRO VALLEY, CA 94546	Regional Board - Case #: 01-0097 SAN FRANCISCO BAY RWQCB (REGION 2) Local Agency (lead agency) - Case #: RO0002436 ALAMEDA COUNTY LOP - (PK)
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<u>CONF #</u>	<u>TITLE</u>	<u>QUARTER</u>
6301876962	1Q08 GW Monitoring	Q1 2008
<u>SUBMITTED BY</u>	<u>SUBMIT DATE</u>	<u>STATUS</u>
Broadbent & Associates, Inc.	4/16/2008	PENDING REVIEW

SAMPLE DETECTIONS REPORT

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

METHOD QA/QC REPORT

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

QA/QC FOR 8021/8260 SERIES SAMPLES

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

WATER SAMPLES FOR 8021/8260 SERIES

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

SOIL SAMPLES FOR 8021/8260 SERIES

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

FIELD QC SAMPLES

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS > REPD L</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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