



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 1257  
San Ramon, California 94583  
Phone: (925) 275-3801  
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**RECEIVED**

2:32 pm, Jul 29, 2008

Alameda County  
Environmental Health



18 July 2008

Re: Second Quarter 2008 Status Report  
Former BP Service Station # 11109  
4280 Foothill Boulevard  
Oakland, California  
ACEH Case #RO0000426

"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

18 July 2008

Project No. 06-08-656

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

Attn.: Mr. Paul Supple

Re: Second Quarter 2008 Status Report, Former BP Service Station #11109, 4280 Foothill Boulevard, Oakland, Alameda County, California; ACEH Case No.RO0000426

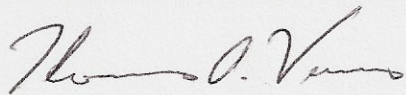
Dear Mr. Supple:

Provided herein is the *Second Quarter 2008 Status Report* for Former BP Service Station #11109 (herein referred to as Station #11109) located at 4280 Foothill Boulevard, Oakland, California (Site). This reports presents a summary of current developments at the Site through the Second Quarter of 2008.

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

Sincerely,

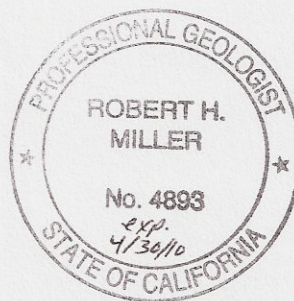
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus, P.E.  
Senior Engineer



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



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp Site)  
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818  
Mr. Chris Jimmerson, Delta Environmental Consultants (Submitted via ENFOS)  
Electronic copy uploaded to GeoTracker

## STATION #11109 QUARTERLY STATUS REPORT

Facility: #11109	Address: 4280 Foothill Boulevard, Oakland
Environmental Business Manager:	Mr. Paul Supple
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus (530) 566-1400
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000426
Consultant Project No.:	06-08-656
Facility Permits/Permitting Agency:	NA

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

1. Prepared and submitted First Quarter 2008 Semi-Annual Groundwater Monitoring Report.
2. Monthly free product gauging and bailing was conducted at the Site during the Second Quarter of 2008 by Stratus Environmental, Inc. (Stratus).
3. Installed passive skimmer in well MW-5 on 18 June 2008.

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

1. Prepared and submitted this Second Quarter 2008 Status Report (contained herein).
2. Conduct semi-annual ground-water monitoring/sampling for Third Quarter 2008.
3. Conduct monthly Site visits to monitor/remove free product.

### QUARTERLY RESULTS SUMMARY:

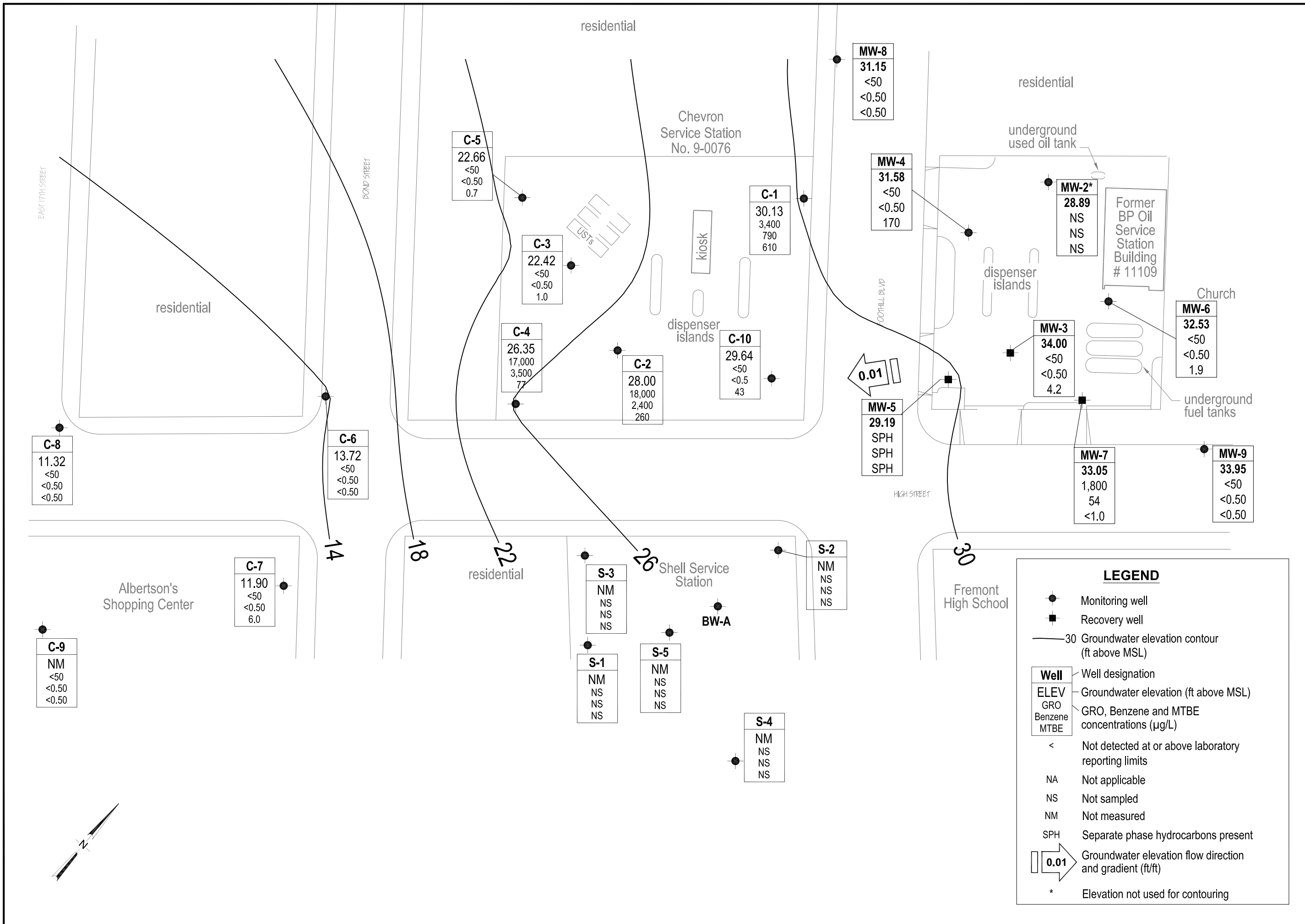
Current phase of project:	<b>Ground-water Monitoring/Sampling/Free Product Bailing</b>
Frequency of ground-water monitoring:	<b>Monthly: MW-5</b> <b>Semi-Annually (1Q &amp; 3Q): MW-2, MW-3, MW-4, MW-6, MW-7, MW-8, MW-9</b>
Frequency of ground-water sampling:	<b>Semi-Annually (1Q &amp; 3Q): MW-2, MW-4, MW-5, MW-7</b> <b>Annually (1Q): MW-3, MW-6, MW-8, MW-9</b>
Current remediation techniques:	<b>Passive Oil Skimmer/Monthly Free Product Bailing</b>
Is free product (FP) present on-site:	<b>Yes (MW-5)</b>
FP recovered this quarter:	<b>11 gallons (FP/water mixture)</b>
Depth to ground water (below TOC):	<b>NA</b>
General ground-water flow direction:	<b>NA</b>
Approximate hydraulic gradient:	<b>NA</b>

### DISCUSSION:

Monthly gauging and bailing of free product from well MW-5 was performed this quarter by Stratus Environmental Inc. (Stratus). On 1 April 2008, FP was measured at 0.07 feet in well MW-5. Approximately four gallons of FP/water mixture was removed from well MW-5 during this visit. On 20 May 2008, Stratus measured 0.07 feet of FP in well MW-5. Approximately seven gallons of FP/water mixture was removed from well MW-5 during this visit. On 18 June 2008, FP was measured at 0.18 feet in well MW-5. No FP/water mixture was reportedly removed from MW-5 during this visit to test the operation of a new oil skimmer. During the 18 June 2008 visit, Stratus installed a Keck brand Model PRC 4-inch Passive Oil Skimmer. An approximate total of 11 gallons of FP/water mixture were removed from well MW-5 during the Second Quarter 2008. Table 1 provides historical free product removal data from the Site. Field data sheets from Stratus' monthly free product bailing events can be found in Appendix A. The most recent analytical data can be referenced in the First Quarter 2008 Semi-Annual Ground-Water Monitoring Report. A Ground-Water Elevation Contour and Analytical Summary Map from First Quarter 2008 is provided as Drawing 1.

**ATTACHMENTS:**

- Drawing 1. Ground-Water Elevation Contours and Analytical Summary Map, 6 March 2008,  
Former BP Station #11109, 4280 Foothill Boulevard, Oakland, California
- Table 1. Summary of Free Product Removal, Former BP Service Station #11109,  
4280 Foothill Boulevard, Oakland, CA
- Appendix A. Stratus Monthly Gauging and LPH Removal Data Package



**LEGEND**

- Monitoring well
- Recovery well
- 30 Groundwater elevation contour (ft above MSL)
- Well Well designation
- ELEV Groundwater elevation (ft above MSL)
- GRO GRO, Benzene and MTBE concentrations (µg/L)
- MTBE
- < Not detected at or above laboratory reporting limits
- NA Not applicable
- NS Not sampled
- NM Not measured
- SPH Separate phase hydrocarbons present
- 0.01 Groundwater elevation flow direction and gradient (ft/ft)
- \* Elevation not used for contouring

**C-8**  
11.32  
<50  
<0.50  
<0.50

**C-6**  
13.72  
<50  
<0.50  
<0.50

**C-7**  
11.90  
<50  
<0.50  
6.0

**C-9**  
NM  
<50  
<0.50  
<0.50

**C-5**  
22.66  
<50  
<0.50  
0.7

**C-3**  
22.42  
<50  
<0.50  
1.0

**C-4**  
26.35  
17,000  
3,500  
77

**C-2**  
28.00  
18,000  
2,400  
260

**C-10**  
29.64  
<50  
<0.5  
43

**C-1**  
30.13  
3,400  
790  
610

**MW-8**  
31.15  
<50  
<0.50  
<0.50

**MW-4**  
31.58  
<50  
<0.50  
170

**MW-2\***  
28.89  
NS  
NS  
NS

**MW-3**  
34.00  
<50  
<0.50  
4.2

**MW-5**  
29.19  
SPH  
SPH  
SPH

**MW-7**  
33.05  
1,800  
54  
<1.0

**MW-6**  
32.53  
<50  
<0.50  
1.9

**MW-9**  
33.95  
<50  
<0.50  
<0.50

**S-3**  
NM  
NS  
NS  
NS

**S-1**  
NM  
NS  
NS  
NS

**S-5**  
NM  
NS  
NS  
NS

**S-2**  
NM  
NS  
NS  
NS

**S-4**  
NM  
NS  
NS  
NS

**BW-A**

**Table 1**

**Summary of Free Product Removal**  
Former BP Service Station #11109  
4280 Foothill Boulevard, Oakland, CA

WELL ID	DATE OF MONITORING EVENT	DEPTH TO WATER (feet)	PRODUCT THICKNESS (feet)	PRODUCT REMOVED (gallons)	CUMULATIVE PRODUCT REMOVED (gallons)
MW-5	8/25/1999	--	--	0.070	0.070
MW-5	3/9/2000	--	--	0.400	0.470
MW-5	7/14/2003	12.72	0.03	0.019	0.489
MW-5	8/25/2003	14.04	0.00	0.000	0.489
MW-5	9/25/2003	14.38	0.08	0.052	0.542
MW-5	10/3/2003	12.15	0.06	0.040	0.582
MW-5	11/12/2003	12.74	0.19	0.120	0.702
MW-5	12/9/2003	11.44	0.03	0.040	0.742
MW-5	2/2/2004	6.47	0.04	0.030	0.772
MW-5	2/9/2004	10.61	0.04	0.030	0.802
MW-5	3/9/2004	7.91	--	--	0.800
MW-5	4/13/2004	9.68	0.28	0.200	0.820
MW-5	5/5/2004	11.93	Sheen	--	0.820
MW-5	6/3/2004	12.60	Sheen	--	0.820
MW-5	7/2/2004	11.11	0.10	0.060	0.880
MW-5	8/31/2004	12.80	0.05	0.132	1.012
MW-5	9/17/2004	12.13	0.15	--	1.012
MW-5	10/25/2004	10.66	0.26	0.170	1.182
MW-5	11/8/2004	9.98	0.02	0.020	1.202
MW-5	12/15/2004	8.76	0.01	0.010	1.212
MW-5	1/13/2005	7.12	--	--	1.212
MW-5	2/1/2005	8.10	0.01	0.007	1.219
MW-5	3/7/2005	8.62	0.02	0.013	1.232
MW-5	4/29/2005	9.39	--	--	1.232
MW-5	5/12/2005	7.51	0.01	0.007	1.239
MW-5	6/23/2005	7.70	--	--	1.239
MW-5	7/2/2005	10.81	--	--	1.239
MW-5	8/24/2005	10.53	--	--	1.239
MW-5	9/6/2005	11.16	0.18	0.119	1.358
MW-5	1/27/2006	9.02	0.02	0.013	1.252
MW-5	2/15/2006	8.38	0.02	0.013	1.265
MW-5	3/6/2006	8.60	Sheen	--	1.384
MW-5	4/21/2006	8.02	0.27	0.251	1.635
MW-5	5/30/2006	9.13	0.07	0.045	1.680
MW-5	6/27/2006	9.49	0.09	0.058	1.739
MW-5	7/31/2006	10.08	0.08	0.052	1.791
MW-5	8/28/2006	10.75	0.09	0.059	1.849
MW-5	9/5/2006	6.16	0.03	0.020	1.869
MW-5	10/1/2006	--	--	--	1.869
MW-5	11/1/2006	--	--	--	1.869
MW-5	12/1/2006	--	--	--	1.869
MW-5	1/1/2007	--	--	--	1.869
MW-5	2/1/2007	--	--	--	1.869
MW-5	3/5/2007	8.34	Sheen	--	1.869
MW-5	4/1/2007	--	--	--	1.869
MW-5	5/1/2007	--	--	--	1.869
MW-5	6/1/2007	--	--	--	1.869
MW-5	7/1/2007	---	---	---	1.869
MW-5	8/1/2007	---	---	---	1.869
MW-5	9/7/2007	15.15	0.15	---	1.869
MW-5	9/18/2007	15.42	0.02	4.00*	5.869*
MW-5	10/17/2007	12.50	0.35	5.5*	11.369*
MW-5	11/8/2007	13.20	0.40	5.0*	16.369*
MW-5	12/12/2007	12.25	0.52	3.5*	19.869*
MW-5	1/14/2008	10.30	0.49	5.0*	24.869*
MW-5	2/27/2008	13.22	0.12	4.0*	28.869*
MW-5	3/6/2008	12.90	0.14	3.0*	31.869*
MW-5	<b>4/1/2008</b>	<b>9.52</b>	<b>0.07</b>	<b>4.0*</b>	<b>35.869*</b>
MW-5	<b>5/20/2008</b>	<b>8.68</b>	<b>0.07</b>	<b>7.0*</b>	<b>42.869*</b>
MW-5	<b>6/18/2008</b>	<b>10.46</b>	<b>0.18</b>	<b>0.00</b>	<b>42.869*</b>
			<b>FP Removed this Quarter:</b>		<b>11.000*</b>

ABBREVIATIONS & SYMBOLS:

-- = Not available/applicable/measured/calculated  
\* = FP/water mixture

NOTES:

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 MONTHLY GAUGING AND LPH REMOVAL DATA PACKAGE**



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

June 25, 2008

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

Re: Monthly Gauging and LPH Removal Data Package, BP Service Station No. 11109, located at  
4280 Foothill, Oakland, California.

**General Information**

*Data Submittal Prepared / Reviewed by:* Becky Carroll / Jay Johnson

*Phone Number:* (530) 676-6000

*On-Site Sup On-Site Supplier Representative:* Vince Zalutka

*Sampling Date:* April 1, 2008

*Arrival:* Not noted      *Departure:* Not noted

*Weather Conditions:* Not noted

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.

*Variations from Work Scope:* None noted.

*On-Site Sup On-Site Samplier Representative:* Vince Zalutka

*Sampling Date:* May 20, 2008

*Arrival:* Not noted      *Departure:* Not noted

*Weather Conditions:* Not noted

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.

*Variations from Work Scope:* None noted.



*On-Site Sup On-Site Sampler Representative:* Vince Zalutka

*Sampling Date:* June 18, 2008

*Arrival:* Not noted                      *Departure:* Not noted

*Weather Conditions:* Not noted

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Monthly visit to bail SPH from well MW-5.

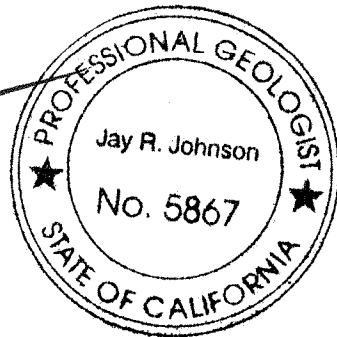
*Variations from Work Scope:* Technician installed a new skimmer in well MW-5.

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

Sincerely,

**STRATUS ENVIRONMENTAL, INC.**

Jay R. Johnson, P.G.  
Project Manager



**Attachments:**

- Field Data Sheets
- Field Procedures for Groundwater Sampling

cc: Mr. Paul Supple, BP/ARCO







## ATTACHMENT

### FIELD PROCEDURES FOR GROUNDWATER SAMPLING

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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  $\mu\text{s}$  daily and 1413  $\mu\text{s}$  and 447  $\mu\text{s}$  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<sup>®</sup> 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.