Atlantic Richfield Company
(a BP affiliated company)

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

30 July 2009

Re: Second Quarter 2009 Ground-Water Monitoring Report
Atlantic Richfield Company Service Station #2107
3310 Park Boulevard
Oakland, California
ACEH Case #RO0002526

"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

Second Quarter 2009 Ground-Water Monitoring Report
Atlantic Richfield Company Station #2107
3310 Park Boulevard
Oakland, 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
www.broadbentinc.com

30 July 2009

Project No. 06-88-614

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

BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

30 July 2009

Project No. 06-88-614

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

Attn.: Mr. Paul Supple

Re: Second Quarter 2009 Ground-Water Monitoring Report, Atlantic Richfield Company (a BP affiliated company) Station #2107, 3310 Park Boulevard, Oakland, California; ACEH Case No.RO0002526

Dear Mr. Supple:

Attached is the *Second Quarter 2009 Ground-Water Monitoring Report* for Atlantic Richfield Company Station #2107 located at, 3310 Park Boulevard, Oakland, Alameda County, California (Site). This report presents results of ground-water monitoring conducted at the Site during the Second Quarter of 2009.

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

Rob Miller, P.G., C.HG.
Principal Hydrogeologist

Enclosures

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

STATION # 2107 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #2107 Address:	3310 Park Boulevard, Oakland, California
Environmental Business Manager:	Mr. Paul Supple
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Rob Miller & Tom Venus (530) 566-1400
Consultant Project No.:	06-88-614
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case # RO0002526
Facility Permits/Permitting Agency:	NA

WORK PERFORMED THIS QUARTER (Second Quarter 2009):

1. Prepared and submitted *Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report* (BAI, 4/30/2009).
2. Conducted ground-water monitoring/sampling for Second Quarter 2009. Work performed on 18 June 2009 by Stratus Environmental, Inc. (Stratus).

WORK PROPOSED FOR NEXT QUARTER (Third Quarter 2009):

1. Prepared and submitted this *Second Quarter 2009 Ground-Water Monitoring Report* (contained herein).
2. Conduct ground-water monitoring/sampling for Third Quarter 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-Water Monitoring/Sampling**
Frequency of ground-water monitoring:*	**Quarterly: MW-11A, MW-11B, MW-12A, MW-12B, MW-13A, MW-13B**
Frequency of ground-water sampling:*	**Quarterly: MW-11A, MW-11B, MW-12A, MW-12B, MW-13A, MW-13B**
Is free product (FP) present on-site:	**No**
FP recovered this quarter:	**None**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**2.85 ft (MW-13B) to 14.58 ft (MW-11A)**
General ground-water flow direction:	**Northeast ('B' wells)**
Approximate hydraulic gradient:	**0.06 ft/ft ('B' wells)**

* Current schedule through Fourth Quarter 2009. Proposed modifications discussed below.

DISCUSSION:

First quarter 2009 ground-water monitoring and sampling was conducted at Station No. 2107 on 18 June 2009 by Stratus personnel. Water levels were gauged in the six wells associated with the Site. No irregularities were noted during water level gauging. Depth to water measurements ranged from 2.85 ft at MW-13B to 14.58 ft at MW-11A. Resulting ground-water surface elevations ranged from 113.93 ft in well MW-11B to 106.27 ft at well MW-11A. Water level elevations are summarized in Table 1. A review of the Second Quarter 2009 ground-water level elevations shows an initial upward vertical hydraulic gradient between paired wells MW-11A and MW-11B, a slight upward vertical hydraulic gradient (almost negligible) between paired wells MW-13A and MW-13B, but a downward vertical hydraulic gradient between paired wells MW-12A and MW-12B. These vertical gradients are similar to those documented during the First Quarter 2009. Water level elevations in the three 'B' wells

yielded a potentiometric ground-water flow direction and gradient to the northeast at approximately 0.06 ft/ft (see Table 3). Further future rounds of ground-water monitoring should determine whether this flow direction and gradient are representative of normal conditions at the Site and vicinity. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground water and respective ground-water elevations are summarized in Table 1. A Site Location Map is provided as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Ground-water samples were collected from wells MW-11A, MW-11B, MW-12A, MW-12B, MW-13A, and MW-13B. No irregularities were reported during sampling. Samples were submitted under chain-of-custody protocol to Calscience Environmental Laboratories, Inc. (Garden Grove, California), for analysis of Gasoline Range Organics (GRO, C6-12) by EPA Method 8015B; for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B; and Tert-Amyl Methyl Ether (TAME), Tert-Butyl Alcohol (TBA), Di-Isopropyl Ether (DIPE), Ethyl Tert-Butyl Ether (ETBE), and Methyl Tert-Butyl Ether (MTBE) by EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Concentrations of GRO were detected above the laboratory reporting limit in three of the six wells sampled at concentrations of 260 micrograms per liter (µg/L) in well MW-11A, 130 µg/L in well MW-11B and 140 µg/L in well MW-12B. Benzene was detected above the laboratory reporting limit in one of the six wells sampled at concentrations of 11 µg/L in well MW-11A. Ethylbenzene was detected above the laboratory reporting limit in one of the six wells sampled at concentrations of 6.8 µg/L in well MW-11A. MTBE was detected above the laboratory reporting limit in each of the six wells sampled at concentrations up to 380 µg/L in well MW-12B. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the six wells sampled this quarter.

Laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene, and MTBE concentrations are also presented in Drawing 2. A copy of the laboratory analytical report, including chain-of-custody documentation is provided in Appendix A. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

Preliminary review of the vertical gradients documented between co-located well pairs after two rounds of monitoring appears to show an upward vertical gradient at MW-11A/MW-11B, a negligible vertical gradient at MW-13A/MW-13B, and downward vertical gradient at MW-12A/MW-12B. As was mentioned in the *Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report* (BAI, 4/30/2009), over-drilling of well MW-13A to 24 ft bgs, then partially backfilling with bentonite to 19 ft bgs, and constructing the well screen from 11.5-16.5 ft bgs was a variation from the planned scope of work. The validity of data distinguishing ground-water conditions between wells MW-13A and MW-13B is therefore suspect.

In accordance with the letter sent by Atlantic Richfield Company to ACEH dated 26 June 2009, BAI recommends continued quarterly monitoring and sampling (for at least two more calendar quarters) to seek trends in the ground-water flow direction, vertical and horizontal gradients, contaminant concentrations, and to evaluate the reliability of data from the MW-13A/MW-13B paired wells.

CLOSURE:

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

ATTACHMENTS:

Drawing 1. Site Location Map, Station #2107, 3310 Park Boulevard, Oakland, California

Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 18 June 2009, Station #2107, 3310 Park Boulevard, Oakland, California

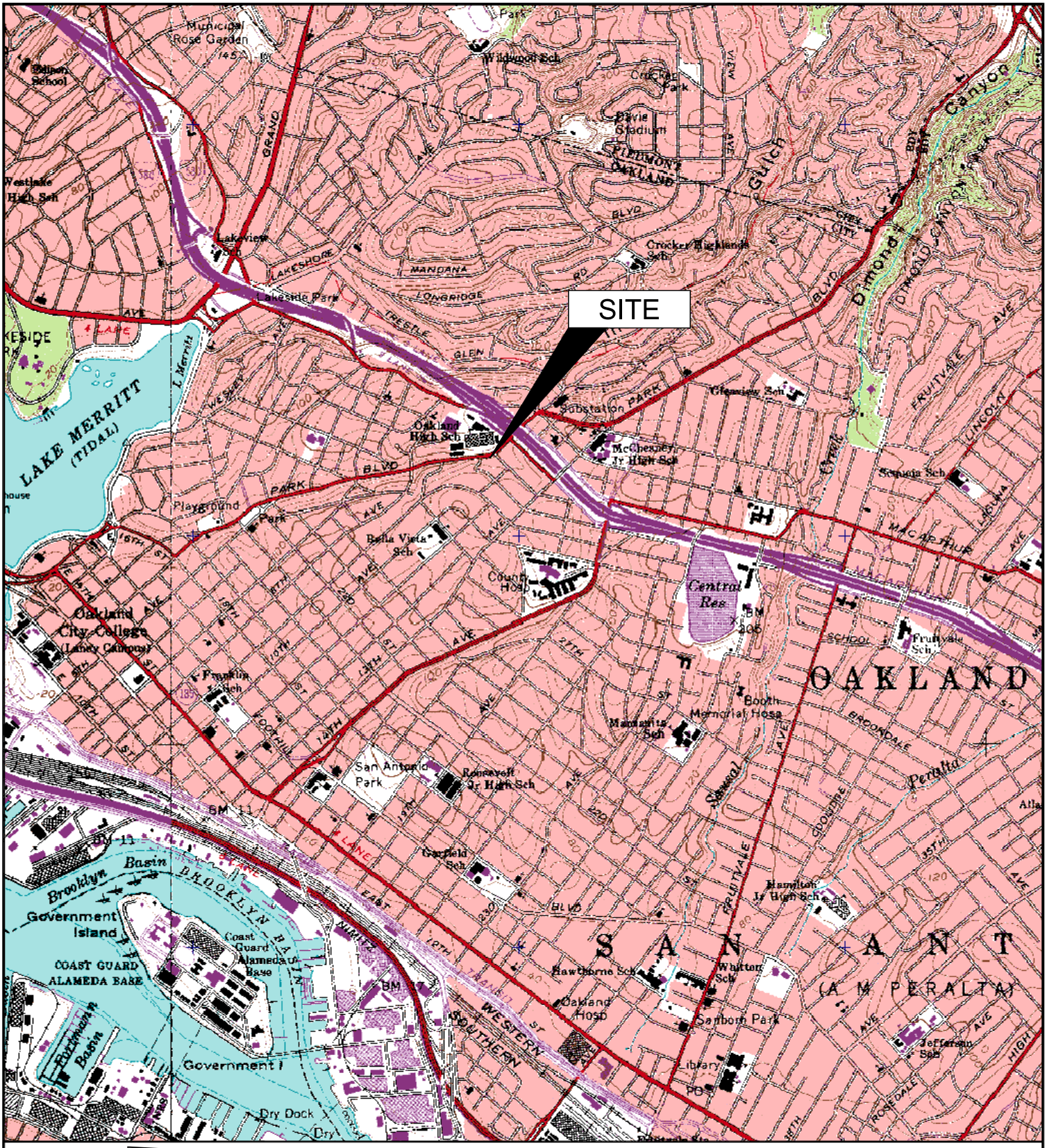
Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #2107, 3310 Park Boulevard, Oakland, California

Table 2. Summary of Fuel Additives Analytical Data, Station #2107, 3310 Park Boulevard, Oakland, California

Table 3. Historical Ground-Water Flow Direction and Gradient Data, Station #2107, 3310 Park Boulevard, Oakland, California

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

Appendix B. GeoTracker Upload Confirmation Receipts

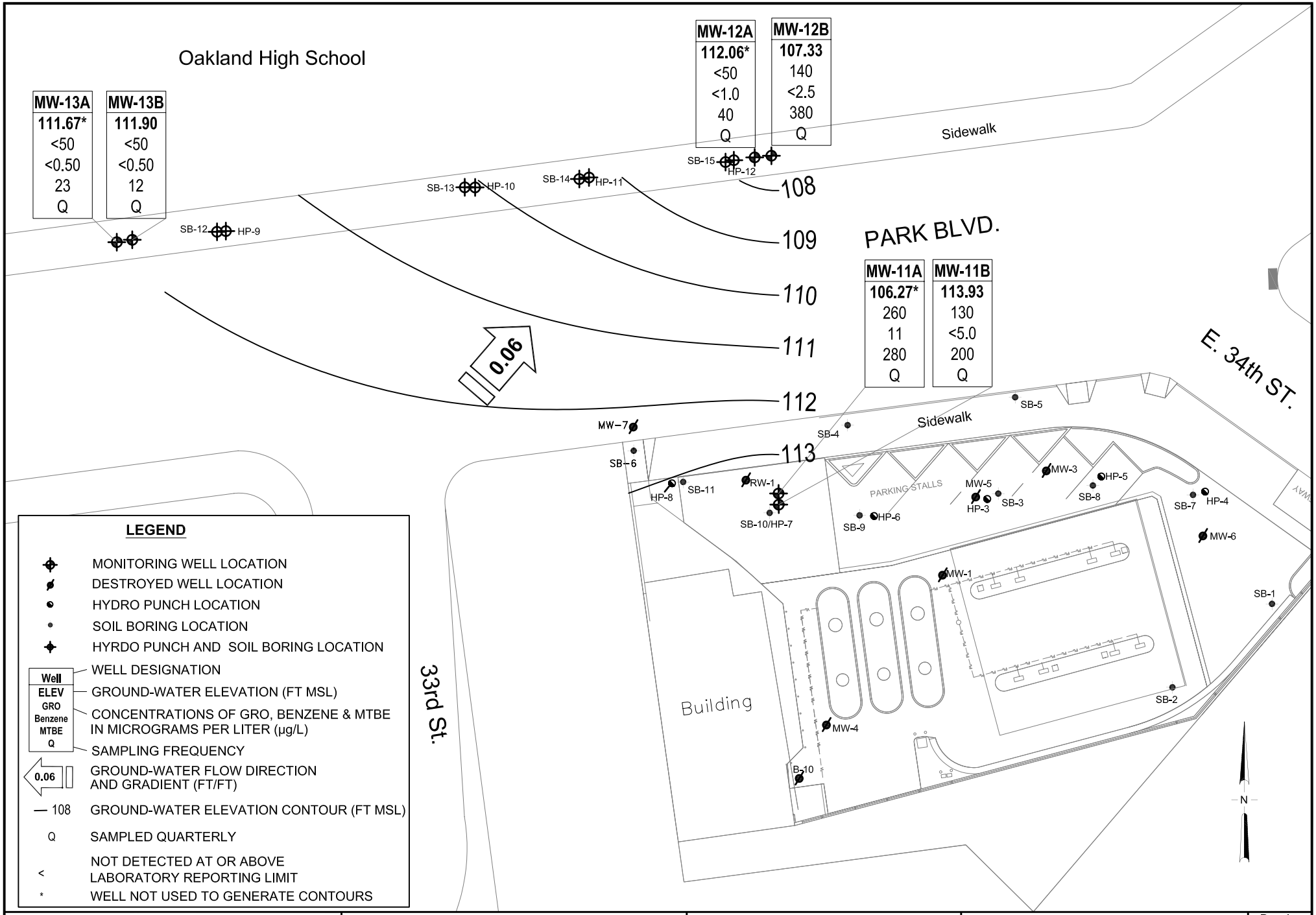


BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-614 Date: 07/22/09

Station #2107
3310 Park Boulevard
Oakland, California

Site Location Map

Drawing
1



LEGEND

- MONITORING WELL LOCATION
- DESTROYED WELL LOCATION
- HYDRO PUNCH LOCATION
- SOIL BORING LOCATION
- HYRDO PUNCH AND SOIL BORING LOCATION

Well
ELEV
GRO
Benzene
MTBE
Q

- WELL DESIGNATION
- GROUND-WATER ELEVATION (FT MSL)
- CONCENTRATIONS OF GRO, BENZENE & MTBE IN MICROGRAMS PER LITER (µg/L)
- SAMPLING FREQUENCY
- 0.06 — GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)
- 108 — GROUND-WATER ELEVATION CONTOUR (FT MSL)
- Q — SAMPLED QUARTERLY
- < — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- * — WELL NOT USED TO GENERATE CONTOURS

0 30 60
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California

Project No.: 06-88-614 Date: 7/10/09

Station #2107
3310 Park Boulevard
Oakland, California

Ground-Water Elevation Contours and Analytical Summary Map
18 June 2009

Drawing
1

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

Station #2107, 3310 Park Boulevard, Oakland, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-11A															
3/9/2009	P		120.85	16	20	12.41	108.44	1,000	1.5	<1.0	13	4.8	60	9.20	12.74
6/18/2009	**P**	**a**	**120.85**	**16**	**20**	**14.58**	**106.27**	**260**	**11**	**<5.0**	**6.8**	**<5.0**	**280**	**--**	**9.83**
MW-11B															
3/9/2009	P		121.31	26	30	7.33	113.98	280	1.3	1.3	7.6	<0.50	240	9.56	7.14
6/18/2009	**P**	**a**	**121.31**	**26**	**30**	**7.38**	**113.93**	**130**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**200**	**--**	**6.96**
MW-12A															
3/9/2009	P		120.64	13	18	8.70	111.94	<50	<0.50	<0.50	<0.50	<0.50	41	4.62	6.76
6/18/2009	**P**	**a**	**120.64**	**13**	**18**	**8.58**	**112.06**	**<50**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**40**	**--**	**7.92**
MW-12B															
3/9/2009	P		120.84	27	30	14.89	105.95	<50	<0.50	0.55	<0.50	<0.50	150	5.87	7.74
6/18/2009	**P**	**a**	**120.84**	**27**	**30**	**13.51**	**107.33**	**140**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**380**	**--**	**8.60**
MW-13A															
3/9/2009	P		114.55	11.5	16.5	9.53	105.02	<50	<0.50	<0.50	<0.50	<0.50	13	9.39	7.64
6/18/2009	**P**	**a**	**114.55**	**11.5**	**16.5**	**2.88**	**111.67**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**23**	**--**	**7.21**
MW-13B															
3/9/2009	P		114.75	18.5	22.5	2.96	111.79	<50	<0.50	<0.50	<0.50	<0.50	13	8.44	6.99
6/18/2009	**P**	**a**	**114.75**	**18.5**	**22.5**	**2.85**	**111.90**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**12**	**--**	**6.92**

ABBREVIATIONS AND SYMBOLS:
--/--- = Not measured/applicable/analyzed/sampled
µg/L = Micrograms per liter
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = Feet below ground surface
ft MSL = Feet above mean sea level
GRO = Gasoline range organics
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
< = Not detected at or above specified laboratory reporting limit
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing in ft MSL

FOOTNOTES:

NOTES:
a = DO meter not working.

Values for DO and pH were obtained through field measurements.

Table 2. Summary of Fuel Additives Analytical Data

Station #2107, 3310 Park Boulevard, Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-11A									
3/9/2009	--	<20	60	<1.0	<1.0	<1.0	--	--	
6/18/2009	**<3,000**	**<100**	**280**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	
MW-11B									
3/9/2009	--	<10	240	<0.50	<0.50	3.1	--	--	
6/18/2009	**<3,000**	**<100**	**200**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<5.0**	
MW-12A									
3/9/2009	--	<10	41	<0.50	<0.50	<0.50	--	--	
6/18/2009	**<600**	**<20**	**40**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	**<1.0**	
MW-12B									
3/9/2009	--	<10	150	<0.50	<0.50	<0.50	--	--	
6/18/2009	**<1,500**	**<50**	**380**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	**<2.5**	
MW-13A									
3/9/2009	--	<10	13	<0.50	<0.50	<0.50	--	--	
6/18/2009	**<300**	**<10**	**23**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-13B									
3/9/2009	--	<10	13	<0.50	<0.50	<0.50	--	--	
6/18/2009	**<300**	**<10**	**12**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	

ABBREVIATIONS AND SYMBOLS:
-- = Not analyzed/applicable/measurable
< = Not detected above reported detection limit
1,2-DCA = 1,2-Dichloroethane
µg/L = Micrograms per Liter
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

FOOTNOTES:

NOTES:
All volatile organic compounds analyzed using EPA Method 8260B.

Table 3. Historical Ground-Water Flow Direction and Gradient

Station #2107, 3310 Park Boulevard, Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/9/2009	Northeast	0.06
6/18/2009	**Northeast**	**0.06**

APPENDIX A

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

STRATUS
ENVIRONMENTAL INC.

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

July 8, 2009

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

Re: Groundwater Sampling Data Package, ARCO Service Station No. 2107, located at 3310 Park Boulevard, Oakland, California.

General Information

Data Submittal Prepared / Reviewed by: Carol Huff / Jay Johnson
Phone Number: (530) 676-6000
On-Site Supplier Representative: Tony Hill

Sampling Date: June 18, 2009

Unusual Field Conditions: None noted.

Scope of Work Performed: Quarterly monitoring and sampling.

Variations from Work Scope: Wells MW-11A, MW-12A, MW-12B, and MW-13A purged dry before three casing volumes were removed.

This submittal presents the 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. 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 Monitoring

CC: Mr. Paul Supple, BP/ARCO

STRATUS ENVIRONMENTAL, INC.

Site Address 3310 Park Blvd
City Oakland, CA
Sampled by: TH
Signature

ORIGINAL

Site Number Arco 2107
Project Number E 2107-04
Project PM Jay Johnson
DATE 06/18/09

Water Level Data					Purge Volume Calculations					Purge Method				Sample Record			Field Data
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge	Bailer	Pump	other	DTW at sample time (feet)	Sample I.D	Sample Time	DO (mg/L)
MW-11A	1045		14.58	18.48	3.90	2	.5	1.95	5		X	Pump @ .5		17.85	MW-11A	1305	NM *
11B	1043		7.38	29.05	21.67	2	.5	10.84	11		X			7.62	11B	1420	
12A	1053		8.58	17.67	9.09	2	.5	4.55	2		X	DR4 @ 2		8.58	12A	1325	
12B	1050		13.51	30.00	16.49	2	.5	8.25	4		X	DR4 @ 4		28.44	12B	1315	
13A	1057		2.88	16.35	13.47	2	.5	6.74	2.5		X	Dry @ 2.5		5.13	13A	1335	
MW-13B	1100		2.85	22.44	19.59	2	.5	9.80	10		X			2.96	MW-13B	1255	

* DO Meter Not Functioning

* Pulled all well caps 20mins prior to gauging

Multiplier
2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4

- MW-11A - recharge almost 3hrs
- MW-12B - " "

Please refer to groundwater sampling field procedures
pH/Conductivity/temperature Meter - Oakton Model PC-10
DO Meter - Oakton 300 Series (DO is always measured before purge)

CALIBRATION DATE
pH 6/18
Conductivity 6/18 ATH
DO NOT Working ATH

T:\Forms

ENVIRONMENTAL, INC.

Site Address 3310 Park Blvd
City Oakland, CA
Site Sampled by TH

Site Number E-2107-04
Project No. Arco 2107
Project PM Jay Johnson
Date Sampled 6/18/09

Well ID MW-11A				1305
purge start time bailer				odor
	Temp C	pH	cond	gallons
time	21.2	10.29	13.08m	Ø
time	DRY @ .5gal			
time	20.4	9.83	13.85m	(5)
time				
purge stop time				

Well ID MW-12B				1315
purge start time bailer				odor
	Temp C	pH	cond	gallons
time	21.9	7.99	1242	Ø
time	DRY @ 4gal			
time	21.5	8.60	1085	(4)
time				
pugre stop time				

Well ID MW-12A				1325
purge start time bailer				No odor
	Temp C	pH	cond	gallons
time	21.2	7.38	680	Ø
time	DRY @ 2gal			
time	21.1	7.92	674	(2)
time				
purge stop time				

Well ID MW-13A				1335
purge start time bailer				No odor
	Temp C	pH	cond	gallons
time	22.3	6.99	946	Ø
time	DRY @ 2.5gal			
time	21.2	7.21	928	(2.5)
time				
purge stop time				

Well ID MW-13B				1255
purge start time bailer				No odor
	Temp C	pH	cond	gallons
time	21.9	7.02	915	Ø
time	21.0	6.94	919	5
time	21.2	6.92	919	10
time				
purge stop time				

Well ID MW-11B				1420
purge start time bailer				odor
	Temp C	pH	cond	gallons
time	21.8	7.07	673	Ø
time	19.8	6.98	670	5.5
time	20.3	6.96	685	11
time				
purge stop time				

Well ID				
purge start time				
	Temp C	pH	cond	gallons
time				
time				
time				
time				
purge stop time				

Well ID				
purge start time				
	Temp C	pH	cond	gallons
time				
time				
time				
time				
purge stop time				

TRANSCRIBED

WELLHEAD OBSERVATION FORM

STRATUS ENVIRONMENTAL, INC

Site Name/Number: Arco 2107

Date: 6/18/09 Technican: A. Hill

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 [illegible]
MW-11A	X											
11B	X											
12A	X											
12B			X	A								
13A	X											
MW-13B	X											

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, grafitti on compound, etc.)

NO. 672143

NON-HAZARDOUS WASTE DATA FORM

TO BE COMPLETED BY GENERATOR

SITE:

EPA I.D. NO. NOT REQUIRED

NAME BP WEST COAST PRODUCTS LLC ARCO # 2107

ADDRESS P.O. BOX 80249 3330 Cameron Park Dr

RANCHO SANTA MARGARITA

CITY, STATE, ZIP CA 92688 Cameron Park, CA

PROFILE NO.

PHONE NO. ( )

CONTAINERS: No. VOLUME 28 YD 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		95-100%	5.		
2. TDH		<1%	6.		
3.			7. BEST#		
4.			8.		

PROPERTIES: 7-10 pH ☐ 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 Noothart BEST for BP — 6/12/09

TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

TRANSPORTER

Transporter #1 Transporter #2

NAME STRATUS ENVIRONMENTAL

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.

TYPED OR PRINTED FULL NAME & SIGNATURE — DATE 6/12/09

TSD FACILITY

NAME INSTRAT, INC

EPA I.D. NO.

DISPOSAL METHOD

ADDRESS 1105 AIRPORT RD #C

☐ LANDFILL ☐ OTHER

CITY, STATE, ZIP RIO VISTA, CA 94571

PHONE NO. 530-753-1829

TYPED OR PRINTED FULL NAME & SIGNATURE — DATE

GEN	OLD/NEW	L A	TONS
TRANS		S B	
C/Q		RT/CD	HWDF NONE

DISCREPANCY

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 2107 | Req Due Date (mm/dd/yy): STD - TAT | Page 1 of 1
BP/ARC Facility No: 2107 | Lab Work Order Number: | Rush TAT: Yes ___ No X

Lab Name: Cal Science	BP/ARC Facility Address: 3310 Park Blvd.	Consultant/Contractor: Stratus Environmental
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No: E2107-QM/O&M
Lab PM: Richard Villafania	Lead Regulatory Agency:	Address: 3330 Cameron Park Dr., Cameron Park, CA 95682
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0619734306	Consultant/Contractor PM: Jay Johnson
Lab Shipping Accnt:	Enfos Proposal No: 000TK-0003	Phone: 530-676-6000 / 530-676-6005 (fax)
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: chuff@stratusinc.net
Other Info:	Stage: appraise Activity: Monitor	Invoice To: BP/ARC ___ Contractor ___
BP/ARC EBM: Paul Supple		
EBM Phone: 925-275-3506		
EBM Email: paul.supple@bp.com		

Lab No.	Sample Description	Date 2009	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: GRO by 8015 M	BTEX / 5 OXY's	EDB / 1,2DA	Ethanol	Report Type & QC Level
	MW-11A	6/18	1305		X		6				X		X	X	X	X	* by 8260
	11B		1420														
	12A		1325														
	12B		1315														
	13A		1335														
	MW-13B		1255														
	TB-2107-06182009						2										ON Hold

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

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

Sampler's Name: A. Hill	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Stratus		6/22/09	1500			
Shipment Method: GSO Ship Date: 6/22/09						
Shipment Tracking No:						

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

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Calscience
Environmental
Laboratories, Inc.

July 07, 2009

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

Subject: **Calscience Work Order No.:** **09-06-2042**
Client Reference: **ARCO 2107**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 6/24/2009 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 06/24/09
Work Order No: 09-06-2042
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 2107

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11A	**09-06-2042-1-D**	**06/18/09 13:05**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 18:31**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	260	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	108	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11B	**09-06-2042-2-E**	**06/18/09 14:20**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 19:04**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	130	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	115	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12A	**09-06-2042-3-E**	**06/18/09 13:25**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 19:37**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	115	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12B	**09-06-2042-4-D**	**06/18/09 13:15**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 17:58**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	140	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	115	38-134			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.	Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550	Work Order No:	09-06-2042
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8015B (M)

Project: ARCO 2107

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13A	**09-06-2042-5-E**	**06/18/09 13:35**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 20:09**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	108	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13B	**09-06-2042-6-E**	**06/18/09 12:55**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 20:43**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	115	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-695-589**	**N/A**	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09 13:01**	**090629B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	98	38-134			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L
Project: ARCO 2107			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11A	**09-06-2042-1-E**	**06/18/09 13:05**	**Aqueous**	**GC/MS BB**	**06/27/09**	**06/27/09 22:23**	**090627L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	11	5.0	10		Methyl-t-Butyl Ether (MTBE)	280	5.0	10	
1,2-Dibromoethane	ND	5.0	10		Tert-Butyl Alcohol (TBA)	ND	100	10	
1,2-Dichloroethane	ND	5.0	10		Diisopropyl Ether (DIPE)	ND	5.0	10	
Ethylbenzene	6.8	5.0	10		Ethyl-t-Butyl Ether (ETBE)	ND	5.0	10	
Toluene	ND	5.0	10		Tert-Amyl-Methyl Ether (TAME)	ND	5.0	10	
Xylenes (total)	ND	5.0	10		Ethanol	ND	3000	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	119	80-128			Dibromofluoromethane	1	80-127		LG,AY
Toluene-d8	103	80-120			1,4-Bromofluorobenzene	102	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11B	**09-06-2042-2-A**	**06/18/09 14:20**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 17:04**	**090626L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	5.0	10		Methyl-t-Butyl Ether (MTBE)	200	5.0	10	
1,2-Dibromoethane	ND	5.0	10		Tert-Butyl Alcohol (TBA)	ND	100	10	
1,2-Dichloroethane	ND	5.0	10		Diisopropyl Ether (DIPE)	ND	5.0	10	
Ethylbenzene	ND	5.0	10		Ethyl-t-Butyl Ether (ETBE)	ND	5.0	10	
Toluene	ND	5.0	10		Tert-Amyl-Methyl Ether (TAME)	ND	5.0	10	
Xylenes (total)	ND	5.0	10		Ethanol	ND	3000	10	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	113	80-128			Dibromofluoromethane	103	80-127		
Toluene-d8	98	80-120			1,4-Bromofluorobenzene	100	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12A	**09-06-2042-3-A**	**06/18/09 13:25**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 18:39**	**090626L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	1.0	2		Methyl-t-Butyl Ether (MTBE)	40	1.0	2	
1,2-Dibromoethane	ND	1.0	2		Tert-Butyl Alcohol (TBA)	ND	20	2	
1,2-Dichloroethane	ND	1.0	2		Diisopropyl Ether (DIPE)	ND	1.0	2	
Ethylbenzene	ND	1.0	2		Ethyl-t-Butyl Ether (ETBE)	ND	1.0	2	
Toluene	ND	1.0	2		Tert-Amyl-Methyl Ether (TAME)	ND	1.0	2	
Xylenes (total)	ND	1.0	2		Ethanol	ND	600	2	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	112	80-128			Dibromofluoromethane	101	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	102	68-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

Stratus Environmental, inc.		Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B
		Units:	ug/L
Project: ARCO 2107			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12B	**09-06-2042-4-A**	**06/18/09 13:15**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 19:11**	**090626L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.5	5		Methyl-t-Butyl Ether (MTBE)	380	5.0	10	
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	ND	2.5	5		Ethyl-t-Butyl Ether (ETBE)	ND	2.5	5	
Toluene	ND	2.5	5		Tert-Amyl-Methyl Ether (TAME)	ND	2.5	5	
Xylenes (total)	ND	2.5	5		Ethanol	ND	1500	5	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	118	80-128			Dibromofluoromethane	104	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	105	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13A	**09-06-2042-5-A**	**06/18/09 13:35**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 14:24**	**090626L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	23	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	80-128			Dibromofluoromethane	102	80-127		
Toluene-d8	102	80-120			1,4-Bromofluorobenzene	101	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13B	**09-06-2042-6-A**	**06/18/09 12:55**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 14:56**	**090626L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	12	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	113	80-128			Dibromofluoromethane	102	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	101	68-120		

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 06/24/09
Work Order No: 09-06-2042
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 2107

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-703-958**	**N/A**	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09 18:08**	**090626L01**

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	110	80-128			Dibromofluoromethane	104	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	101	68-120		

Method Blank	**099-12-703-959**	**N/A**	**Aqueous**	**GC/MS BB**	**06/27/09**	**06/27/09 13:52**	**090627L01**

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	114	80-128			Dibromofluoromethane	103	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	98	68-120		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-06-1658-11	**Aqueous**	**GC 4**	**06/29/09**	**06/29/09**	**090629S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	107	93	38-134	11	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.	Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550	Work Order No:	09-06-2042
Cameron Park, CA 95682-8861	Preparation:	EPA 5030B
	Method:	EPA 8260B

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-13A	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09**	**090626S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	91	98	76-124	7	0-20	
Carbon Tetrachloride	100	106	74-134	6	0-20	
Chlorobenzene	89	96	80-120	8	0-20	
1,2-Dibromoethane	89	93	80-120	5	0-20	
1,2-Dichlorobenzene	92	102	80-120	9	0-20	
1,1-Dichloroethene	94	98	73-127	3	0-20	
Ethylbenzene	90	96	78-126	7	0-20	
Toluene	90	98	80-120	9	0-20	
Trichloroethene	90	94	77-120	5	0-20	
Vinyl Chloride	90	102	72-126	12	0-20	
Methyl-t-Butyl Ether (MTBE)	96	109	67-121	4	0-49	
Tert-Butyl Alcohol (TBA)	91	95	36-162	4	0-30	
Diisopropyl Ether (DIPE)	93	101	60-138	8	0-45	
Ethyl-t-Butyl Ether (ETBE)	90	97	69-123	7	0-30	
Tert-Amyl-Methyl Ether (TAME)	88	95	65-120	7	0-20	
Ethanol	94	104	30-180	10	0-72	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	06/24/09
3330 Cameron Park Drive, Suite 550		Work Order No:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-06-2036-1	**Aqueous**	**GC/MS BB**	**06/27/09**	**06/27/09**	**090627S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	92	93	76-124	1	0-20	
Carbon Tetrachloride	105	108	74-134	2	0-20	
Chlorobenzene	90	91	80-120	1	0-20	
1,2-Dibromoethane	91	90	80-120	1	0-20	
1,2-Dichlorobenzene	94	94	80-120	0	0-20	
1,1-Dichloroethene	98	101	73-127	3	0-20	
Ethylbenzene	94	94	78-126	0	0-20	
Toluene	93	92	80-120	1	0-20	
Trichloroethene	92	93	77-120	1	0-20	
Vinyl Chloride	94	92	72-126	2	0-20	
Methyl-t-Butyl Ether (MTBE)	92	94	67-121	2	0-49	
Tert-Butyl Alcohol (TBA)	90	94	36-162	4	0-30	
Diisopropyl Ether (DIPE)	95	97	60-138	2	0-45	
Ethyl-t-Butyl Ether (ETBE)	93	96	69-123	3	0-30	
Tert-Amyl-Methyl Ether (TAME)	91	91	65-120	0	0-20	
Ethanol	94	99	30-180	6	0-72	

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:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-589	Aqueous	GC 4	06/29/09	06/29/09	090629B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	105	100	78-120	4	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:	09-06-2042
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8260B

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-958	**Aqueous**	**GC/MS BB**	**06/26/09**	**06/26/09**	**090626L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	96	95	80-120	73-127	1	0-20	
Carbon Tetrachloride	103	103	74-134	64-144	0	0-20	
Chlorobenzene	93	92	80-120	73-127	2	0-20	
1,2-Dibromoethane	94	92	79-121	72-128	2	0-20	
1,2-Dichlorobenzene	98	96	80-120	73-127	2	0-20	
1,1-Dichloroethene	102	100	78-126	70-134	2	0-28	
Ethylbenzene	96	95	80-120	73-127	1	0-20	
Toluene	96	94	80-120	73-127	2	0-20	
Trichloroethene	98	99	79-127	71-135	0	0-20	
Vinyl Chloride	95	96	72-132	62-142	1	0-20	
Methyl-t-Butyl Ether (MTBE)	98	96	69-123	60-132	2	0-20	
Tert-Butyl Alcohol (TBA)	89	87	63-123	53-133	1	0-20	
Diisopropyl Ether (DIPE)	100	100	59-137	46-150	1	0-37	
Ethyl-t-Butyl Ether (ETBE)	98	96	69-123	60-132	2	0-20	
Tert-Amyl-Methyl Ether (TAME)	97	92	70-120	62-128	5	0-20	
Ethanol	99	106	28-160	6-182	7	0-57	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.	Date Received: N/A
3330 Cameron Park Drive, Suite 550	Work Order No: 09-06-2042
Cameron Park, CA 95682-8861	Preparation: EPA 5030B
	Method: EPA 8260B

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-703-959	Aqueous	GC/MS BB	06/27/09	06/27/09	090627L01

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	93	93	80-120	73-127	0	0-20	
Carbon Tetrachloride	101	103	74-134	64-144	2	0-20	
Chlorobenzene	93	92	80-120	73-127	1	0-20	
1,2-Dibromoethane	92	92	79-121	72-128	1	0-20	
1,2-Dichlorobenzene	96	96	80-120	73-127	0	0-20	
1,1-Dichloroethene	100	100	78-126	70-134	0	0-28	
Ethylbenzene	97	96	80-120	73-127	1	0-20	
Toluene	93	92	80-120	73-127	1	0-20	
Trichloroethene	96	95	79-127	71-135	1	0-20	
Vinyl Chloride	103	100	72-132	62-142	3	0-20	
Methyl-t-Butyl Ether (MTBE)	97	94	69-123	60-132	4	0-20	
Tert-Butyl Alcohol (TBA)	86	88	63-123	53-133	2	0-20	
Diisopropyl Ether (DIPE)	99	97	59-137	46-150	2	0-37	
Ethyl-t-Butyl Ether (ETBE)	97	94	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	93	91	70-120	62-128	2	0-20	
Ethanol	84	97	28-160	6-182	13	0-57	

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

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-06-2042

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

Work Order Number: 09-06-2042

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

Atlantic Richfield Company
A BP affiliated company

Laboratory Management Program LaMP Chain of Custody Record

Page 1 of 1

BP/ARC Project Name: ARCO 2107
BP/ARC Facility No: 2107
Req Due Date (mm/dd/yy): STD - TAT
Rush TAT: Yes ___ No X
Lab Work Order Number: 09-06-2042

Lab Name: Cal Science		BP/ARC Facility Address: 3310 Park Blvd.		Consultant/Contractor: Stratus Environmental	
Lab Address: 7440 Lincoln Way		City, State, ZIP Code: Oakland, CA		Consultant/Contractor Project No: E2107-QM/O&M	
Lab PM: Richard Villafania		Lead Regulatory Agency:		Address: 3330 Cameron Park Dr., Cameron Park, CA 95682	
Lab Phone: 714-895-5494 / 714-895-7501 (fax)		California Global ID No.: T0619743306		Consultant/Contractor PM: Jay Johnson	
Lab Shipping Accnt:		Enfos Proposal No: 000TK-0003		Phone: 530-676-6000 / 530-676-6005 (fax)	
Lab Bottle Order No:		Accounting Mode: Provision X OOC-BU ___ OOC-RM ___		Email EDD To: chuff@stratusinc.net	
Other Info:		Stage: appraise Activity: Monitor		Invoice To: BP/ARC ___ Contractor ___	
BP/ARC EBM: Paul Supple					
EBM Phone: 925-275-3506					
EBM Email: paul.supple@bp.com					

Lab No.	Sample Description	Date 2009	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	No. Containers / Preservative: Total Number of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	Methanol	Requested Analyses: GRO by 8015 M	BTEX by 8260	EDB / 1,2DCA	Ethanol	Report Type & QC Level / Comments
1	MW-11A	06/18	1305		X		6				X		X	X	X	X	* by 8260
2	11B		1420														
3	12A		1325														
4	12B		1315														
5	13A		1335														
6	MW-13B		1255														
7	TB-2107-06182009						2										ON Hold

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

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

Sampler's Name: A. Hill	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Stratus		6/22/09	1500	[illegible]	6/24/09	10:30
Shipment Method: GSO Ship Date: 6/22/09						
Shipment Tracking No: #925548227 9						

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

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: ____ °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-06-2042

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: STRATUS

DATE: 06/24/09

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

Temperature 3.2 °C - 0.2 °C (CF) = 3.0 °C ☐ Blank ☑ Sample

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

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

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

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

CUSTODY SEALS INTACT:

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

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: [illegible]

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑ 6/24/09	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☑	☐	☐
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☑VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBp ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGJ ☐500AGJs ☐250AGB ☐250CGB ☐250CGBs ☐1PB ☐500PB ☐500PBna ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PJ ☐100PJna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____ **Other:** ☐_____ Checked/Labeled by: DL

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar (Wide-mouth) B: Bottle (Narrow-mouth) Reviewed by: [illegible]

Preservative: h: HCL n: HNO3 na_2:$Na_2S_2O_3$ Na: NaOH p: H_3PO_4 s: H_2SO_4 znna: $ZnAc_2$+NaOH f: Field-filtered Scanned by: DL

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-06-2 0 4 2

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s)/preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☑ **# of containers**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Air sample containers compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

Comments:

(-7) received 4 vials w/HCl instead of 2.

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO Received

Comments: _____

*Transferred at Client's request.

Initial / Date BL 6/24/09

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

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

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 RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

Submittal Type:	**GEO_WELL**
Submittal Title:	**2Q09 GEO_WELL 2107**
Facility Global ID:	**T06019734306**
Facility Name:	**ARCO #2107**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**7/17/2009 2:18:11 PM**
Confirmation Number:	**3321084439**

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:	**2Q09 GW Monitoring**
Facility Global ID:	**T06019734306**
Facility Name:	**ARCO #2107**
File Name:	**09062042.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**7/17/2009 2:19:44 PM**
Confirmation Number:	**9684175789**

VIEW QC REPORT

VIEW DETECTIONS REPORT