



Atlantic Richfield Company  
(a BP affiliated company)

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

**RECEIVED**

9:57 am, May 01, 2009

Alameda County  
Environmental Health



30 April 2009

Re: Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report  
Atlantic Richfield Company Station No.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 Manger



A BP affiliated company

**GROUND-WATER INVESTIGATION AND  
FIRST QUARTER 2009 GROUND-WATER  
MONITORING REPORT**

Atlantic Richfield Company Station No. 2107  
3310 Park Boulevard, Oakland, California  
ACEH Fuel Leak Case No. RO0002526

**Prepared for:**

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

**Prepared by:**



1324 Mangrove Ave., Suite 212  
Chico, California 95926  
(530) 566-1400  
[www.broadbentinc.com](http://www.broadbentinc.com)

30 April 2009

Project No. 06-88-614

30 April 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: Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report,  
Atlantic Richfield Company Station No.2107, 3310 Park Boulevard, Oakland, California;  
ACEH Case No.RO0002526

Dear Mr. Supple:

Broadbent & Associates, Inc. (BAI) is pleased to submit this *Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report* for Atlantic Richfield Company Station No.2107 (herein referred to as Station No.2107) located at 3310 Park Boulevard, Oakland, California (Site). This investigation and sampling event was conducted in accordance with the Alameda County Environmental Health (ACEH) approval letter dated 17 September 2008. This report presents a description of field activities conducted and analytical results obtained during the installation of six new ground-water monitoring wells. This report also presents a summary of results from ground-water monitoring and sampling conducted during the First Quarter of 2009.

Should you have questions or require additional information, please do not hesitate to contact us at (530) 566-1400.

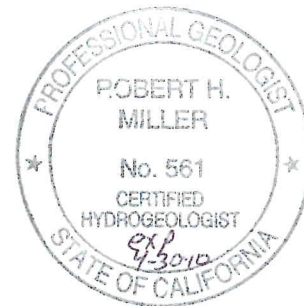
Sincerely,  
BROADBENT & ASSOCIATES, INC.



Thomas A. Venus  
Senior Engineer, P.E.



Robert H. 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

**GROUND-WATER INVESTIGATION AND  
FIRST QUARTER 2009 GROUND-WATER MONITORING REPORT  
Atlantic Richfield Company Station No. 2107  
3310 Park Boulevard, Oakland, California**

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Drawing 2	Site Map with Monitoring Well Locations
Drawing 3	Ground-Water Elevation Contours and Analytical Summary Map, 9 March 2009
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**APPENDICES**

Appendix A	Recent Regulatory Correspondence
Appendix B	Stratus Monitoring Well Installation Data Package (Includes Field Notes, Lithologic Boring and Well Construction Logs, Well Permits, Encroachment and Excavation Permits, Laboratory Analytical Reports with Chain-of-Custody Documentation)
Appendix C	Stratus Ground-Water Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Reports with Chain-of-Custody Documentation and Field Procedures)
Appendix D	GeoTracker Upload Confirmation Reports

**GROUND-WATER INVESTIGATION AND  
FIRST QUARTER 2009 GROUND-WATER MONITORING REPORT  
Atlantic Richfield Company Station No. 2107  
3310 Park Boulevard, Oakland, California**

## **1.0 INTRODUCTION**

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this *Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report* for monitoring well installation and quarterly ground-water monitoring and sampling activities at the Atlantic Richfield Company Station No. 2107, located at 3310 Park Boulevard, Oakland, California (Site). This ground-water investigation and quarterly ground-water monitoring and sampling event were completed to further evaluate hydrogeologic conditions, including an evaluation to determine whether vertical gradients exist at the Site, as well as delineating the vertical extent of ground-water contamination by Methyl-Tertiary Butyl Ether (MTBE) through ground-water contaminant plume monitoring. Investigation activities were conducted in accordance with the BAI *Work Plan for Ground-Water Investigation* dated 2 September 2008, as approved by ACEH in their response letter dated 17 September 2008. A copy of this letter is provided in Appendix A.

## **2.0 SITE BACKGROUND**

The Site is an active ARCO-brand gasoline retail outlet located on the southwest corner of Park Boulevard and East 34<sup>th</sup> Street in Oakland, California (Drawings 1 and 2). The land use in the immediate vicinity of the Site is mixed commercial, residential, and educational. The Site presently consists of a service station building, free-standing canopy over two dispenser islands with four, double-sided pumps and three double-walled fiberglass 12,000-gallon gasoline underground storage tanks (USTs) with associated piping. The majority of the Site is surfaced with asphalt or concrete. The Site was historically leveled by cutting into the hillside on the southern portion of the Site. A detailed Site history including Site geology and hydrogeology can be found within the *Work Plan for Ground-Water Investigation* submitted to ACEH by BAI on 2 September 2008.

## **3.0 GROUND-WATER INVESTIGATION**

### **3.1 Preliminary Field Activities**

Prior to initiating field activities, Stratus obtained the necessary well drilling permits from the Alameda County Public Works Agency and excavation and encroachment permits from the City of Oakland (See Appendix B). Stratus also prepared a site health and safety plan specific to the work scope and cleared the Site for subsurface utilities. The utility clearance included notifying Underground Service Alert of the work a minimum of 48 hours prior to initiating the field investigation, and additionally securing the services of Cruz Brothers, a private utility locating company to confirm the absence of underground utilities at the boring location. Boreholes were physically cleared to five feet below ground surface (bgs) using an air knife rig.

### **3.2 Soil Borings**

Soil borings for monitoring wells MW-11A, MW-11B, MW-12A, MW-12B, MW-13A and MW-13B were drilled by RSI Drilling, a California-licensed drilling contractor, using a Geoprobe 6620 DT Drill rig with eight-inch diameter hollow-stem augers. MW-11A was drilled to a total depth of 20 feet below ground surface (bgs), MW-11B was drilled to a total depth of 30 feet bgs, MW-12A was drilled to a total depth of 18 feet bgs, MW-12B was drilled to a total depth of 30.5 feet bgs, MW-13A was drilled to a total depth of 24 feet bgs, and MW-13B was drilled to a total depth of 22.5 feet bgs. The drilling of MW-13A to the greater depth of 24 ft bgs is noted by Stratus in their data package as a variation from the planned scope of work. During drilling activities, the deeper soil borings were described by the on-site Stratus geologist using the Universal Soil Classification System (USCS). As is apparent upon review of the lithologic boring logs, BAI found little evidence of a uniform confining layer across the Property or off-site that would imply two distinct water-bearing formations. The presence of finer-grained lithology that could act as a confining layer was observed in some borings, but was not consistent. Field notes, lithologic boring logs and well construction logs are provided in Appendix B. Boring logs were uploaded to the GeoTracker AB2886 database. Copies of the upload confirmation reports (GEO\_BORE files) are provided in Appendix D.

### **3.3 Monitoring Well Construction**

Monitoring wells MW-11A, MW-11B, MW-12A, MW-12B, MW-13A and MW-13B were constructed using flush-threaded, two-inch diameter, 0.010-inch factory-slotted Schedule 40 PVC pipe. The screen interval in MW-11A extends from 16 ft bgs to 20 ft bgs. The screen interval in MW-11B extends from 26 ft bgs to 30 ft bgs. The screen interval in MW-12A extends from 13 ft bgs to 18 ft bgs. The screen interval in MW-12B extends from 27 ft bgs to 30 ft bgs. The screen interval in MW-13A extends from 11.5 ft bgs to 16.5 ft bgs. The screen interval in MW-13B extends from 18.5 ft bgs to 22.5 ft bgs. The filter pack surrounding the screen intervals consists of No.2/12 silica sand from the bottom of the well boring to two feet above the screen intervals. Each wellhead was secured with a locking well cap, and protected by a traffic-rated well vault set flush with the local ground surface. Additional details of well construction are provided in the field notes, lithologic boring logs and well construction logs provided in Appendix B. Well construction information was uploaded to the GeoTracker AB2886 database. Copies of GeoTracker upload confirmation reports are provided within Appendix D.

### **3.4 Well Surveying and Development**

The site was resurveyed, incorporating new wells MW-11A, MW-11B, MW-12A, MW-12B, MW-13A and MW-13B, by Wood Rodgers of Sacramento, California on 16 March 2009. The data package from Wood Rodgers is provided within Appendix B. This well survey information was uploaded to the GeoTracker AB2886 database. Copies of the GeoTracker upload confirmation reports (GEO\_MAP, GEO\_XY, and GEO\_Z files) are provided within Appendix D.

Monitor wells MW-11A, MW-11B, MW-12A, MW-12B, MW-13A and MW-13B were developed on 5 March 2009. Well development activities consisted of surging the wells with a bailer and pumping the wells with a submersible ground-water pump until relatively silt-free water was removed. Wells MW-11A, MW-12B and MW-13A ran dry before the goal of purging 10 wetted casing volumes of water was achieved. Well MW-11A ran dry after approximately six gallons of the targeted 12.14 gallons were purged, well MW-12B ran dry after approximately 12 gallons of the targeted 24.96 gallons were purged, and well MW-13A ran dry after approximately 10 gallons of the targeted 21.71 gallons were purged. After development, the wells were left to hydraulically equilibrate prior to water level measurement and sampling the next week. It should be noted that well MW-11A still has significant sediment which will require further development to remove.

### 3.5 Investigation-derived Residuals Management

Residual solids and liquids generated during the Site investigation activities were stored temporarily onsite in a Department of Transportation-approved 55-gallon drum pending analytical results and profiling. Following characterization and profiling, Belshire Environmental Services was scheduled to transport the investigation-derived residuals to an Atlantic Richfield Company-approved facility for treatment or disposal.

## 4.0 GROUND-WATER MONITORING AND SAMPLING

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

### 4.1 Work Performed This Quarter (First Quarter 2009)

1. Installed six ground-water monitoring wells. Work performed by Stratus between 23-24 February 2009.
2. Developed ground-water monitoring wells. Work performed by Stratus on 5 March 2009.
3. Conducted ground-water monitoring/sampling for First Quarter 2009. Work performed by Stratus on 9 March 2009.

### 4.2 Work Proposed for Next Quarter (Second Quarter 2009)

1. Prepared and submitted Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report (contained herein).
2. Redevelop on-site shallow well MW-11A to remove excessive sediment.
3. Conduct quarterly ground-water monitoring/sampling for Second Quarter 2009.

### 4.3 Quarterly Results Summary

Current phase of project:	<b>Ground-Water Monitoring/Sampling</b>
Frequency of ground-water monitoring:	<b>Quarterly: MW-11A, MW-11B, MW-12A, MW-12B, MW-13A, MW-13B</b>
Frequency of ground-water sampling:	<b>Quarterly: MW-11A, MW-11B, MW-12A, MW-12B, MW-13A, MW-13B</b>
Is free product (FP) present on-site:	<b>No</b>
FP recovered this quarter:	<b>None</b>
Current remediation techniques:	<b>NA</b>
Depth to ground water (below TOC):	<b>2.96 (MW-13B) to 14.89 (MW-12B)</b>
General ground-water flow direction:	<b>Northeast ('B' wells)</b>
Approximate hydraulic gradient:	<b>0.06 ft/ft ('B' wells)</b>

### 4.4 Discussion

First quarter 2009 ground-water monitoring and sampling was conducted at Station No. 2107 on 9 March 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 2.96 ft at MW-13B to 14.89 ft at MW-12B. Resulting ground-water surface elevations ranged from 113.98 ft above mean sea level in well MW-11B to 105.02 ft at well MW-13A. Water level elevations are summarized in Table 1. It should be noted that one of the objectives of the ground-water investigation was to determine whether vertical gradients exist at the Site. A review of the First Quarter 2009 ground-water level elevations shows an initial upward vertical hydraulic gradient between paired wells MW-11A and MW-11B, an upward vertical hydraulic gradient between paired wells MW-13A and MW-13B, but a downward vertical hydraulic gradient between paired wells MW-12A and MW-12B. 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. 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 C. Measured depths to ground water and respective ground-water elevations are summarized in Table 1.

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 C.



Concentrations of GRO were detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 1,000 micrograms per liter ( $\mu\text{g/L}$ ) in well MW-11A and 280  $\mu\text{g/L}$  in well MW-11B. Benzene was detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 1.5  $\mu\text{g/L}$  in well MW-11A and 1.3  $\mu\text{g/L}$  in well MW-11B. Ethylbenzene was detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 13  $\mu\text{g/L}$  in well MW-11A and 7.6  $\mu\text{g/L}$  in well MW-11B. Toluene was detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 1.3  $\mu\text{g/L}$  in well MW-11B and 0.55  $\mu\text{g/L}$  in well MW-12B. Total Xylenes were detected above the laboratory reporting limit in one of the six wells sampled at a concentration of 4.8  $\mu\text{g/L}$  in well MW-11A. TAME was detected above the laboratory reporting limit in two of the six wells sampled at concentrations of 3.1  $\mu\text{g/L}$  and 0.60  $\mu\text{g/L}$  in wells MW-11B and MW-12B, respectively. MTBE was detected above the laboratory reporting limit in five of the seven wells sampled at concentrations up to 240  $\mu\text{g/L}$  in well MW-11B. 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 1. A copy of the laboratory analytical report, including chain-of-custody documentation is provided in Appendix C. Ground-water monitoring data (GEO\_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix D.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

BAI prepared this *Ground-Water Investigation and First Quarter 2009 Ground-Water Monitoring Report* for Station No.2107 following implementation of the scope of work proposed in the Work Plan for Ground-Water Investigation (BAI, 9/2/2008). Exceptions to the scope of work are described in the foregoing text. BAI makes the following conclusions:

- 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 groundwater conditions between wells MW-13A and MW-13B is therefore suspect.
- A review of the First Quarter 2009 ground-water level elevations shows an initial upward vertical hydraulic gradient between paired wells MW-11A and MW-11B, an upward vertical hydraulic gradient between paired wells MW-13A and MW-13B, but a downward vertical hydraulic gradient between paired wells MW-12A and MW-12B.

## 5.2 Recommendations

Based on the information obtained and presented in this report, BAI makes the following recommendations:

- The significant sediment observed in the bottom of well MW-11A after discontinuing development and during the First Quarter 2009 ground-water monitoring and sampling event should be removed.
- One year of quarterly monitoring and sampling should be performed 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.

## 6.0 CLOSURE

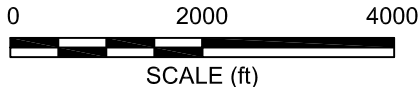
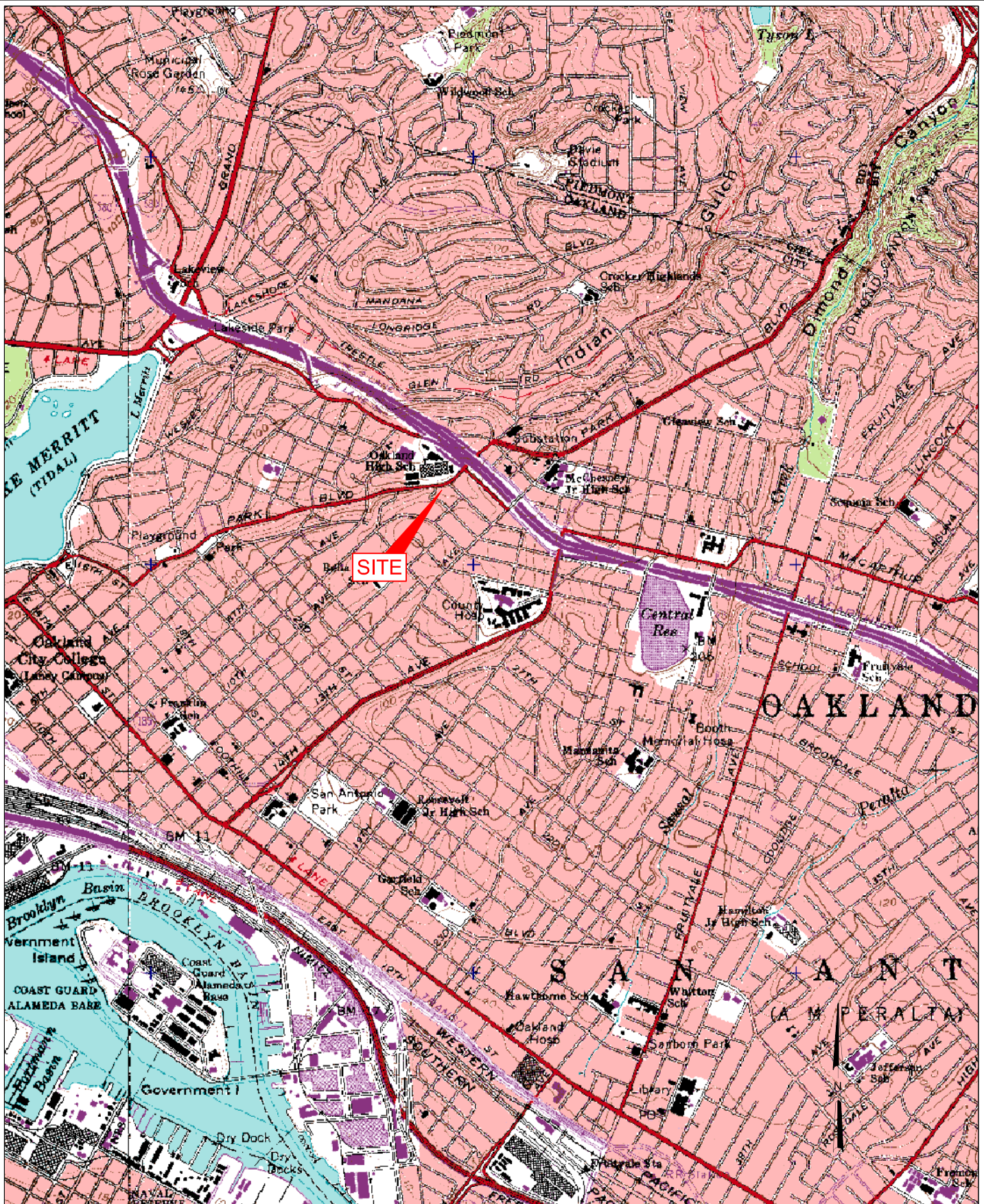
The findings presented in this document are based upon: observation of field personnel from previous consultants, the points investigated, and results of laboratory tests performed by various laboratories. Our services were performed in accordance with the generally accepted standard of practice at the time this document 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.

## 7.0 REFERENCES

Alameda County Environmental Health Services, 17 September 2008. *Fuel Leak Case No. RO0002526 and Geotracker Global ID T06019734306, ARCO #2107, 3310 Park Boulevard, Oakland, CA 94610*. Letter from Mr. Paresh Khatri (ACEH) to Mr. Paul Supple (Atlantic Richfield Company).

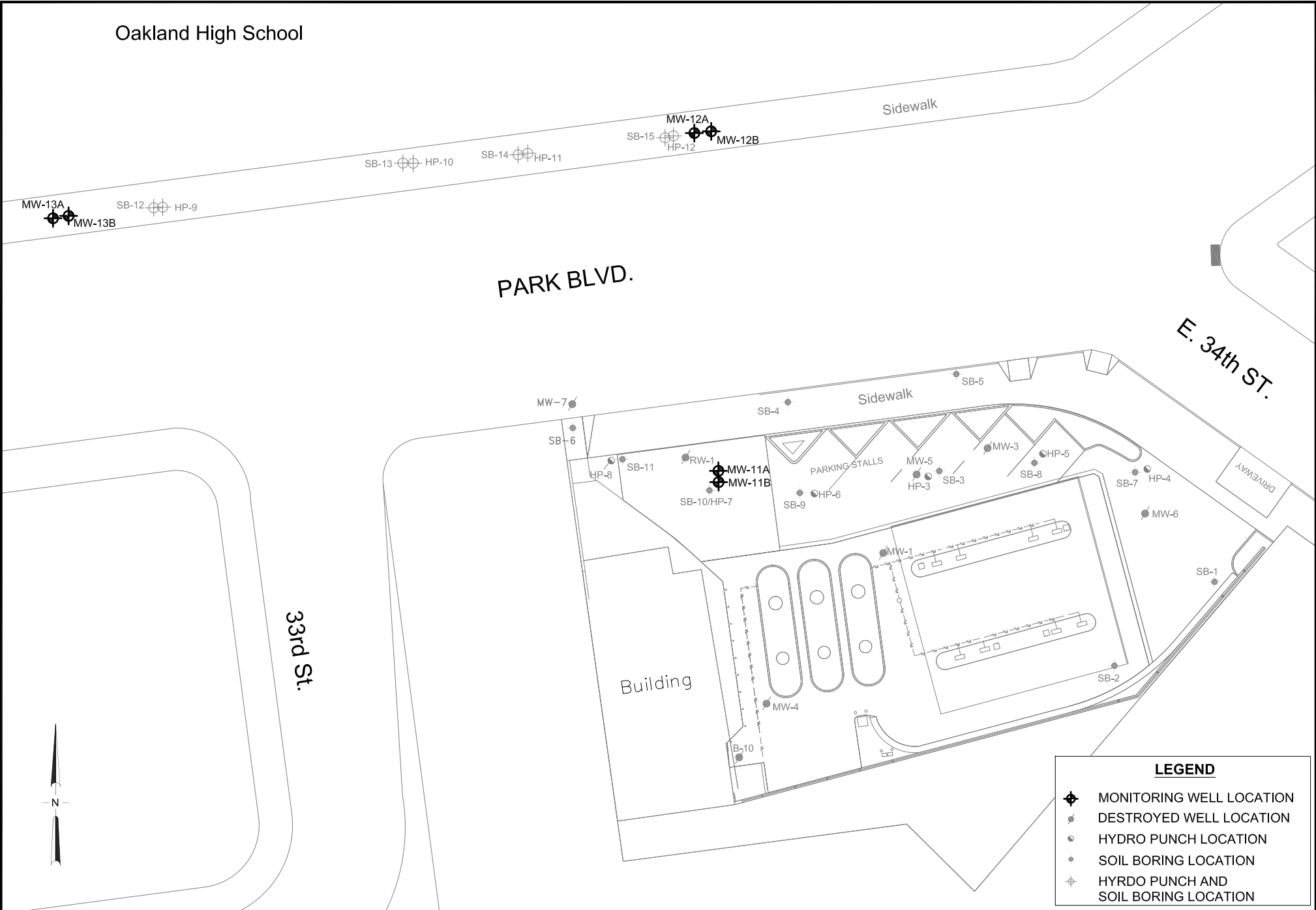
Broadbent & Associates, Inc., 2 September 2008. *Work Plan for Ground-Water Investigation, Atlantic Richfield Company Station No. 2107, 3310 Park Boulevard, Oakland, California*. Prepared for Atlantic Richfield Company.





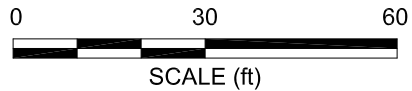


Oakland High School



**LEGEND**

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



**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave. Suite 212, Chico, California  
 Project No.: 06-88-614 Date: 4/22/09

Station #2107  
 3310 Park Boulevard  
 Oakland, California

Site Map with  
 Monitoring Well Locations

Drawing  
**2**

Oakland High School

MW-13A	MW-13B
105.02*	111.79
<50	<50
<0.50	<0.50
13	13
Q	Q

MW-12A	MW-12B
111.94*	105.95
<50	<50
<0.50	<0.50
41	150
Q	Q

MW-11A	MW-11B
108.44*	113.98
1,000	280
1.5	1.3
60	240
Q	Q

**LEGEND**

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

Well	WELL DESIGNATION
ELEV	GROUND-WATER ELEVATION (FT MSL)
GRO	CONCENTRATIONS OF GRO, BENZENE & MTBE IN MICROGRAMS PER LITER (µg/L)
Benzene	
MTBE	
Q	SAMPLING FREQUENCY

- GROUND-WATER FLOW DIRECTION AND GRADIENT (FT/FT)
- 112 GROUND-WATER ELEVATION CONTOUR (FT MSL)
- Q SAMPLED QUARTERLY
- < NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- \* WELL NOT USED TO GENERATE CONTOURS

33rd St.

PARK BLVD.

E. 34th ST.

Building



**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave. Suite 212, Chico, California  
 Project No.: 06-88-614 Date: 4/3/09

Station #2107  
 3310 Park Boulevard  
 Oakland, California

Ground-Water Elevation Contours  
 and Analytical Summary Map  
 9 March 2009

Drawing  
**3**

**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 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-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
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
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
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
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
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

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:

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	--	--	
MW-11B									
3/9/2009	--	<10	240	<0.50	<0.50	3.1	--	--	
MW-12A									
3/9/2009	--	<10	41	<0.50	<0.50	<0.50	--	--	
MW-12B									
3/9/2009	--	<10	150	<0.50	<0.50	<0.50	--	--	
MW-13A									
3/9/2009	--	<10	13	<0.50	<0.50	<0.50	--	--	
MW-13B									
3/9/2009	--	<10	13	<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.

APPENDIX A  
RECENT REGULATORY CORRESPONDENCE



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

September 17, 2008

Paul Supple  
Atlantic Richfield Company  
(A BP Affiliated Company)  
P.O. Box 1257  
San Ramon, CA 94583

Subject: Fuel Leak Case No. RO0002526 and Geotracker Global ID T06019734306, ARCO  
#2107, 3310 Park Boulevard, Oakland, CA 94610

Dear Mr. Supple:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "Work Plan for Ground-water Investigation," dated September 2, 2008, which was prepared by Broadbent & Associates, Inc. (BAI) for the subject site.

ACEH generally concurs with the proposed scope of work and requests that you perform the proposed work and send us the technical reports described below.

#### **NOTIFICATION OF FIELDWORK ACTIVITIES**

Please schedule and complete the fieldwork activities by the date specified below and provide ACEH at least three (3) business days notification prior to conducting fieldwork.

#### **TECHNICAL REPORT REQUEST**

Please submit technical reports to ACEH (Attention: Paresh Khatri), according to the following schedule:

- **October 15, 2008** – Complete fieldwork
- **November 12, 2008** – Soil and Water Investigation Report and Quarterly Monitoring Report (3<sup>rd</sup> Quarter 2008)
- **January 30, 2009** - Quarterly Monitoring Report (4<sup>th</sup> Quarter 2008)
- **April 30, 2009** - Quarterly Monitoring Report (1<sup>st</sup> Quarter 2009)
- **July 30, 2009** - Quarterly Monitoring Report (2<sup>nd</sup> Quarter 2009)

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is in addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.swrcb.ca.gov/ust/electronic\\_submittal/report\\_rqmts.shtml](http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml)).

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

**UNDERGROUND STORAGE TANK CLEANUP FUND**

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

**AGENCY OVERSIGHT**


If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 777-2478 or send me an electronic mail message at [paresh.khatri@acgov.org](mailto:paresh.khatri@acgov.org).

Sincerely,



Paresh C. Khatri  
Hazardous Materials Specialist



Donna L. Drogos, PE  
Supervising Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Tom Venus, Broadbent & Associates, Inc., 1324 Mangrove Ave., Suite 212, Chico, CA 95926  
Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032  
Donna Drogos, ACEH  
Paresh Khatri, ACEH  
File

## APPENDIX B

STRATUS MONITORING WELL INSTALLATION DATA PACKAGE  
(Includes Field Notes, Lithologic Boring and Well Construction Logs, Well Permits,  
Encroachment and Excavation Permits, and Laboratory Analytical Reports with Chain-of-  
Custody Documentation)



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

March 19, 2009

Mr. Tom Venus  
Broadbent & Associates, Inc.  
1324 Mangrove Avenue  
Chico, California 95926

Re: Monitoring Well Installation Data Package, ARCO Service Station No. 2107,  
located at 3310 Park Boulevard, Oakland, California (field activities  
performed on between February 3, 2009 and March 5, 2009)

### **General Information**

*Data Submittal Prepared / Reviewed by:* Collin Fischer / Scott Bittinger  
*Phone Number:* (530) 676-2062

*Date:* February 3, 2009

*On-Site Supplier Representative:* Scott Bittinger

*Scope of Work Performed:* Health and safety meeting. Meet with utility locating subcontractor (Cruz Brothers Locators). Clear 6 boring locations and mark for Underground Service Alert (USA) clearance. Prepare map documenting locations of underground utilities identified by Cruz Brothers Locators representative. Notify service station manager of the scope of work.

*Variations from Work Scope:* None noted

*Unusual Field Conditions:* None noted

*Date:* February 19, 2009

*On-Site Supplier Representative:* Collin Fischer

*Scope of Work Performed:* Health and safety meeting. Check USA markings and update on site map depicting underground utility locations per ground disturbance procedure requirements.

*Variations from Work Scope:* None noted

*Unusual Field Conditions:* None noted

March 19, 2009

*Date:* February 23, 2009

*On-Site Supplier Representative:* Scott Bittinger and Collin Fischer

*Scope of Work Performed:* Health and safety meeting with air knife and drilling subcontractor. Set up traffic control equipment. Air knife 6 boring locations (MW-11A/B, MW-12A/B, and MW-13A/B). Borings MW-11A/B and MW-12A/B were cleared to approximately 5 feet bgs and borings MW-13A/B were cleared to approximately 6 feet bgs. Collect soil samples from boring MW-11B. Begin drilling/installing well MW-11B.

*Variations from Work Scope:* None noted

*Unusual Field Conditions:* The drilling contractor experienced flowing sand conditions during well installation work.

*Date:* February 24, 2009

*On-Site Supplier Representative:* Scott Bittinger and Collin Fischer

*Scope of Work Performed:* Health and safety meeting with drilling subcontractor. Resume and complete installation of well MW-11B. Install well MW-11A. Set up traffic control equipment. Collect soil samples at boring locations MW-12B and MW-13A.

*Variations from Work Scope:* None noted

*Unusual Field Conditions:* While attempting to advance boring MW-12B, the hollow stem augers encountered an unknown hard object in the side of the borehole at approximately 5.5 feet bgs. Due to high water levels in the borehole, Stratus was unable to determine what was causing resistance to the augers. Due to concerns of a possible underground utility at this location, drilling of well MW-12B was temporarily discontinued until additional air knifing could be completed.

*Date:* February 25, 2009

*On-Site Supplier Representative:* Scott Bittinger and Collin Fischer

*Scope of Work Performed:* Health and safety meeting with air knife and drilling subcontractor. Set up traffic control equipment. Drill and install well MW-13B. Extend air knife clearance depths at location MW-12A to 6 feet 4 inches bgs and at location MW-12B to 6 feet 6 inches bgs. Drill and install remaining 3 wells (MW-12A/B and MW-13A).

*Variations from Work Scope:* MW-13A was sampled and drilled to 24 feet bgs. Prior to installing well MW-13A, bentonite was used to partially backfill the borehole. Screen intervals of wells MW-12A/B and MW-13A/B were adjusted slightly from work plan, based on soil types observed in the boreholes, after conversation with scoping contractor.

*Unusual Field Conditions:* None noted



*Date:* March 5, 2009

*On-Site Supplier Representative:* Collin Fischer

*Scope of Work Performed:* Health and safety meeting. Developed wells MW-11A/B, MW-12A/B, and MW13A/B.

*Variations from Work Scope:* Approximately 5 well casing volumes (instead of 10) were evacuated from wells MW-11A, MW-12B, and MW-13A during development, as these wells became dry during development.

*Unusual Field Conditions:* None noted

This submittal presents the tabulation of data collected in association with the installation of six monitoring wells. The attachments include field data sheets, boring logs, well detail diagrams for unlogged boreholes, DWR well completion reports, a drilling permit, three City of Oakland permits and an associated Indenture Agreement, an underground utility location map, a surveyed site plan, a description of standard field procedures for well development, certified analytical results for a soil waste composite sample collected during the investigation, and chain-of-custody documentation for this sample. 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.

March 19, 2009

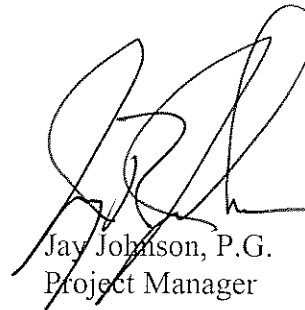
Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,

*STRATUS ENVIRONMENTAL, INC.*



Scott G. Bittinger, P.G.  
Project Geologist



Jay Johnson, P.G.  
Project Manager



**Attachments:**

- Field Data Sheets
- Boring Logs/Well Details
- DWR Well Completion Reports
- Drilling Permit
- City of Oakland Permits
- Underground Utility Location Map
- Surveyed Site Plan
- Standard Field Procedures for Well Development
- Certified Analytical Results
- Chain-of-Custody Documentation

cc: Paul Supple, BP/ARCO

Arco 2107

2-3-09

Onsite 10:00. AASA Check-in w/ station tenant (non-english speaking) regarding work. Leave business card for supervisor.  
Cruz Brothers ~~was~~ onsite at 10:12. Hqs meeting with locating techs.

Per interim ground disturbance procedures, utilities located in entire area surrounding drill hole. Areas marked for USA Clearance.

Speak to manager/owner about the work. Notified him of work schedule (week of Feb. 23rd).

Noticed little pedestrian traffic near high school at this time... good for work practice.

Proposed location Mw-11 A & B are about 3' from a storm drain (7" depth) & 4' from a 1.5"  $\phi$  water line.

Wells Mw-12A/B should be OK relative to utility locations  
Wells Mw-13A/B are marked midway between a street light electric line & storm drain in the best location available. Difficulties of work in this area were discussed w/ Scooper & Arco EBM prior to proceeding with this scope of work. This location should be the best possible for Mw-13A/B, though electric & storm drains are only about 6' apart & wells will be between these two utilities.

Sunny, clear, 60<sup>th</sup>

Off site 11:55

Scott Butts

Stratus Environmental, Inc.

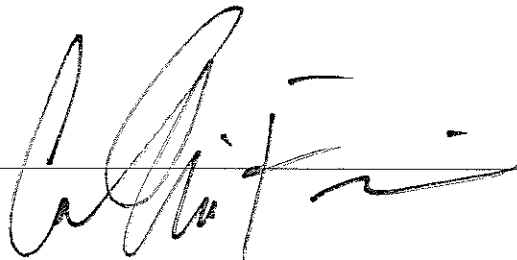
2/19/09

ARCO 2107

1215 → ONSITE, FILL OUT SAFETY PAPERWORK

1230 → CHECK UTILITIES & MARK ON MAP  
UPDATE USA TRACKING SHEET.

1300 → OFFSITE



STRATUS ENV., INC.

Atc 2107

Cloudy, intermittent light rain.

2-23-09

Onsite 5:30 to begin setting up traffic control equipment.  
RSI Drilling onsite 6:30 & Golden from States onsite 6:50.  
H/S meeting. Set up exclusion zones. Begin air knitting onsite  
MW-11 cluster) at 7:45. Begin cutting concrete at MW-12 cluster at 7:45.  
Finish concrete curing at 9:10 (4 spots). Finish onsite air knitting  
(~~at~~ MW-11A+B) at 9:15. Move around equipment. Begin air knitting  
MW-13 cluster, & begin drilling MW-11 cluster, at 10:05. Finish logging MW-13  
at 10:45. Will keep well screen intervals the same as workplan. Finish air knitting  
MW-13A+B to 6' hrs at 11:20. Back up & move air knit rig to MW-12 area.  
Drillers have difficult time setting MW-11 B. Flowing sands push  
casing upward ... need to remove well mechanically & re-drill the same hole.  
Air knitting at MW-12A+B to 5' hrs finished at 13:15.  
All well materials removed from MW-11 B borehole & well not  
completed today. Bridging of bentonite inside the casing around the  
well. Drillers will bring cooled pellets tomorrow instead of chips.  
Backfill 12A, B & 13A, B w/ sand & replace concrete core  
for walking surface. Put a drum over the MW-11A+B Bore,  
with plates & delineators & snow fencing.

Offsite 15:55. Scott Gully, States

A02107

2-24-09

Onsite 05:35. Begin setting up traffic control. RSI onsite 6:05. HHS meeting & finish setting up traffic control. Plates/barricades left across the MW-11 well cluster remain intact. Upon removal of plate covering MW-11 B, groundwater observed at 1.5' bgs. Begin lowering cages into MW-11 B borehole at 6:50. Collin Fischer from HHS onsite 6:50. Begin re-setting well MW-11 B at 7:10. Well sawed 26'-30', sand (#2/12) from 23'-30'. Bedrock below 20'-23'. Great hole, move to MW-11 A at 8:45. Drill well MW-11 A, seen 16'-20', sand 13'-20', bend 10'-13'. Great & set boxes. Move across St. & set up on MW-12 B. Begin probing for lithology at 12:50. Probing goes OK, extending to 28'. While attempting to ream out MW-12 D, cages appear to be hitting the side of a ~~well~~ fairly large diameter metal pipe. However, we are unable to verify due to the presence of groundwater in the hole at 4' bgs (if it is a pipe, it is at about 5.4' bgs. Kickback only cleared hole to 5' bgs due to groundwater). Move probe down to 13B & complete sampling for lithology. Finish MW-13 B ~~at~~ probing at 15:35. Will move back to alternate 12A/12B locations to core concrete for tomorrow's re-air knitting. Collin Fischer offsite 16:00 to go to ship ~~to~~ work composite sample to lab for 48 hr. TAT. RSI having problems w/ concrete curing machine, ~~will~~ decide to end work for today & resume early tomorrow. pack-up equipment & traffic control supplies. Snow fences & delineators left in-place around MW-11 A/B onsite. off-site holes. concrete cores are stuck back into the subgrade to prevent trap hazard.

Offsite 17:25.

Scott Bully

Arco 2107

Cloudy, light rain

2-25-09

Onsite 0535 to set up traffic control equipment.  
RSI arrives at 05:55. H&S meeting. Set up  
on MW-13B and begin drilling at 06:25. RSI air knife crew  
arrives 7:10. H&S meeting with them. Air knife crew exposes area where  
yesterday we thought we might be hitting a pipe at MW-12B location. It appears  
to be no rock, several rods inside of hole.  
Finish sanding & bentoniting well MW-13B, at 08:00 screen 18.5-27.5  
sand 15-22.5, bentonite 12.5-15.  
Barriers MW-12A (6'4") & MW-12B (6'6") were extended using  
air knife for additional safety precaution.  
Mycell boring MW-13A drilled to 24' w/ 8" auger, backfilled  
bentonite from 24'-9', screen 11.5-16.5', sand 9'-19',  
bentonite 6'-9'. Video from ACPWD onsite 11w for great  
inspection of 13A & B. Offsite about 12:00  
Drillers have difficult time installing MW-12B due to flowing sands..  
wash bit about 12:40. Screen 27-30', sand 25'-30', bentonite  
21'-25'. Move to 12A at 14:00. Flowing sands also provide difficulty  
at 12A. Air knife crew offsite 14:45.  
MW-12A screen 13'-18', sanded 11'-18', bentonite 8'-11'.  
Set valves for 12A & B. Cleanup. Locations marked for surveyor.

27 Drums left onsite, 6 are empty for well development water

17:45 Offsite

Scott Brady



Site Address 330 Park Blvd  
 City Oakland, CA  
 Sampled by: CF  
 Signature [Signature]

Site Number = 2107  
 Project Number E2107  
 Project PM Tom JOHNSON  
 DATE 3/5/09

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	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-12A	0945		8.33	17.84	9.51	2"	1.67	15.80	15			✓						
MW-12B	1040		15.10	30.05	14.95	2"	1.67	24.96	12			✓						
MW-13A	1125		3.29	22.10	18.81	2"	1.67	31.41	35			✓						
MW-13B	1155		7.97	15.24	7.27	2"	1.67	12.14	6			✓						
MW-11A	1245		7.49	29.13	21.64	2"	1.67	36.14	35			✓						
MW-11B	1330																	

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

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)

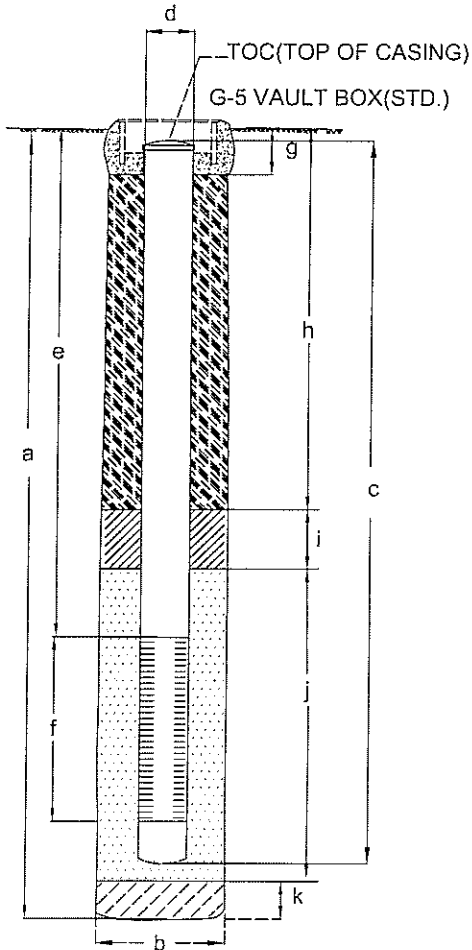
CALIBRATION DATE \_\_\_\_\_  
 pH \_\_\_\_\_  
 Conductivity \_\_\_\_\_  
 DO \_\_\_\_\_








# WELL DETAILS

PROJECT NUMBER: E2107  
 PROJECT NAME: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 WELL PERMIT NO.: W2009-0134

BORING/WELL NO.: MW-11A  
 TOP OF CASING ELEV.: \_\_\_\_\_  
 GROUND SURFACE ELEV.: \_\_\_\_\_  
 DATUM: \_\_\_\_\_  
 INSTALLATION DATE: 2/24/09.



- |   |   |
|---|---|
|  BENTONITE |  CONCRETE    |
|  CEMENT    |  SAND        |
|   |  PERFORATION |

NOT TO SCALE

## EXPLORATORY BORING

a. TOTAL DEPTH 20 ft.  
 b. DIAMETER 8" in.  
 DRILLING METHOD HOLLOWSTEM AUGER

## WELL CONSTRUCTION

c. TOTAL CASING LENGTH 20 ft.  
 MATERIAL SM 40 PUL  
 d. DIAMETER 2 in.  
 e. DEPTH TO TOP PERFORATIONS 16 ft.  
 f. PERFORATED  
 INTERVAL FROM 16 TO 20 ft.  
 PERFORATION TYPE MILLED SLOTS  
 PERFORATION SIZE .010 in.  
 g. SURFACE SEAL 0-0.5 ft.  
 SEAL MATERIAL CONCRETE  
 h. BACKFILL 0.5-10 ft.  
 BACKFILL MATERIAL CEMENT  
 i. SEAL 10-13 ft.  
 SEAL MATERIAL BENTONITE  
 j. FILTER PACK 13-20 ft.  
 FILTER PACK MATERIAL #2/12 SAND  
 k. BOTTOM SEAL N/A ft.  
 SEAL MATERIAL N/A

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

**SOIL BORING LOG**

**Boring No. MW-11B**

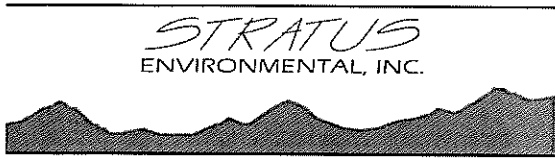
**Sheet: 1 of 2**

Client	Arco 2107	Date	2/23/2009 - 2/24/2009	
Address	3310 Park Boulevard	Drilling Co.	RSI Drilling	rig type: Geoprobe 6620 DT
	Oakland, CA	Driller	Norman	
Project No.	E2107	Method	Hollow Stem Auger	Hole Diameter: 8 inches
Logged By:	Scott Bittinger	Sampler:	Direct Push	
Well Pack	sand: 23 ft. to 30 ft.	Well Construction	Casing Material: Schedule 40 PVC	Screen Interval: 26 ft. to 30 ft.
	bent.: 20 ft. to 23 ft.		Casing Diameter: 2 in.	Screen Slot Size: 0.010-in.
	grout: 0 ft. to 20 ft.	Depth to GW:	▽ first encountered	static ▼

Type	Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
	No.			Time	Recov.					
							1		Cleared to 5' bgs. with air knife	
							2			
							3			
							4			
							5			
							6			
							7	CL	Clay, CL, (6' - 6.5'), dark grayish brown, moist, medium dense	
							8			
							9		Sandy clay, CL, (6.5' - 11.5'), brownish gray, moist 75-90% clay, 10-25% very fine grained sand	
							10			
							11			
							12	CL		
							13		Silty clay, CL, (11.5' - 15.8'), olive brown, moist 10-20% silt, 1-3% very fine grained sand	
							14			
							15			
							16			
							17	SC	Clayey sand, SC, (15.8' - 17'), light gray, damp 60% fine grained sand, 40% clayey fines	
							18	SP-SC	Sand with clay, SP-SC, (17' - 18.5'), light gray, damp 85-90% sand, 10-15% silty clay	
							19			
							20	SC	Clayey sand, SC, (18.5' - 20.5'), light olive brown, damp 60-70% fine grained sand, 30-40% clayey fines	

Recovery \_\_\_\_\_  
Sample \_\_\_\_\_

Comments:



**SOIL BORING LOG**

**Boring No. MW-11B**

**Sheet: 2 of 2**

Client	Arco 2107	Date	2/23/2009 - 2/24/2009	
Address	3310 Park Boulevard	Drilling Co.	RSI Drilling	rig type: Geoprobe 6620 DT
	Oakland, CA	Driller	Norman	
Project No.	E2107	Method	Hollow Stem Auger	Hole Diameter: 8 inches
Logged By:	Scott Bittinger	Sampler:	Direct Push	
Well Pack	sand: 23 ft. to 30 ft	Well Construction	Casing Material: Schedule 40 PVC	Screen Interval: 26 ft. to 30 ft.
	bent.: 20 ft. to 23 ft.		Casing Diameter: 2 in.	Screen Slot Size: 0.010-in.
	grout: 0 ft. to 20 ft.	Depth to GW:	▽ first encountered	static ▼

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
						21	SC	Clayey sand, SC, (20.5' - 21.5'), light gray, damp 60-70% fine grained sand, 30-40% clayey fines	
						22	SC	Clayey sand, SC, (21.5' - 22.5'), light olive brown, damp 60-70% fine grained sand, 30-40% clayey fines	
						23	SP-SC	Sand with clay, SP-SC, (22.5' - 24.5'), dark yellowish brown, damp 85-90% fine grained sand, 10-15% clayey fines	
					24				
						25	SW-SC	Sand with clay and gravel, SW-SC, (24.5' - 30'), dark yellowish brown damp, 75-80% fine grained sand, 10-15% fine gravel, 8-10% clayey fines	
					26				
					27				
					28				
					29				
						30			
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						39			
						40			

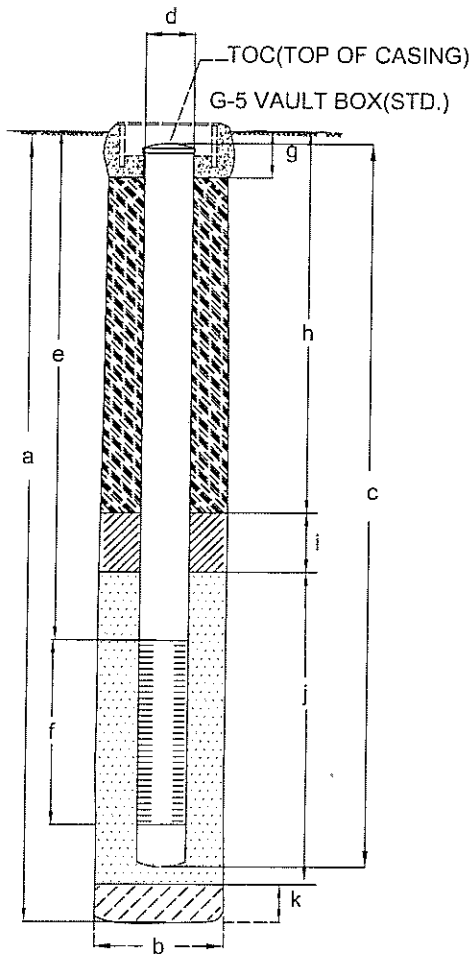
Comments:






*STRATUS*  
ENVIRONMENTAL, INC.

# WELL DETAILS

PROJECT NUMBER: EZ107  
 PROJECT NAME: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 WELL PERMIT NO.: W2009-0136

BORING/WELL NO.: MW-12A  
 TOP OF CASING ELEV.: \_\_\_\_\_  
 GROUND SURFACE ELEV.: \_\_\_\_\_  
 DATUM: \_\_\_\_\_  
 INSTALLATION DATE: 2/25/09



- |   |           |   |             |
|---|-----------|---|-------------|
|  | BENTONITE |  | CONCRETE    |
|  | CEMENT    |  | SAND        |
|   |           |  | PERFORATION |

NOT TO SCALE

## EXPLORATORY BORING

a. TOTAL DEPTH 18 ft.  
 b. DIAMETER 8 in.  
 DRILLING METHOD HOLLOWSTEM AUGER

## WELL CONSTRUCTION

c. TOTAL CASING LENGTH 18 ft.  
 MATERIAL SCH 40 PUC  
 d. DIAMETER 2 in.  
 e. DEPTH TO TOP PERFORATIONS 13 ft.  
 f. PERFORATED  
 INTERVAL FROM 13 TO 18 ft.  
 PERFORATION TYPE MILLED SLOTS  
 PERFORATION SIZE .010 in.  
 g. SURFACE SEAL 0-.5 ft.  
 SEAL MATERIAL CONCRETE  
 h. BACKFILL .5-8 ft.  
 BACKFILL MATERIAL CEMENT  
 i. SEAL 8-11 ft.  
 SEAL MATERIAL BENTONITE  
 j. FILTER PACK 11-18 ft.  
 FILTER PACK MATERIAL #2/2 SAND  
 k. BOTTOM SEAL N/A ft.  
 SEAL MATERIAL N/A

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

**SOIL BORING LOG**

**Boring No. MW-12B**

**Sheet: 1 of 2**

Client	Arco 2107	Date	February 25, 2009
Address	3310 Park Boulevard Oakland, CA	Drilling Co.	RSI Drilling rig type: Geoprobe 6620 DT
Project No.	E2107	Driller	Norman
Logged By:	Scott Bittinger	Method	Hollow Stem Auger Hole Diameter: 8 inches
Well Pack	sand: 25 ft. to 30 ft. bent.: 21 ft. to 25 ft. grout: 0 ft. to 21 ft.	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 27 ft. to 30 ft. Casing Diameter: 2 in. Screen Slot Size: 0.010-in.
		Depth to GW:	▽ first encountered static ▼

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
						1		Cleared to 5' bgs. with air knife	
						2			
						3			
						4			
						5			
						6	CL	Silty clay, CL, (5' - 6.2'), dark grayish brown, moist, stiff	
						7		Sandy clay with silt, SP-SC, (6.2' - 7.2'), dark grayish brown, damp, stiff 55% silt clay, 45% very fine grained sand	
						8	SP-SC		
						9		Sand with clay, SP-SC, (7.2' - 9'), dark yellowish brown, wet, medium dense 5-8% clayey fines	
						10			
						11	CL	Silty clay, CL, (9' - 12'), olive brown, moist, stiff 0-3% fine grained sand	
						12			
						13	SC	Clayey sand, SC, (12' - 13'), dark yellowish brown, damp 60-80% fine grained sand, 20-40% clayey fines	
						14	SP-SC	Sand with clay, SP-SC, (13' - 14.2'), dark yellowish brown, wet 90-92% fine grained sand, 8-10% clayey fines	
						15			
						16			
						17	SW-SC	Sand with clay and gravel, (14.2' - 18'), dark yellowish brown, wet 65-85% fine grained sand, 10-25% fine gravel, 5-10% clayey fines	
						18			
						19	SC	Clayey sand with gravel, SC, (18' - 24'), dark yellowish brown, damp 75% fine to coarse grained sand, 15% clayey fines, 10% fine gravel	
						20			

Recovery \_\_\_\_\_

Sample \_\_\_\_\_

Comments:



**SOIL BORING LOG**

**Boring No. MW-12B**

**Sheet: 2 of 2**

Client	Arco 2107	Date	February 25, 2009
Address	3310 Park Boulevard Oakland, CA	Drilling Co.	RSI Drilling rig type: Geoprobe 6620 DT
Project No.	E2107	Driller	Norman
Logged By:	Scott Bittinger	Method	Hollow Stem Auger Hole Diameter: 8 inches
Well Pack	sand: 25 ft. to 30 ft. bent.: 21 ft. to 25 ft. grout: 0 ft. to 21 ft.	Well Construction	Casing Material: Schedule 40 PVC Screen Interval: 27 ft. to 30 ft. Casing Diameter: 2 in. Screen Slot Size: 0.010-in. Depth to GW: ▽ first encountered static ▼

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
						21	SC	Clayey sand with gravel, SC, (18' - 24'), dark yellowish brown, damp 75% fine to coarse grained sand, 15% clayey fines, 10% fine gravel	
						22			
						23			
						24	CL	Silty clay, CL, (24' - 26.5'), light olive brown, dry to moist, stiff	
						25			
						26	SW-SC	Sand with clay, SW-SC, (26.5' - 30'), light olive brown, damp 80-85% fine to coarse grained sand, 10-15% clayey fines, 5% fine gravel	
						27			
						28			
						29			
						30			
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

Comments:

*STRATUS*  
ENVIRONMENTAL, INC.

MW-12B.xls

**SOIL BORING LOG**

**Boring No. MW-13A**

**Sheet: 1 of 2**

Client	Arco 2107	Date	2/24/2009 - 2/25/2009	
Address	3310 Park Boulevard	Drilling Co.	RSI Drilling	rig type: Geoprobe 6620 DT
	Oakland, CA	Driller	Norman	
Project No.	E2107	Method	Hollow Stem Auger	Hole Diameter: 8 inches
Logged By:	Scott Bittinger	Sampler:	Direct Push	
Well Pack	sand: 9 ft. to 19 ft.	Well Construction	Casing Material: Schedule 40 PVC	Screen Interval: 11.5 ft. to 16.5 ft.
	bent.: 6 ft. to 9 ft.		Casing Diameter: 2 in.	Screen Slot Size: 0.010-in.
	grout: 0 ft. to 6 ft.	Depth to GW:	▽ first encountered	static ▼

Sample Type	Sample No.	Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
			Time	Recov.					
						1		Cleared to 5' bgs. with air knife	
						2			
						3			
						4			
						5			
						6	CL	Silty clay with sand, CL, (5' - 7'), light olive brown, moist, medium stiff 5-15% very fine grained sand	
						7	SC	Clayey sand with silt, SC, (7' - 7.5'), yellowish brown, moist	
						8		80% fine grained sand, 20% silty clay	
						9	CL	Sandy clay with silt, CL, (7.5' - 9.5'), light olive brown, moist 60-70% silty clay, 30-40% fine grained sand	
						10		Silty clay, CL, (9.5' - 10.7'), dark grayish brown, moist, medium stiff	
						11	SC	Clayey sand with silt, SC, (10.7' - 11.6'), grayish brown, moist	
						12		75% fine grained sand, 25% silty clay	
						13			
						14	SP-SC	Sand with silty clay, SP-SC, (11.6' - 15.2'), grayish brown, moist to wet 90-93% fine grained sand, 7-10% silty clay	
						15			
						16	SW-SC	Well graded sand with clay, SW-SC, (15.2' - 15.6'), grayish brown, damp	
						17	SP-SC	85% fine to coarse grained sand, 5-10% clayey fines, 5% fine gravel	
						18	SC	Sand with clay, SP-SC, (15.6' - 16.3'), grayish brown, wet	
						19		93-95% fine grained sand, 5-7% clayey fines	
						20	SW-SC	Clayey sand with silt, SC, (16.3' - 17'), light olive brown, damp	
								65% fine grained sand, 35% silty clay	
								Sand with clay, SW-SC, (17' - 22.5'), light olive brown, damp to wet	
								80-90% fine to coarse grained sand, 5-10% fine gravel, 5-10% clayey fines	

Recovery \_\_\_\_\_

Sample \_\_\_\_\_

Comments:



**SOIL BORING LOG**

**Boring No. MW-13A**

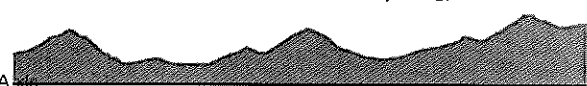
**Sheet: 2 of 2**

Client	Arco 2107	Date	2/24/2009 - 2/25/2009	
Address	3310 Park Boulevard Oakland, CA	Drilling Co.	RSI Drilling	rig type: Geoprobe 6620 DT
Project No.	E2107	Driller	Norman	
Logged By:	Scott Bittinger	Method	Hollow Stem Auger	Hole Diameter: 8 inches
		Sampler:	Direct Push	
Well Pack	sand: 9 ft. to 19 ft. bent.: 6 ft. to 9 ft. grout: 0 ft. to 6 ft.	Well Construction	Casing Material: Schedule 40 PVC	Screen Interval: 11.5 ft. to 16.5 ft.
			Casing Diameter: 2 in.	Screen Slot Size: 0.010-in.
		Depth to GW:	▽ first encountered	static ▼

Sample		Blow Count	Sample		Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
Type	No.		Time	Recov.					
					[Hatched Pattern]	21	SW-SC	Sand with clay, SW-SC, (17' - 22.5'), light olive brown, damp to wet 80-90% fine to coarse grained sand, 5-10% fine gravel, 5-10% clayey fines	
						22			
					[Hatched Pattern]	23	CL	Silty clay, CL, (22.5' - 23.5'), dark yellowish brown, moist stiff Silty clay, CL, (23.5' - 24'), dark grayish brown, moist stiff	
						24			
						25			
						26			
						27			
						28			
						29			
						30			
						31			
						32			
						33			
						34			
						35			
						36			
						37			
						38			
						39			
						40			

Comments: Boring drilled out with augers to 24' bgs. then backfilled with bentonite.

*STRATUS*  
ENVIRONMENTAL, INC.

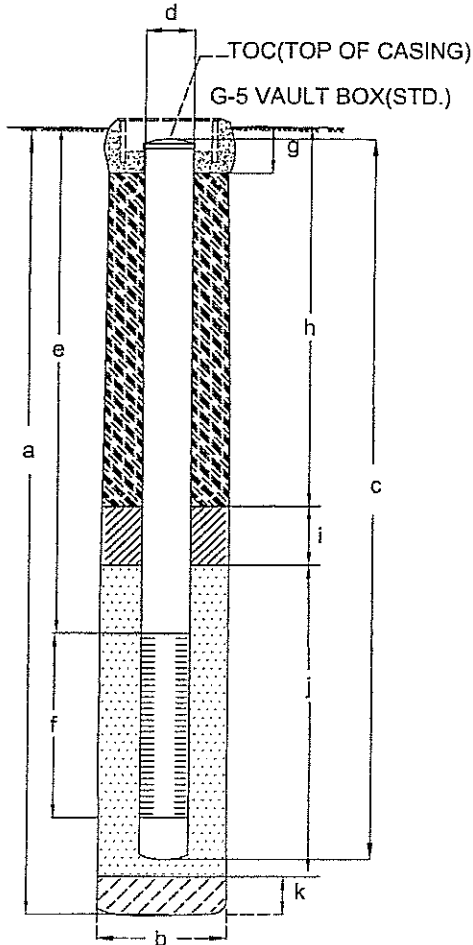









# WELL DETAILS

PROJECT NUMBER: E2107  
 PROJECT NAME: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 WELL PERMIT NO.: W2009-0139

BORING/WELL NO.: MW-13B  
 TOP OF CASING ELEV.: \_\_\_\_\_  
 GROUND SURFACE ELEV.: \_\_\_\_\_  
 DATUM: \_\_\_\_\_  
 INSTALLATION DATE: 2/24/09



- |   |   |
|---|---|
|  BENTONITE |  CONCRETE    |
|  CEMENT    |  SAND        |
|   |  PERFORATION |

NOT TO SCALE

## EXPLORATORY BORING

a. TOTAL DEPTH 22.5 ft.  
 b. DIAMETER 8 in.  
 DRILLING METHOD HOLLOWSTEM AUGER

## WELL CONSTRUCTION

c. TOTAL CASING LENGTH 22.5 ft.  
 MATERIAL SCH 40 PVC  
 d. DIAMETER 2 in.  
 e. DEPTH TO TOP PERFORATIONS 18.5 ft.  
 f. PERFORATED  
 INTERVAL FROM 18.5 TO 22.5 ft.  
 PERFORATION TYPE MULLED SLOTS  
 PERFORATION SIZE .010 in.  
 g. SURFACE SEAL 0-.5 ft.  
 SEAL MATERIAL CONCRETE  
 h. BACKFILL 0-11 ft.  
 BACKFILL MATERIAL CEMENT  
 i. SEAL 11-15 ft.  
 SEAL MATERIAL BENTONITE  
 j. FILTER PACK 15-22.5 ft.  
 FILTER PACK MATERIAL #2/2 SAND  
 k. BOTTOM SEAL N/A ft.  
 SEAL MATERIAL N/A

PREPARED BY \_\_\_\_\_ DATE \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE \_\_\_\_\_

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

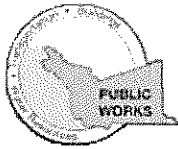
**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

# Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

**Application Approved on: 02/10/2009 By jamesy**

**Permit Numbers: W2009-0134 to W2009-0139**  
**Permits Valid from 02/23/2009 to 02/26/2009**

<b>Application Id:</b>	1233943259020	<b>City of Project Site:</b> Oakland
<b>Site Location:</b>	3310 Park Blvd & adjacent sidewalk, Oakland, CA	
<b>Project Start Date:</b>	02/23/2009	<b>Completion Date:</b> 02/26/2009
<b>Assigned Inspector:</b>	Contact Vicky Hamlin at (510) 670-5443 or vickyh@acpwa.org	
<b>Applicant:</b>	Stratus Environmental - Scott Bittinger 3330 Cameron Park Dr #550, Cameron Park, CA 95682	<b>Phone:</b> 530-676-2062
<b>Property Owner:</b>	Atlantic Ridifield Co. 6 Centerpointe Dr., La Palma, CA 90623	<b>Phone:</b> 925-275-3801
<b>Client:</b>	** same as Property Owner **	

	<b>Total Due:</b>	\$2070.00
<b>Receipt Number: WR2009-0054</b>	<b>Total Amount Paid:</b>	\$2070.00
<b>Payer Name : Stratus</b>	<b>Paid By: CHECK</b>	<b>PAID IN FULL</b>

**Works Requesting Permits:**

Well Construction-Monitoring-Monitoring - 6 Wells  
Driller: RSI - Lic #: 802334 - Method: auger

**Work Total: \$2070.00**

**Specifications**

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2009-0134	02/10/2009	05/24/2009	MW-11A	8.00 in.	2.00 in.	10.00 ft	20.00 ft
W2009-0135	02/10/2009	05/24/2009	MW-11B	8.00 in.	2.00 in.	20.00 ft	30.00 ft
W2009-0136	02/10/2009	05/24/2009	MW-12A	8.00 in.	2.00 in.	10.00 ft	20.00 ft
W2009-0137	02/10/2009	05/24/2009	MW-12B	8.00 in.	2.00 in.	20.00 ft	30.00 ft
W2009-0138	02/10/2009	05/24/2009	MW-13A	8.00 in.	2.00 in.	10.00 ft	20.00 ft
W2009-0139	02/10/2009	05/24/2009	MW-13B	8.00 in.	2.00 in.	20.00 ft	30.00 ft

**Specific Work Permit Conditions**

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
  
2. Permitte, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
  
3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits



## Alameda County Public Works Agency - Water Resources Well Permit

and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

4. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Including permit number and site map.
  5. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.
  6. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
  7. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.
  8. Minimum surface seal thickness is two inches of cement grout placed by tremie
  9. Minimum seal (Neat Cement seal) depth for monitoring wells is 5 feet below ground surface(BGS) or the maximum depth practicable or 20 feet.
  10. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
-

Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# ENMI08232      Job Site 3310 PARK BL      Parcel# 023 -0394-002-01

Descr Allow monitoring four monitoring wells on Park Bl between      Filed 11/17/08  
E 33rd & E 34th Streets

Insurance Required? YES      Carrier      Expires

Owner BP WEST COAST PRODUCTS LLC      Applc# X      Phone# (530) 676-2062      Lic# --License Classes--

Contractor

Arch/Engr STRATUS ENVIRONMENTAL INC

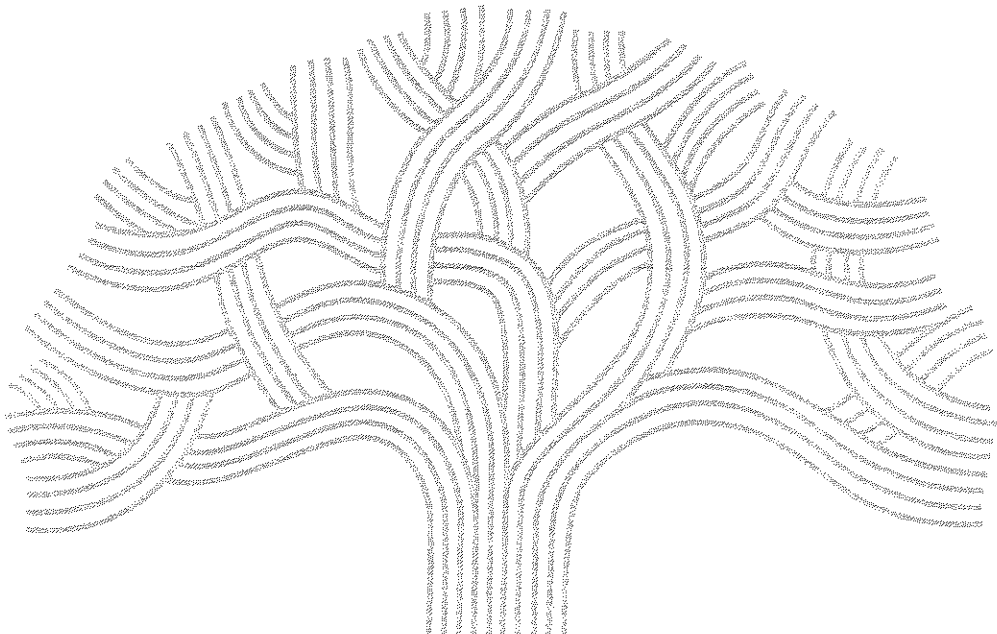
Agent SCOTT G. BITTINGER, P.G.      (530) 676-2062

**JOB SITE**

Applic Addr 3330 CAMERON PARK DRIVE, CAMERON PARK, CA, 95682

\$1,014.39 TOTAL FEES PAID AT FILING	\$ .00 TOTAL FEES PAID AT ISSUANCE
\$66.00 Applic	\$ .00 Permit
\$818.00 Process	\$83.98 Rec Mgmt
\$ .00 Gen Plan	\$ .00 Invstg
\$ .00 Other	\$46.41 Tech Enh

DIST: ADDRESS:



CITY OF OAKLAND

NO FEE DOCUMENT PURSUANT  
TO GOVERNMENT CODE SECTION 27383

Recording requested by:

**CITY OF OAKLAND**

When recorded mail to:

City of Oakland  
CEDA - Building Services  
Dalziel Administration Building  
250 Frank H. Ogawa Plaza -  
2nd Floor  
Oakland, CA 94612  
Attn: City Engineer

*Handwritten note:*  
1/16/09 [initials]

----- space above for Recorder's use only -----

### INDENTURE AGREEMENT

Address 3310 Park Boulevard

permit no. ENMI 08232

parcel no. 023 -0394-002-01

authorities Municipal Code Section 12.08.080

description Encroach onto Park Boulevard with four monitoring wells

#### RECITAL

The owner subscribed below of fee simple interest in the property referenced above and described in Exhibit B attached hereto, is hereby granted, for an indeterminate period of time, the revocable permit referenced above allowing the temporary encroachment described above and delineated in Exhibit C, attached hereto, and limiting the use, exercise, and operation of the encroachment with the requirements and restrictions set forth in Exhibit A, attached hereto, and the associated permit. The owner agrees by and between themselves to be bound by the general and special conditions in Exhibit A and to comply with these conditions faithfully and fully at all times. The conditions of this agreement and associated permit shall equally bind all agents, heirs, successors, and assigns of the owner.

#### ACKNOWLEDGEMENT OF PROPERTY OWNER

(notarization of signature required)

Atlantic Richfield Company (ARCO)

Signature [Handwritten Signature]

Date 1/16/09

Print name Jay R. Johnson

Title Project Manager

#### ATTACHMENTS

Exhibit A - Conditions of encroachment

Exhibit C - Limits of encroachment

Exhibit B - Description of privately owned parcel

<p><b>CITY OF OAKLAND</b> a municipal corporation</p>	<p><i>[Signature]</i> by</p>	<p>_____ date _____</p>
<p><b>DAN LINDHEIM</b> Acting City Administrator</p>	<p><b>RAYMOND M. DERANIA</b> Interim City Engineer Community and Economic Development Agency</p>	

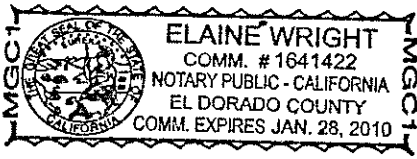
**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**

State of California

County of El Dorado }

on Jan 16, 2009 before me, Elaine Wright, Notary Public

personally appeared Jay R. Johnson



who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Elaine Wright

Place Notary Seal Above

**OPTIONAL**

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

**Description of Attached Document**

Title or Type of Document: Indenture Agreement

Document Date: 1/16/09 Number of Pages: 7

Signer(s) Other Than Named Above: Raymond M. Berania

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: Jay R. Johnson

- Individual
- Corporate Officer — Title(s): \_\_\_\_\_
- Partner —  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_

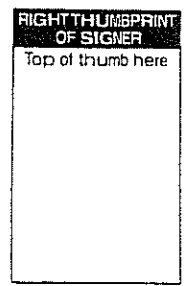
Signer Is Representing: \_\_\_\_\_



Signer's Name: \_\_\_\_\_

- Individual
- Corporate Officer — Title(s): \_\_\_\_\_
- Partner —  Limited  General
- Attorney in Fact
- Trustee
- Guardian or Conservator
- Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_



## EXHIBIT A

### Conditions For An Encroachment In The Public Right-Of-Way

address 3310 Park Boulevard

parcel no. 023 -0394-002-01

permittee Atlantic Richfield Company (ARCO)

permit no. ENMI 08232

• **General conditions of the encroachment**

1. This agreement may be voided and the associated permit for an encroachment may be revoked at any time and for any reason, at the sole discretion of the City Administrator or his or her designee, or the associated permit may be suspended at any time, at the sole discretion of the City Engineer, upon failure of the permittee to comply fully and continuously with each and all of the general and special conditions set forth herein and in the associated permit.
2. The property owner and permittee hereby disclaim any right, title, or interest in or to any portion of the public right-of-way, including the sidewalk and street, and agree that the encroachment is granted for indeterminate period of time and that the use and occupancy by the permittee of the public right-of-way is temporary and does not constitute an abandonment, whether expressed or implied, by the City of Oakland of any of its rights associated with the statutory and customary purpose and use of and operations in the public right-of-way.
3. The permittee agrees to indemnify and save harmless the City of Oakland, its officers, agents, employees, and volunteers, and each of them, from any suits, claims, or actions brought by any person or persons, corporations, or other entities for on account of any bodily injury, disease, or illness, including death, damage to property, real or personal, or damages of any nature, however caused, and regardless of responsibility for negligence, arising in any manner out of the construction of or installation of a private improvement itself or sustained as result of its construction or installation or resulting from the permittees' failure to maintain, repair, remove and/or reconstruct the private improvement.
4. The permittee shall maintain fully in force and effect at all times that the encroachment occupies the public right-of-way good and sufficient public liability insurance in a face amount not less than \$300,000.00 for each occurrence, and property damage insurance in a face amount not less than \$50,000.00 for each occurrence, both including contractual liability, insuring the City of Oakland, its officers, agents, employees, and volunteers against any and all claims arising out of the existence of the encroachment in the public right-of-way, as respects liabilities assume under this permit, and that a certificate of such insurance and subsequent notices of the renewal thereof, shall be filed with the City Engineer of the City of Oakland, and that such certificate shall state that the insurance coverage shall not be canceled or be permitted to lapse without thirty calendar (30) days written notice to the City Engineer. The permittee also agree that the City of Oakland may review the type and amount of insurance required of the permittee annually and may require the permittee to increase the amount of and/or change the type of insurance coverage required.
5. The permittee shall be solely and fully liable and responsible for the repair, replacement, removal, reconstruction, and maintenance of any portion or all of the private improvements constructed or installed in the public right-of-way, whether by the cause, neglect, or negligence of the permittee or others and for the associated costs and expenses necessary to restore or remove the encroachment to the satisfaction of the City Engineer and shall not allow the encroachment to become a blight or a menace or a hazard to the health and safety of the general public.

6. The permittee acknowledge and agree that the encroachment is out of the ordinary and does not comply with City of Oakland standard installations. The permittee further acknowledge and agree that the City of Oakland and public utility agencies will periodically conduct work in the public right-of-way, including excavation, trenching, and relocation of its facilities, all of which may damage the encroachment. Permittee further acknowledge and agree that the City and public utility agencies take no responsibility for repair or replacement of the encroachment which may be damaged by the City or its contractors or public utility agencies or their contractors. Permittee further acknowledge and agree that upon notification by and to the satisfaction of the City Engineer, permittee shall immediately repair, replace, or remove, at the sole expense of the permittee, all damages to the encroachment that are directly or indirectly attributable to work by the City or its contractors or public utility agencies or their contractors.
  7. Permittee shall remain liable for and shall immediately reimburse the City of Oakland for all costs, fee assessments, penalties, and accruing interest associated with the City's notification and subsequent abatement action for required maintenance, repairs, or removal, whether in whole or in part, of the encroachment or of damaged City infrastructure made necessary by the failure, whether direct or indirect, of the permittee to monitor the encroachment effectively and accomplish preventative, remedial, or restorative work expeditiously. The City reserves the unqualified right to collect all monies unpaid through any combination of available statutory remedies, including recordation of Prospective Liens and Priority Liens/ Special Assessments with the Alameda County Recorder, inclusion of non-reimbursed amounts by the Alameda County Assessor with the annual assessment of the general levy, and awards of judgments by a court of competent jurisdiction.
  8. Upon revocation of the encroachment permit, permittee shall immediately, completely, and permanently remove the encroachment from the public right-of-way and restore the public right-of-way to its original conditions existing before the construction or installation of the encroachment, to the satisfaction of the City Engineer and all at the sole expense of the permittee.
  9. This agreement and the associated permit for an encroachment shall become effective upon filing of this agreement with the Alameda County Recorder for recordation as an encumbrance of the property and its title.
- **Special conditions of the encroachment**
10. That said permittee shall obtain excavation permit(s) prior to construction and separate excavation permit(s) prior to the removal of the monitoring well.
  11. That said permittee shall provide to the City of Oakland an AS BUILT plan showing the actual location of the monitoring well. And the results of all data collected from the monitoring well.
  12. That said permittee shall remove the monitoring well and repair any damage to the street area in accordance with City standards two (2) years after construction or as soon as monitoring is complete.
  13. That said permittee shall notify the Community & Economic Development Agency, Building Services Division after the monitoring well is removed and the street area restored to initiate the procedure to rescind the minor encroachment permit.
  14. That the monitoring well cover installed within the sidewalk area shall have a skid-proof surface.

15. That the monitoring well casing and cover shall be iron and shall meet H-20 load rating. The cover shall be secured with a minimum of two stainless steel bolts. Bolts and cover shall be mounted flush with the surrounding surface. For sidewalk installations, a pre-cast concrete utility box and non-skid cover may be needed in conjunction with the bolted cast iron cover with City approval.
16. That said permittee acknowledges that the City makes no representations or warranties as to the conditions beneath said encroachment. By accepting this revocable permit, permittee agrees that it will use the encroachment area at its own risk, is responsible for the proper coordination of its activities with all other permittee, underground utilities, contractors, or workmen operating, within the encroachment area and for the safety of itself and any of its personnel in connection with its entry under this revocable permit.
17. That said permittee acknowledges that the City is unaware of the existence of any hazardous substances beneath the encroachment area, and permittee hereby waives and fully releases and forever discharges the City and its officers, directors, employees, agents, servants, representatives, assigns and successors from any and all claims, demands, liabilities, damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs), whether direct or indirect, known or unknown, foreseen or unforeseen, that may arise out of or in any way connected with the physical condition or required remediation of the excavation area of any law or regulation applicable thereto, including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. Sections 9601 et seq.), the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 466 et seq.), the Safe Drinking Water Act (14 U.S.C. Sections 1401, 1450), the Hazardous Waste Control Law (California Health and Safety Code Sections 25100 et seq.), the Porter-Cologne Water Quality Control Act (California Health and Safety Code Section 13000 et seq.), the Hazardous Substance Account Act (California Health and Safety Code Sections 253000 et seq.), and the Safe Drinking Water and Toxic Enforcement Act (California Health and Safety Code Section 25249.5 et seq.).
18. That said permittee further acknowledges that it understands and agrees that it hereby expressly waives all rights and benefits which it now has or in the future may have, under and by virtue of the terms of California Civil Code Section 1542, which reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."
19. That said permittee recognizes that by waiving the provisions of this section, permittee will not be able to make any claims for damages that may exist, and to which, if known, would materially affect its decision to agree to these encroachment terms and conditions, regardless of whether permittee's lack of knowledge is the result of ignorance, oversight, error, negligence, or any other cause.
20. (a) That said permittee, by the acceptance of this revocable permit, agrees and promises to indemnify, defend, and hold harmless the City of Oakland, its officers, agents, and employees, to the maximum extent permitted by law, from any and all claims, demands, liabilities damages, actions, causes of action, penalties, fines, liens, judgments, costs, or expenses whatsoever (including, without limitation, attorneys' fees and costs; collectively referred to as "claims", whether direct or indirect, known or unknown, foreseen or unforeseen, to the extent that such claims were either (1) caused by the permittee, its agents, employees, contractors or representatives, or, (2) in the case of environmental contamination, the claim is a result of environmental contamination that emanates or emanated from 3310 Park Boulevard, Oakland, California site, or was otherwise caused by the permittee, its agents,

employees, contractors or representatives.

(b) That, if any contamination is discovered below or in the immediate vicinity of the encroachment, and the contaminants found are of the type used, housed, stored, processed or sold on or from 3310 Park Boulevard, Oakland, California site, such shall amount to a rebuttable presumption that the contamination below, or in the immediate vicinity of, the encroachment was caused by the permittee, its agents, employees, contractors or representatives.

(c) That said permittee shall comply with all applicable federal, state, county and local laws, rules, and regulations governing the installation, maintenance, operation and abatement of the encroachment.

21. That said Minor Encroachment Permit and Agreement shall take effect when all the conditions hereinabove set forth shall have been complied with to the satisfaction of the City Engineer, and shall become null and void upon the failure of the permittee to comply with all conditions.
22. The City, at its sole discretion and at future date not yet determined, may impose additional and continuing fees as prescribed in the Master Fee Schedule for use and occupancy of the public right-of-way.



# EXHIBIT B

## Description of the Private Property Abutting the Encroachment

address 3310 Park Boulevard

parcel no. 023 -0394-002-01

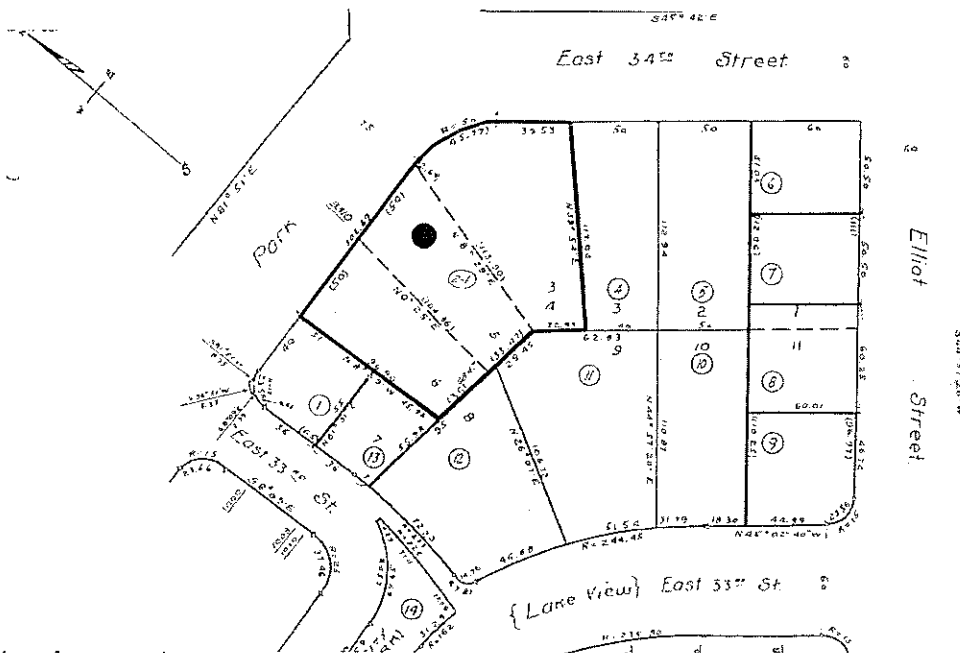
deed no. 2002589264

recorded December 16, 2002

REAL PROPERTY IN THE CITY OF OAKLAND, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOTS 4, 5 AND 6, AS SHOWN ON THE MAP OF ARDSLEY HEIGHTS, FILED SEPTEMBER 5, 1912, IN BOOK 27 OF MAPS, PAGE 13, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWESTERN CORNER OF SAID LOT 6; RUNNING THENCE NORTH  $81^{\circ} 51'$  EAST, ALONG THE NORTHERN LINE OF SAID LOTS 6 AND 5, 100 FEET TO THE NORTHWESTERN CORNER OF SAID LOT 4; THENCE ALONG THE EXTERIOR BOUNDARY LINE OF SAID LOT 4, NORTH  $81^{\circ} 51'$  EAST, 2.69 FEET; EASTERLY ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 50 FEET, AN ARC LENGTH OF 45.77 FEET; SOUTH  $45^{\circ} 42'$  EAST, 39.53 FEET; SOUTH  $39^{\circ} 54'$  WEST, 113.94 FEET; NORTH  $46^{\circ} 42'$  WEST, 22.93 FEET TO THE SOUTHWESTERN CORNER OF SAID LOT 4; THENCE NORTH  $87^{\circ} 54'$  WEST, 68.47 FEET, ALONG THE SOUTHERN LINE OF SAID LOTS 5 AND 6 TO THE SOUTHWESTERN CORNER OF SAID LOT 6; THENCE NORTH  $8^{\circ} 09'$  WEST, ALONG THE WESTERN LINE OF SAID LOT 6, 96.96 FEET TO THE POINT OF BEGINNING.



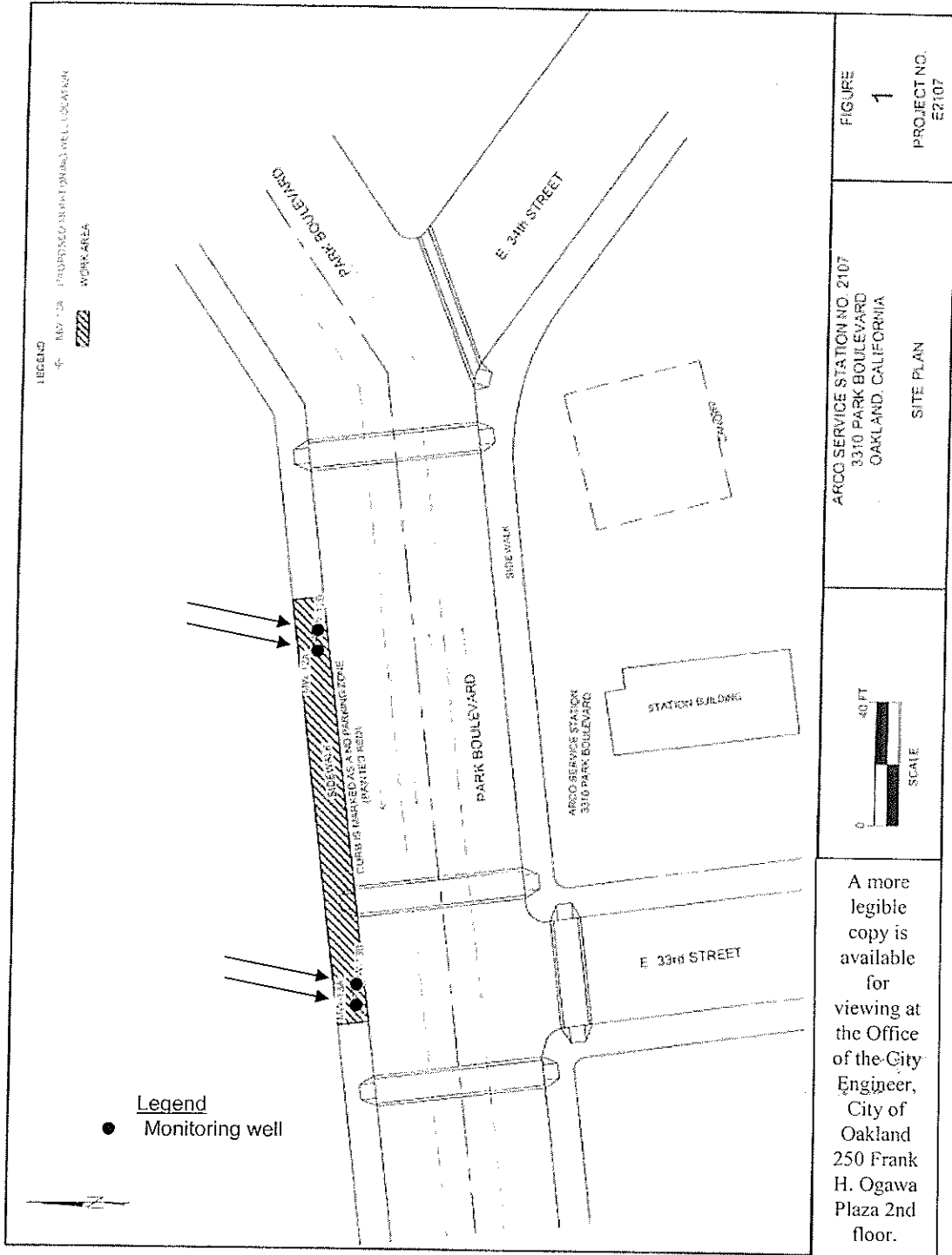
A more legible copy is available for viewing at the Office of the City Engineer, City of Oakland 250 Frank H. Ogawa Plaza 2nd floor.

# EXHIBIT C

## Limits Of The Encroachment In The Public Right-Of-Way

address 3310 Park Boulevard

parcel no. 023 -0394-002-01



Applications for which no permit is issued within 180 days shall expire by limitation. No refund after 180 days when expired.

Appl# X0900149      Job Site 3310 PARK BL      Parcel# 023 -0394-002-01

Descr Allow four (4) monitoring wells on Park Bl between      Permit Issued 02/03/09  
E 33rd & E 34th Streets on Oakland High School side of Park

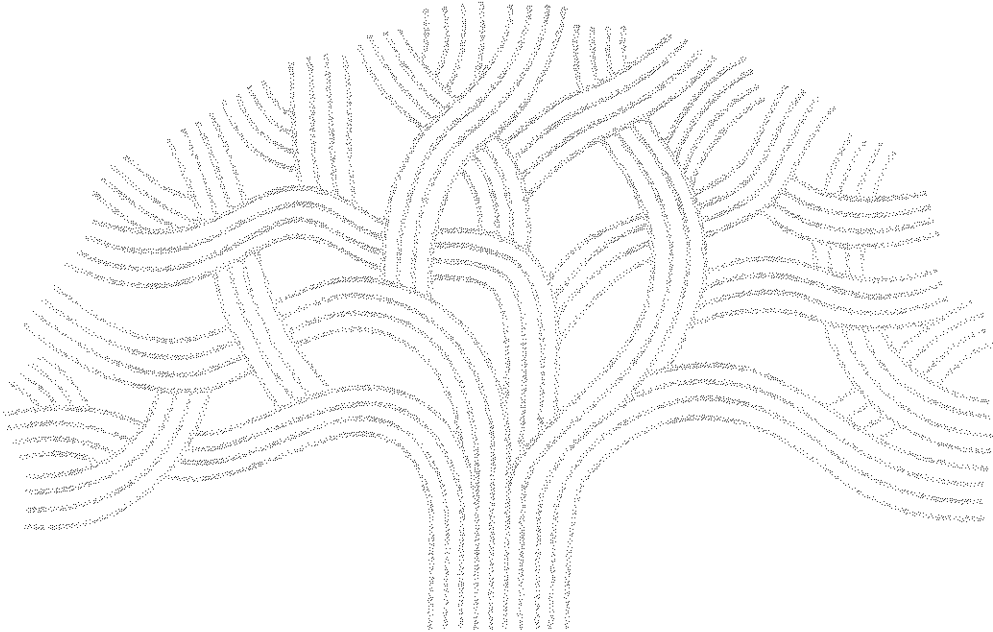
Work Type EXCAVATION-PRIVATE P

USA #      Util Co. Job #      Acctg#:  
Util Fund #:

	Applcmt	Phone#	Lic#	--License Classes--
Owner BP WEST COAST PRODUCTS LLC				
Contractor RESONANTSONIC	X	(530) 668-2424	802334	C57 A
Arch/Engr STRATUS ENVIRONMENTAL INC				
Agent SCOTT G. BITTINGER, P.G.		(530) 676-2062		
applic Addr 3330 CAMERON PARK DRIVE, CAMERON PARK, CA, 95682				

\$419.99 TOTAL FEES PAID AT ISSUANCE	
\$66.00 Applic	\$300.00 Permit
\$.00 Process	\$34.77 Rec Mgmt
\$.00 Gen Plan	\$.00 Invstg
\$.00 Other	\$19.22 Tech Enh

**JOB SITE**



CITY OF OAKLAND

PAID

DIST: ADDRESS:



# EXCAVATION PERMIT

## TO EXCAVATE IN STREETS OR OTHER SPECIFIED WORK

CIVIL  
ENGINEERING

PAGE 2 of 2

Permit valid for 90 days from date of issuance.

PERMIT NUMBER <b>X0900149</b>		SITE ADDRESS/LOCATION <b>* Park Blvd, Between 33rd &amp; 34th St.</b>
APPROX. START DATE <b>late February</b>	APPROX. END DATE <b>late February</b>	24-HOUR EMERGENCY PHONE NUMBER (Permit not valid without 24-Hour number) <b>530-642-0874</b>
CONTRACTOR'S LICENSE # AND CLASS <b>802334</b>		CITY BUSINESS TAX #

**ATTENTION:**

- 1- State law requires that the contractor/owner call Underground Service Alert (USA) two working days before excavating. This permit is not valid unless applicant has secured an inquiry identification number issued by USA. The USA telephone number is 1-800-642-2444. Underground Service Alert (USA) # \_\_\_\_\_
- 2- 48 hours prior to starting work, you **MUST CALL (510) 238-3651** to schedule an inspection.
- 3- 48 hours prior to re-paving, a compaction certificate is required (waived for approved slurry backfill).

**OWNER/BUILDER**

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5 Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the requested exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500):

I, as an owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale).

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereto, (2) the work will be performed prior to sale, (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption on this subdivision on more than two returns more than once during any three-year period. (Sec. 7044 Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project, (Sec. 7044, Business and Professions Code: The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License law).

I am exempt under Sec. \_\_\_\_\_, B&PC for this reason \_\_\_\_\_

**WORKER'S COMPENSATION**

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Worker's Compensation Insurance, or a certified copy thereof (Sec. 3700, Labor Code).

Policy # \_\_\_\_\_ Company Name \_\_\_\_\_

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation Laws of California (not required for work valued at one hundred dollars (\$100) or less).

**NOTICE TO APPLICANT:** If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked. This permit is issued pursuant to all provisions of Title 12 Chapter 12.12 of the Oakland Municipal Code. It is issued upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims, or actions brought by any person for or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance. This permit is void 90 days from the date of issuance unless an extension is granted by the Director of the Office of Planning and Building.

I hereby affirm that I am licensed under provisions of Chapter 9 of Division 3 of the Business and Professions Code and my license is in full force and effect (if contractor), that I have read this permit and agree to its requirements, and that the above information is true and correct under penalty of law.

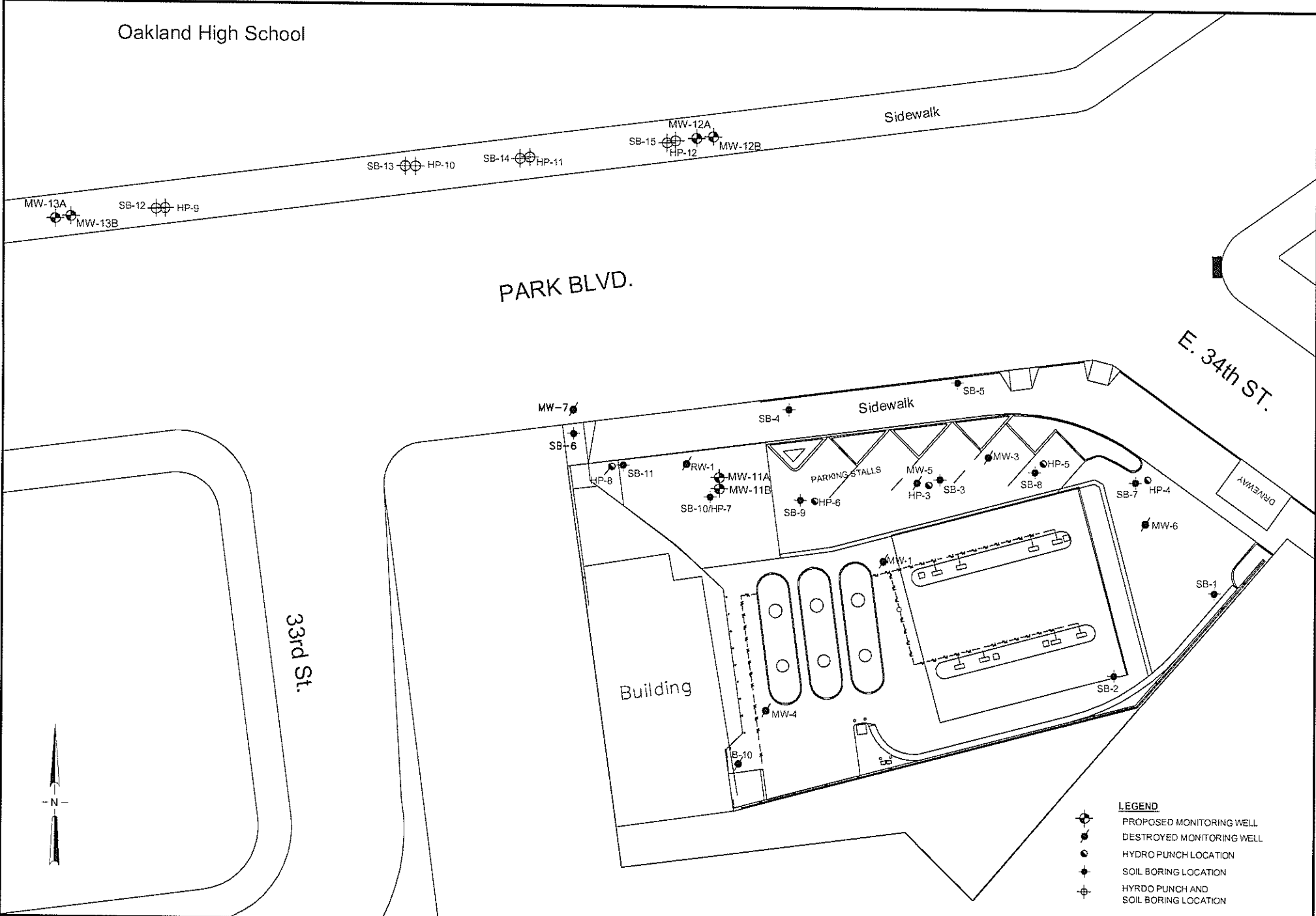
*Scott Buttz*

**2-3-09**

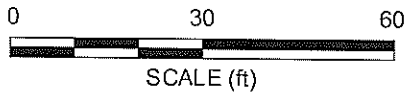
Signature of Permittee		<input checked="" type="checkbox"/> Agent for <input checked="" type="checkbox"/> Contractor <input type="checkbox"/> Owner	Date
STREET LAST	SPECIAL PAVING DETAIL	HOLIDAY RESTRICTION?	LIMITED OPERATION AREA?
UNPAVED	REQUIRED? <input type="checkbox"/> YES <input type="checkbox"/> NO	(NOV 1 - JAN 1) <input type="checkbox"/> YES <input type="checkbox"/> NO	(7AM-9AM & 4PM-6PM) <input type="checkbox"/> YES <input type="checkbox"/> NO
ISSUED BY		DATE ISSUED	
<i>[Signature]</i>		<i>[Signature]</i>	



Oakland High School



- LEGEND**
- ⊕ PROPOSED MONITORING WELL
  - ⊖ DESTROYED MONITORING WELL
  - HYDRO PUNCH LOCATION
  - ⊙ SOIL BORING LOCATION
  - ⊕ HYDRO PUNCH AND SOIL BORING LOCATION



**BROADBENT & ASSOCIATES, INC.**  
 ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
 1324 Mangrove Ave. Suite 212, Chico, California  
 Project No.: 06-08-614 Date: 8/25/08

Station #2107  
 3310 Park Boulevard  
 Oakland, California

Site Map with Proposed  
 Monitoring Well Locations

Drawing

2

Oakland High School

SS

SB-15/HP-12

Sidewalk

SD

SB-13/HP-10

SB-14/HP-11

MW-12A

MW-12B

SB-12/HP-9

MW-13A

MW-13B

16" gas line

115 KV electric structure

gas

PARK BLVD.

1.5" water

Drain outlet - 7" deep

MW-7

SB-6

Storm drain

DI

24" deep

SB-4

SB-5

PARKING STALLS

MW-5

MW-3

HP-5

HP-8

SB-7

RW-1

MW-1A

MW-1B

SB-9

HP-6

HP-3

SB-3

SB-8

SB-7

HP-4

MW-6

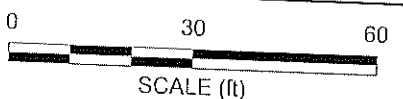
33rd St.

Building

MW-4

SB-1

SB-2



**BROADBENT & ASSOCIATES, INC.**  
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL  
1324 Mangrove Ave., Suite 212, Chico, California  
Project No.: 06-08-614 Date: 8/25/09

Station #2107  
3310 Park Boulevard  
Oakland, California

Site Map with Proposed  
Monitoring Well Locations

- LEGEND**
- PROPOSED MONITORING WELL
  - DESTROYED MONITORING WELL
  - HYDRO PUNCH LOCATION
  - SOIL BORING LOCATION
  - HYDRO PUNCH AND SOIL BORING LOCATION

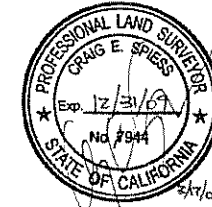
# MONITORING WELL EXHIBIT

PREPARED FOR

## STRATUS ENVIRONMENTAL

ARCO STATION # 2107 AT 3310 PARK BLVD.

CITY OF OAKLAND COUNTY OF ALAMEDA, CALIFORNIA



Oakland High School

### PARK BLVD.

### E. 34th ST.

### 33rd St.



0 30 60  
SCALE: 1"=30'

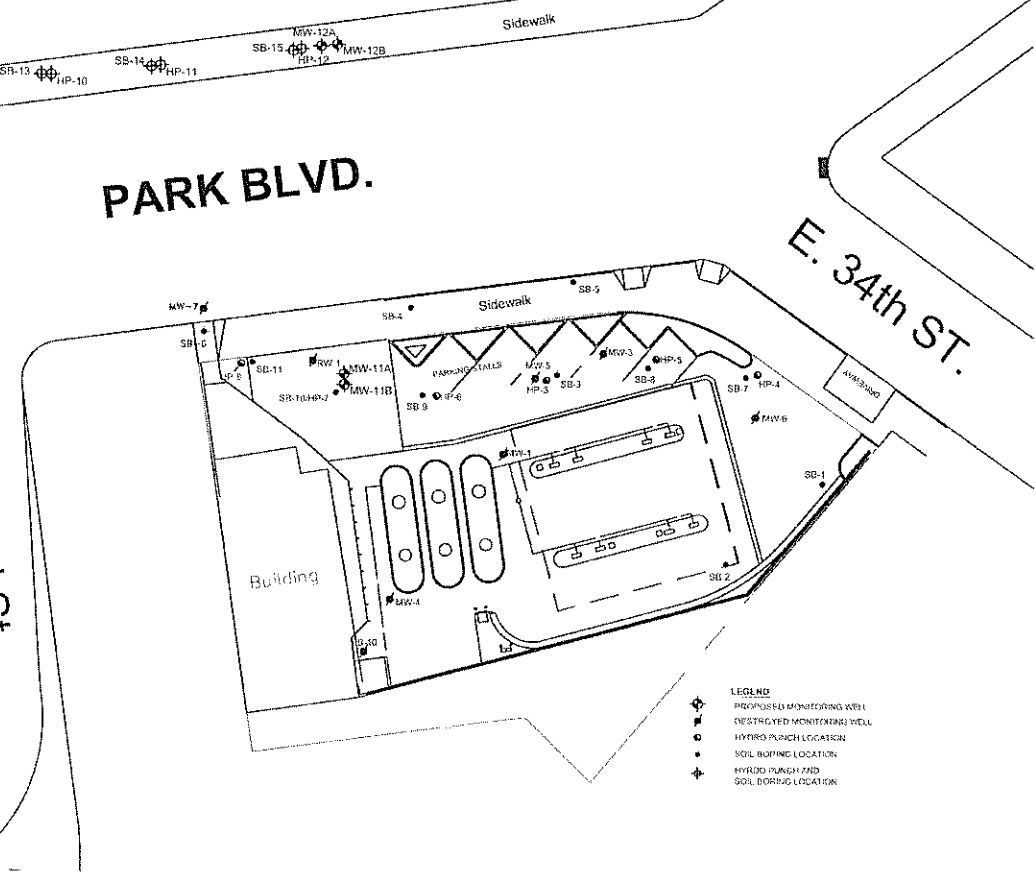


**WOOD RODGERS**  
ENGINEERING • MAPPING • PLANNING • SURVEYING

3301 C St., Bldg. 100-B Tel 916.341.7760  
Sacramento, CA 95816 Fax 916.341.7767

MARCH 16, 2009

Sheet 1 of 1 2479.012



- LEGEND
- PROPOSED MONITORING WELL
  - EXISTING MONITORING WELL
  - HYDRO PUNCH LOCATION
  - SOIL BORING LOCATION
  - HYDRO PUNCH AND SOIL BORING LOCATION



# ATTACHMENT

## FIELD PROCEDURES FOR WELL DEVELOPMENT

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The procedures typically used for development of monitoring or remediation wells are contained in this appendix.

### **Subjective Analysis of Groundwater and Well Condition**

Following installation of a monitoring or remediation well, a minimum of approximately 48 to 72 hours is allotted to allow for curing of liquid neat cement placed in the upper portion of the borehole annulus around the well casing. Upon return to the site to complete development of the well, Stratus personnel will measure depth to groundwater within the well casing and the total depth of the well. These data will be compared with well construction information recorded at the time that the well is installed. If groundwater levels and well depths correspond to construction information, well development will proceed. If the water levels and well depths differ significantly from construction information, personnel developing the well will contact the project manager to discuss the situation prior to proceeding with development activities. Using the well depth and water level measurement, the volume of water situated within the well casing is calculated.

Prior to development, a sample of groundwater is collected from the well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating liquid petroleum hydrocarbons (LPH) and the appearance of a LPH sheen. If measurable LPH is present within the well, the field representative completing the work will discuss with the project manager whether or not to proceed with development of the well.

### **Well Development**

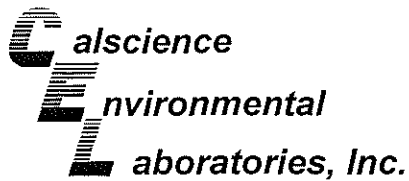
Monitoring and remediation wells are typically developed by surging and bailing, followed by groundwater pumping. Stratus personnel typically develop small diameter wells (2-inch to 4-inch) by manually raising and lowering a bailer or surge block across the screened interval of the well. Wells larger than 4-inches in diameter are typically developed using a truck mounted well development rig to complete surging and bailing activities. This well surging activity forces water movement through the filter pack sand placed around the well screen. Following surging of the well, water from the well is bailed in order to recover sediment that may have settled near the base of the well casing.

Once the surging and bailing activities have been completed, a submersible pump is placed inside of the well casing to allow for pumping of groundwater. Groundwater pumping is typically continued until the water removed from the well appears free of suspended sediment. A minimum of 10 well casing volumes are typically extracted from the well during development. However, less water may be removed from the well if insufficient recharge only allows for intermittent groundwater pumping.

Groundwater generated during development is containerized and transported off-site for disposal at an appropriate facility.

### **Equipment Cleaning**

All reusable equipment used in well development is cleaned using phosphate-free detergents and rinsed with de-ionized water following use at each specific well.



NO

February 27, 2009

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

Subject: **CalScience Work Order No.: 09-02-2158**  
Client Reference: **Arco Station 2107**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/25/2009 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.

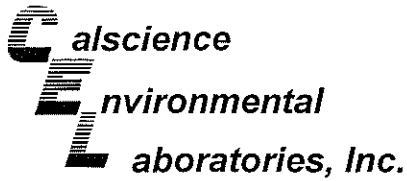
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Villafania".

CalScience Environmental  
Laboratories, Inc.  
Richard Villafania  
Project Manager

A handwritten signature in black ink, appearing to read "Richard Villafania".



Analytical Report

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

Date Received: 02/25/09  
 Work Order No: 09-02-2158  
 Preparation: EPA 3050B  
 Method: EPA 6010B

Project: Arco Station 2107

Page 1 of 1

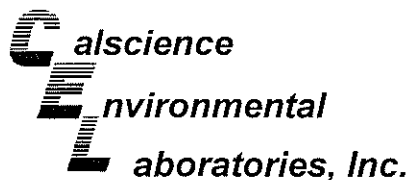
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Waste Composite	09-02-2158-1-A	02/24/09 10:00	Solid	ICP 5300	02/25/09	02/25/09 16:57	090225L01

Parameter	Result	RL	DF	Qual	Units
Lead	4.26	0.500	1		mg/kg

Method Blank	097-01-002-12,079	N/A	Solid	ICP 5300	02/25/09	02/25/09 16:33	090225L01
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Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.500	1		mg/kg

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: 02/25/09  
Work Order No: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: Arco Station 2107

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Waste Composite	09-02-2158-1-A	02/24/09 10:00	Solid	GC 1	02/25/09	02/25/09 23:30	090225B01

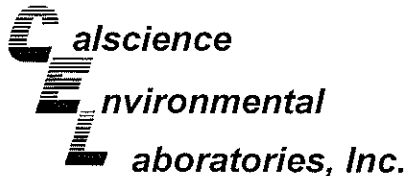
Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	86	42-126			

Method Blank	099-12-697-86	N/A	Solid	GC 1	02/25/09	02/25/09 21:55	090225B01
--------------	---------------	-----	-------	------	----------	-------------------	-----------

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	86	42-126			

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

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



Analytical Report

090226L01

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

Date Received: 02/25/09
Work Order No: 09-02-2158
Preparation: EPA 5030B
Method: EPA 8260B
Units: mg/kg

Project: Arco Station 2107

Page 1 of 1

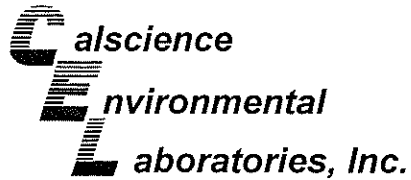
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Table with 10 columns: Parameter, Result, RL, DF, Qual, Parameter, Result, RL, DF, Qual. Rows include Benzene, Ethylbenzene, Toluene, Surrogates, Dibromofluoromethane, Toluene-d8, Xylenes (total), Methyl-t-Butyl Ether (MTBE), 1,2-Dichloroethane-d4, 1,4-Bromofluorobenzene.

Table with 8 columns: Method Blank, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: Method Blank, 099-12-709-111, N/A, Solid, GC/MS Z, 02/26/09, 02/26/09 18:11, 090226L01

Table with 10 columns: Parameter, Result, RL, DF, Qual, Parameter, Result, RL, DF, Qual. Rows include Benzene, Ethylbenzene, Toluene, Surrogates, Dibromofluoromethane, Toluene-d8, Xylenes (total), Methyl-t-Butyl Ether (MTBE), 1,2-Dichloroethane-d4, 1,4-Bromofluorobenzene.

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

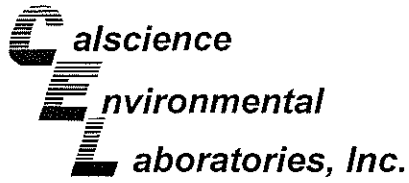
Date Received: 02/25/09  
Work Order No: 09-02-2158  
Preparation: EPA 3050B  
Method: EPA 6010B

Project Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-02-1730-1	Solid	ICP 5300	02/25/09	02/25/09	090225S01

<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>
Lead	104	104	75-125	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - PDS / PSDS



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

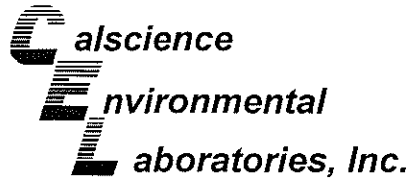
Date Received 02/25/09  
 Work Order No: 09-02-2158  
 Preparation: EPA 3050B  
 Method: EPA 6010B

Project: Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS/PSDS Batch Number
09-02-1730-1	Solid	ICP 5300	02/25/09	02/25/09	090225S01

Parameter	PDS %REC	PSDS %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	98	99	75-125	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate

NO

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

Date Received: 02/25/09  
Work Order No: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

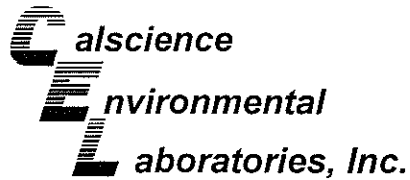
Project Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
Waste Composite	Solid	GC 1	02/25/09	02/26/09	090225S01

<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)	108	101	42-126	7	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

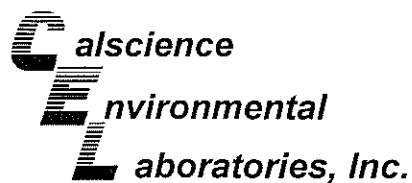
Date Received: 02/25/09  
Work Order No: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8260B

Project Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
Waste Composite	Solid	GC/MS Z	02/26/09	02/26/09	090226S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	70	25	78-114	95	0-14	LN,BA,AY
Chloroform	60	20	80-120	99	0-20	
1,1-Dichloroethane	57	19	80-120	100	0-20	
1,2-Dichloroethane	88	33	80-120	91	0-20	
1,1-Dichloroethene	61	21	73-127	98	0-21	
Ethanol	71	23	45-135	102	0-29	
Tetrachloroethene	71	21	80-120	108	0-20	
Toluene	62	20	74-116	104	0-16	LN,BA,AY
Trichloroethene	102	32	74-122	105	0-17	
Methyl-1-Butyl Ether (MTBE)	63	18	69-123	93	0-18	LN,BA,AY

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: 09-02-2158  
Preparation: EPA 3050B  
Method: EPA 6010B

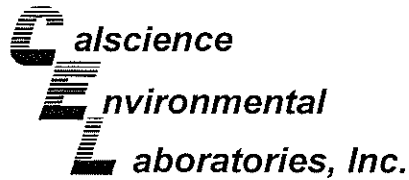
Project: Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-12,079	Solid	ICP 5300	02/25/09	02/25/09	090225L01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	105	106	80-120	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

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

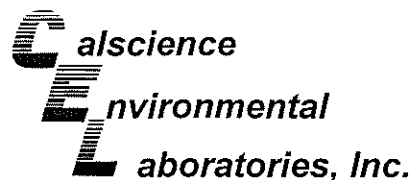
Date Received: N/A  
Work Order No: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-697-86	Solid	GC 1	02/25/09	02/25/09	090225B01

Parameter	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	107	107	70-118	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate

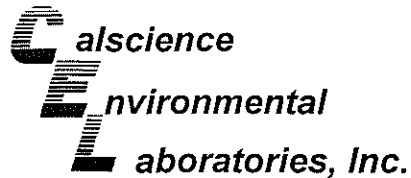
Stratus Environmental, inc.  
3330 Cameron Park Drive, Suite 550  
Cameron Park, CA 95682-8861

Date Received: N/A  
Work Order No: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-709-111	Solid	GC/MS Z	02/26/09	02/26/09	090226L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	96	93	84-114	79-119	3	0-7	
Bromobenzene	99	105	80-120	73-127	6	0-20	
Bromochloromethane	98	95	80-120	73-127	3	0-20	
Bromodichloromethane	98	98	80-120	73-127	0	0-20	
Bromoform	101	104	80-120	73-127	3	0-20	
Bromomethane	104	103	80-120	73-127	1	0-20	
n-Butylbenzene	107	107	77-123	69-131	0	0-25	
sec-Butylbenzene	105	106	80-120	73-127	1	0-20	
tert-Butylbenzene	105	103	80-120	73-127	2	0-20	
Carbon Disulfide	100	99	80-120	73-127	2	0-20	
Carbon Tetrachloride	69	74	69-135	58-146	7	0-13	
Chlorobenzene	99	102	85-109	81-113	3	0-8	
Chloroethane	103	100	80-120	73-127	3	0-20	
Chloroform	97	98	80-120	73-127	1	0-20	
Chloromethane	103	100	80-120	73-127	2	0-20	
2-Chlorotoluene	102	105	80-120	73-127	3	0-20	
4-Chlorotoluene	104	102	80-120	73-127	2	0-20	
Dibromochloromethane	101	104	80-120	73-127	3	0-20	
1,2-Dibromo-3-Chloropropane	112	106	80-120	73-127	5	0-20	
1,2-Dibromoethane	99	102	80-120	73-127	3	0-20	
Dibromomethane	101	100	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	101	100	80-110	75-115	1	0-10	
1,3-Dichlorobenzene	99	98	80-120	73-127	1	0-20	
1,4-Dichlorobenzene	99	95	80-120	73-127	4	0-20	
Dichlorodifluoromethane	103	101	80-120	73-127	2	0-20	
1,1-Dichloroethane	98	97	80-120	73-127	2	0-20	
1,2-Dichloroethane	96	93	80-120	73-127	3	0-20	
1,1-Dichloroethene	103	100	83-125	76-132	3	0-10	
c-1,2-Dichloroethene	101	102	80-120	73-127	1	0-20	
t-1,2-Dichloroethene	101	99	80-120	73-127	2	0-20	
1,2-Dichloropropane	100	100	79-115	73-121	0	0-25	
1,3-Dichloropropane	100	102	80-120	73-127	2	0-20	
2,2-Dichloropropane	102	102	80-120	73-127	0	0-20	
1,1-Dichloropropene	82	87	80-120	73-127	6	0-20	
c-1,3-Dichloropropene	106	106	80-120	73-127	0	0-20	
t-1,3-Dichloropropene	108	111	80-120	73-127	3	0-20	
Ethylbenzene	105	109	80-120	73-127	4	0-20	
Isopropylbenzene	107	113	80-120	73-127	5	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: 09-02-2158  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: Arco Station 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-709-111	Solid	GC/MS Z	02/26/09	02/26/09	090226L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
p-Isopropyltoluene	106	105	80-120	73-127	1	0-20	
Methylene Chloride	99	98	80-120	73-127	1	0-20	
Naphthalene	102	104	80-120	73-127	2	0-20	
n-Propylbenzene	104	108	80-120	73-127	4	0-20	
Styrene	106	111	80-120	73-127	4	0-20	
Ethanol	101	102	50-134	36-148	2	0-23	
1,1,1,2-Tetrachloroethane	99	100	80-120	73-127	2	0-20	
1,1,2,2-Tetrachloroethane	104	104	80-120	73-127	0	0-20	
Tetrachloroethene	99	113	80-120	73-127	13	0-20	
Toluene	99	100	79-115	73-121	0	0-8	
1,2,3-Trichlorobenzene	102	102	80-120	73-127	1	0-20	
1,2,4-Trichlorobenzene	102	102	80-120	73-127	1	0-20	
1,1,1-Trichloroethane	99	98	80-120	73-127	1	0-20	
1,1,2-Trichloroethane	96	100	80-120	73-127	4	0-20	
Trichloroethene	97	103	87-111	83-115	6	0-7	
Trichlorofluoromethane	100	98	80-120	73-127	2	0-20	
1,2,3-Trichloropropane	105	108	80-120	73-127	3	0-20	
1,2,4-Trimethylbenzene	105	105	80-120	73-127	1	0-20	
1,3,5-Trimethylbenzene	104	109	80-120	73-127	5	0-20	
Vinyl Acetate	105	101	80-120	73-127	4	0-20	
Vinyl Chloride	100	95	72-126	63-135	5	0-10	
p/m-Xylene	106	111	80-120	73-127	5	0-20	
o-Xylene	106	110	80-120	73-127	4	0-20	
Methyl-t-Butyl Ether (MTBE)	100	99	75-129	66-138	1	0-13	
Tert-Butyl Alcohol (TBA)	96	96	66-126	56-136	0	0-24	
Diisopropyl Ether (DIPE)	99	97	77-125	69-133	2	0-13	
Ethyl-t-Butyl Ether (ETBE)	100	98	72-132	62-142	1	0-12	
Tert-Amyl-Methyl Ether (TAME)	103	101	77-125	69-133	2	0-10	

Total number of LCS compounds : 66

Total number of ME compounds : 0

Total number of ME compounds allowed : 3

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

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Work Order Number: 09-02-2158


<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	There was no MS/MSD analyzed with this batch due to insufficient sample volume (NR = not reported). See Blank Spike/Blank Spike Duplicate.
BA,AY	Relative percent difference out of control, matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GS	Internal standard recovery is outside method recovery limit.
IB	CCV recovery abovelimit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG	Surrogate recovery below the acceptance limit.
LH	Surrogate recovery above the acceptance limit.
LM,AY	MS and/or MSD above acceptance limits. See Blank Spike (LCS). Matrix interference suspected.
LN,AY	MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.



Work Order Number: 09-02-2158

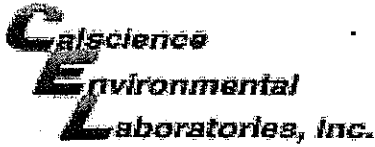
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<u>Qualifier</u>	<u>Definition</u>
MB	Analyte present in the method blank.
MG	Analyte is a suspected lab contaminate.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.









WORK ORDER #: 09-02-2158

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: STRATUS

DATE: 2/25/09

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

Temperature 16.5 °C - 0.2 °C (CF) = 16.3 °C  Blank  Sample

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

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: WB

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Initial: WB

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Initial: WB

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<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 COC.....	<input type="checkbox"/>	<input checked="" 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"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Volatile analysis container(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve  EnCores®  TerraCores®  \_\_\_\_\_

Water:  VOA  VOA<sub>h</sub>  VOA<sub>na2</sub>  125AGB  125AGB<sub>h</sub>  125AGB<sub>po4</sub>  1AGB  1AGB<sub>na2</sub>

1AGB<sub>s</sub>  500AGB  500AGB<sub>s</sub>  250CGB  250CGB<sub>s</sub>  1PB  500PB  500PB<sub>na</sub>  250PB

250PB<sub>n</sub>  125PB  125PB<sub>znn</sub>  100PBsterile  100PB<sub>na2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Summa®  \_\_\_\_\_

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

Preservative: h:HCL n:HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na:NaOH po<sub>4</sub>:H<sub>3</sub>PO<sub>4</sub> s:H<sub>2</sub>SO<sub>4</sub> znn:ZnAc<sub>2</sub>+NaOH

Checked/Labeled by: WB

Reviewed by: YL

Scanned by: WB



## APPENDIX C

**STRATUS GROUND-WATER SAMPLING DATA PACKAGE**  
(Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody  
Documentation, and Field Procedures)



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

March 27, 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:* Scott Bittinger / Jay Johnson

*Phone Number:* (530) 676-6000

*On-Site Supplier Representative:* Collin Fischer

*Sampling Date:* March 9, 2009

*Unusual Field Conditions:* None noted.

*Scope of Work Performed:* Quarterly monitoring and sampling (Initial monitoring/sampling event).

*Variations from Work Scope:* None noted.

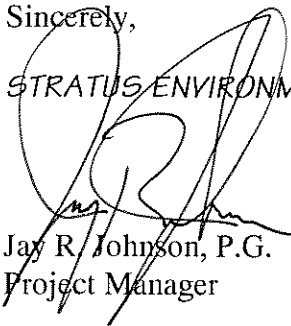
This submittal presents the data collected in association with routine groundwater monitoring. The attachments include field data sheets, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling. Groundwater generated during this well sampling event was stored onsite in 55-gallon drums and will be transported offsite by Belshire Environmental Services, Inc. at the time that soil and wastewater generated during the recent well installation activities is removed. 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.

Mr. Rob Miller, Broadbent & Associates, Inc.  
Groundwater Sampling Data Package  
ARCO Service Station No. 2107, Oakland, CA  
Page 2

March 27, 2009

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
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Monitoring

CC: Mr. Paul Supple, BP/ARCO



Site Address 3310 PARK BLVD  
 City OAKLAND, CA.  
 Sampled by: CF  
 Signature Collin F...

Site Number ARCO 2107  
 Project Number E2107  
 Project PM Jim JOHNSON  
 DATE 3/9/09

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	0720		12.11	17.71	3.3	2"	.5	1.65	2		✓			16.97	MW-11A	0735	9.20
MW-11B	0740		7.33	29.09	26.76	2"	.5	10.88	11					8.57	MW-11B	0805	9.56
MW-12A	0520		8.70	17.68	8.98	2"	.5	4.49	5		✓			9.07	MW-2A	0535	4.62
MW-12B	0540		14.89	30.05	15.16	2"	.5	7.58	8		✓			30.01	MW-2B	0600	5.87
MW-13A	0625		9.53	16.32	6.79	2"	.5	3.395	4		✓			15.46	MW-13A	0640	9.30
MW-13B	0645		2.96	22.13	19.17	2"	.5	9.735	10		✓			3.12	MW-13B	0705	8.49

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

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 \_\_\_\_\_  
 Conductivity \_\_\_\_\_  
 DO \_\_\_\_\_

MW-11A

TIME	PH	TEMP	COND	GALLONS
0725	12.64	16.7	3.78	0
0729	12.74	17.4	3.5	2

MW-11B

TIME	PH	TEMP	COND	GALLONS
0745	8.33	18.2	628	
0752	7.82	17.0	557	0
0800	7.14	18.1	518	11

MW-12A

TIME	PH	TEMP	COND	GALLONS
0522	7.10	17.1	639	0
0528	6.74	18.5	591	5

MW-12B

TIME	PH	TEMP	COND	GALLONS
0545	7.75	18.0	718	0
0550	7.49	18.4	693	4
0558	7.74	18.0	721	8

MW-13A

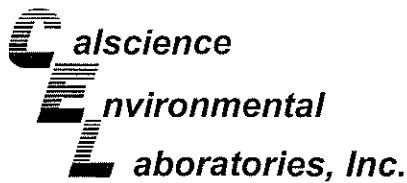
TIME	PH	TEMP	COND	GALLONS
0628	7.66	18.0	681	0
0635	7.64	18.0	633	4

MW-13B

TIME	PH	TEMP	COND	GALLONS
0650	7.17	18.3	610	0
0655	6.99	18.2	590	5
0700		18.5	584	10







net c

March 25, 2009

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

Subject: **Calscience Work Order No.: 09-03-1206**  
Client Reference: **ARCO 2107**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/13/2009 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.

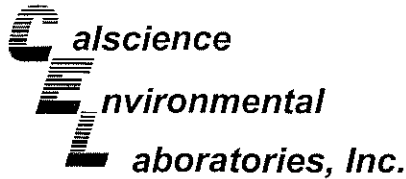
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Villafania'.

Calscience Environmental  
Laboratories, Inc.  
Richard Villafania  
Project Manager

A handwritten signature in black ink, appearing to read 'Richard Villafania'.



Analytical Report

090319B02

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

Date Received: 03/13/09
Work Order No: 09-03-1206
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 2107

Page 1 of 2

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-11A, 09-03-1206-1-D, 03/09/09 07:35, Aqueous, GC 4, 03/19/09, 03/20/09 19:52, 090319B02

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) with Result 1000; Surrogates: REC (%) and Control Limits; 1,4-Bromofluorobenzene with Result 107.

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-11B, 09-03-1206-2-D, 03/09/09 08:00, Aqueous, GC 4, 03/19/09, 03/20/09 20:25, 090319B02

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) with Result 280; Surrogates: REC (%) and Control Limits; 1,4-Bromofluorobenzene with Result 99.

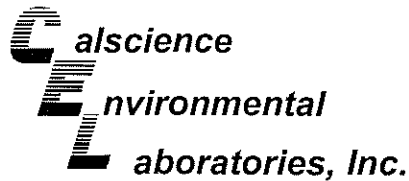
Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-12A, 09-03-1206-3-D, 03/09/09 05:35, Aqueous, GC 4, 03/19/09, 03/20/09 20:57, 090319B02

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) with Result ND; Surrogates: REC (%) and Control Limits; 1,4-Bromofluorobenzene with Result 96.

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-12B, 09-03-1206-4-D, 03/09/09 06:00, Aqueous, GC 4, 03/19/09, 03/20/09 21:30, 090319B02

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) with Result ND; Surrogates: REC (%) and Control Limits; 1,4-Bromofluorobenzene with Result 91.

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



Analytical Report

net

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

Date Received: 03/13/09
Work Order No: 09-03-1206
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 2107

Page 2 of 2

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-13A, 09-03-1206-5-D, 03/09/09 06:40, Aqueous, GC 4, 03/20/09, 03/21/09 02:58, 090320B01

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) ND, 50, 1, ug/L; Surrogates: REC (%), Control Limits, Qual; 1,4-Bromofluorobenzene 93, 38-134

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: MW-13B, 09-03-1206-6-D, 03/09/09 07:05, Aqueous, GC 4, 03/20/09, 03/21/09 03:31, 090320B01

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) ND, 50, 1, ug/L; Surrogates: REC (%), Control Limits, Qual; 1,4-Bromofluorobenzene 92, 38-134

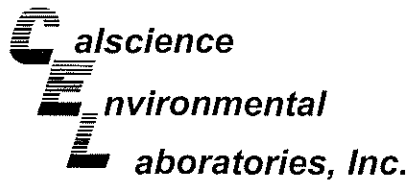
Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: Method Blank, 099-12-695-480, N/A, Aqueous, GC 4, 03/19/09, 03/20/09 07:23, 090319B02

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) ND, 50, 1, ug/L; Surrogates: REC (%), Control Limits, Qual; 1,4-Bromofluorobenzene 84, 38-134

Table with 8 columns: Client Sample Number, Lab Sample Number, Date/Time Collected, Matrix, Instrument, Date Prepared, Date/Time Analyzed, QC Batch ID. Row 1: Method Blank, 099-12-695-481, N/A, Aqueous, GC 4, 03/20/09, 03/21/09 23:09, 090320B01

Table with 6 columns: Parameter, Result, RL, DF, Qual, Units. Rows: Gasoline Range Organics (C6-C12) ND, 50, 1, ug/L; Surrogates: REC (%), Control Limits, Qual; 1,4-Bromofluorobenzene 88, 38-134

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



## Analytical Report

090318L01

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

Date Received: 03/13/09  
Work Order No: 09-03-1206  
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	09-03-1206-1-B	03/09/09 07:35	Aqueous	GC/MS Z	03/18/09	03/18/09 18:46	090318L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1.5	1.0	2		Tert-Butyl Alcohol (TBA)	ND	20	2	
Ethylbenzene	13	1.0	2		Diisopropyl Ether (DIPE)	ND	1.0	2	
Toluene	ND	1.0	2		Ethyl-t-Butyl Ether (ETBE)	ND	1.0	2	
Xylenes (total)	4.8	1.0	2		Tert-Amyl-Methyl Ether (TAME)	ND	1.0	2	
Methyl-t-Butyl Ether (MTBE)	60	1.0	2						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	102	73-145			Dibromofluoromethane	1	81-135		LG,AY
Toluene-d8	108	83-119			1,4-Bromofluorobenzene	90	74-110		

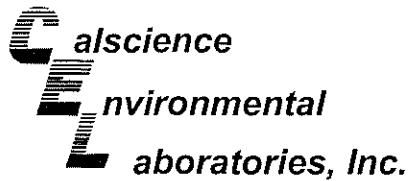
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11B	09-03-1206-2-A	03/09/09 08:00	Aqueous	GC/MS Z	03/17/09	03/18/09 08:22	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	1.3	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	7.6	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	1.3	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	3.1	0.50	1	
Methyl-t-Butyl Ether (MTBE)	240	5.0	10						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	94	73-145			Dibromofluoromethane	83	81-135		
Toluene-d8	102	83-119			1,4-Bromofluorobenzene	93	74-110		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-12A	09-03-1206-3-A	03/09/09 05:35	Aqueous	GC/MS Z	03/17/09	03/18/09 08:53	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Methyl-t-Butyl Ether (MTBE)	41	1.0	2						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	125	73-145			Dibromofluoromethane	106	81-135		
Toluene-d8	98	83-119			1,4-Bromofluorobenzene	83	74-110		

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: 03/13/09  
Work Order No: 09-03-1206  
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	09-03-1206-4-A	03/09/09 06:00	Aqueous	GC/MS Z	03/17/09	03/18/09 09:26	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	0.55	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	0.60	0.50	1	
Methyl-t-Butyl Ether (MTBE)	150	5.0	10						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	111	73-145			Dibromofluoromethane	121	81-135		
Toluene-d8	100	83-119			1,4-Bromofluorobenzene	83	74-110		

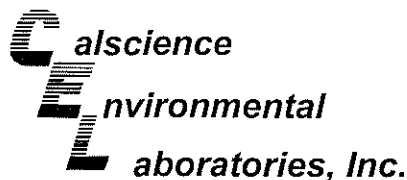
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13A	09-03-1206-5-A	03/09/09 06:40	Aqueous	GC/MS Z	03/17/09	03/18/09 09:57	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Methyl-t-Butyl Ether (MTBE)	13	0.50	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	111	73-145			Dibromofluoromethane	119	81-135		
Toluene-d8	103	83-119			1,4-Bromofluorobenzene	85	74-110		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-13B	09-03-1206-6-A	03/09/09 07:05	Aqueous	GC/MS Z	03/17/09	03/18/09 10:28	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Methyl-t-Butyl Ether (MTBE)	13	0.50	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	99	73-145			Dibromofluoromethane	84	81-135		
Toluene-d8	101	83-119			1,4-Bromofluorobenzene	81	74-110		

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: 03/13/09  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: ug/L

Project: ARCO 2107

Page 3 of 3

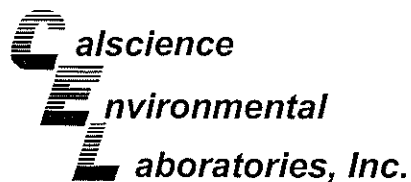
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-782	N/A	Aqueous	GC/MS Z	03/17/09	03/18/09 01:44	090317L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	99	73-145			Dibromofluoromethane	98	81-135		
Toluene-d8	101	83-119			1,4-Bromofluorobenzene	80	74-110		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-703-783	N/A	Aqueous	GC/MS Z	03/18/09	03/18/09 14:38	090318L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
Ethylbenzene	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Toluene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1						
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	101	73-145			Dibromofluoromethane	112	81-135		
Toluene-d8	102	83-119			1,4-Bromofluorobenzene	80	74-110		

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



## Quality Control - Spike/Spike Duplicate

net

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

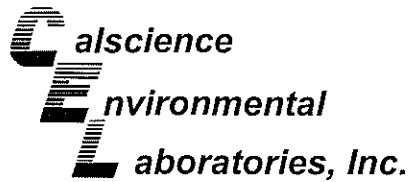
Date Received: 03/13/09  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-1183-2	Aqueous	GC 4	03/19/09	03/20/09	090319S02

<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)	100	97	38-134	3	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: 03/13/09  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

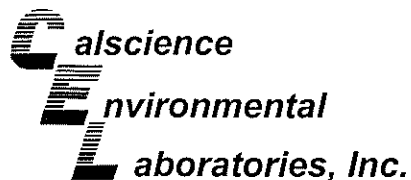
Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-1185-6	Aqueous	GC 4	03/20/09	03/21/09	090320S01

<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)	102	97	38-134	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - Spike/Spike Duplicate

net

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

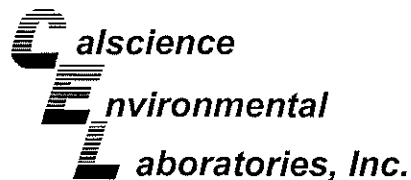
Date Received: 03/13/09  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8260B

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-1367-10	Aqueous	GC/MS Z	03/17/09	03/18/09	090317S02

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	108	112	86-122	3	0-8	
Carbon Tetrachloride	115	154	78-138	29	0-9	LM,BA,AY
Chlorobenzene	110	108	90-120	1	0-9	
1,2-Dibromoethane	121	113	70-130	7	0-30	
1,2-Dichlorobenzene	99	102	89-119	3	0-10	
1,1-Dichloroethene	106	139	52-142	27	0-23	BA,AY
Ethylbenzene	97	102	70-130	5	0-30	
Toluene	102	110	85-127	7	0-12	
Trichloroethene	97	102	78-126	5	0-10	
Vinyl Chloride	108	141	56-140	27	0-21	LM,BA,AY
Methyl-t-Butyl Ether (MTBE)	97	133	64-136	26	0-28	
Tert-Butyl Alcohol (TBA)	99	105	27-183	5	0-60	
Diisopropyl Ether (DIPE)	99	127	78-126	25	0-16	LM,BA,AY
Ethyl-t-Butyl Ether (ETBE)	91	117	67-133	25	0-21	BA,AY
Tert-Amyl-Methyl Ether (TAME)	91	89	63-141	2	0-21	
Ethanol	104	112	11-167	8	0-64	

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

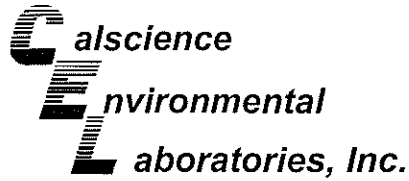
Date Received: 03/13/09  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8260B

Project ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-1367-12	Aqueous	GC/MS Z	03/18/09	03/18/09	090318S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	107	104	86-122	3	0-8	
Carbon Tetrachloride	113	115	78-138	1	0-9	
Chlorobenzene	108	107	90-120	1	0-9	
1,2-Dibromoethane	109	105	70-130	4	0-30	
1,2-Dichlorobenzene	96	97	89-119	1	0-10	
1,1-Dichloroethene	103	103	52-142	0	0-23	
Ethylbenzene	99	100	70-130	1	0-30	
Toluene	106	103	85-127	3	0-12	
Trichloroethene	96	95	78-126	0	0-10	
Vinyl Chloride	103	102	56-140	1	0-21	
Methyl-t-Butyl Ether (MTBE)	96	94	64-136	2	0-28	
Tert-Butyl Alcohol (TBA)	93	91	27-183	2	0-60	
Diisopropyl Ether (DIPE)	94	92	78-126	2	0-16	
Ethyl-t-Butyl Ether (ETBE)	87	85	67-133	2	0-21	
Tert-Amyl-Methyl Ether (TAME)	85	83	63-141	2	0-21	
Ethanol	99	104	11-167	5	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

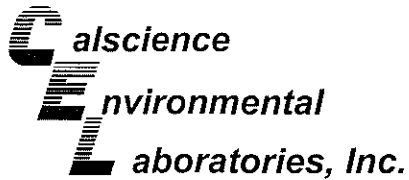
Date Received: N/A  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-480	Aqueous	GC 4	03/19/09	03/20/09	090319B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	107	109	78-120	1	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

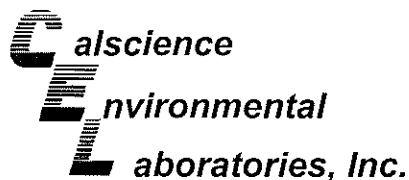
Date Received: N/A  
Work Order No: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-481	Aqueous	GC 4	03/20/09	03/21/09	090320B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	105	105	78-120	0	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: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-782	Aqueous	GC/MS Z	03/17/09	03/17/09	090317L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	111	111	87-117	82-122	0	0-7	
Carbon Tetrachloride	117	118	78-132	69-141	1	0-8	
Chlorobenzene	111	110	88-118	83-123	1	0-8	
1,2-Dibromoethane	105	108	80-120	73-127	3	0-20	
1,2-Dichlorobenzene	100	101	88-118	83-123	1	0-8	
1,1-Dichloroethene	108	109	71-131	61-141	1	0-14	
Ethylbenzene	104	104	80-120	73-127	1	0-20	
Toluene	109	108	85-127	78-134	1	0-7	
Trichloroethene	109	114	85-121	79-127	5	0-11	
Vinyl Chloride	108	106	64-136	52-148	2	0-10	
Methyl-t-Butyl Ether (MTBE)	96	97	67-133	56-144	1	0-16	
Tert-Butyl Alcohol (TBA)	98	104	34-154	14-174	6	0-19	
Diisopropyl Ether (DIPE)	100	99	80-122	73-129	1	0-8	
Ethyl-t-Butyl Ether (ETBE)	90	89	73-127	64-136	1	0-11	
Tert-Amyl-Methyl Ether (TAME)	86	86	69-135	58-146	0	0-12	
Ethanol	112	111	34-124	19-139	1	0-44	

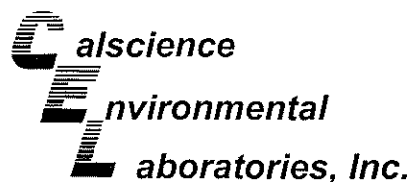
Total number of LCS compounds : 16

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



## 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: 09-03-1206  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: ARCO 2107

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-783	Aqueous	GC/MS Z	03/18/09	03/18/09	090318L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	107	107	87-117	82-122	1	0-7	
Carbon Tetrachloride	111	115	78-132	69-141	3	0-8	
Chlorobenzene	106	106	88-118	83-123	0	0-8	
1,2-Dibromoethane	102	104	80-120	73-127	2	0-20	
1,2-Dichlorobenzene	96	98	88-118	83-123	2	0-8	
1,1-Dichloroethene	101	103	71-131	61-141	2	0-14	
Ethylbenzene	100	101	80-120	73-127	1	0-20	
Toluene	105	106	85-127	78-134	1	0-7	
Trichloroethene	98	98	85-121	79-127	0	0-11	
Vinyl Chloride	103	101	64-136	52-148	2	0-10	
Methyl-t-Butyl Ether (MTBE)	92	95	67-133	56-144	3	0-16	
Teri-Butyl Alcohol (TBA)	89	93	34-154	14-174	4	0-19	
Diisopropyl Ether (DIPE)	93	94	80-122	73-129	1	0-8	
Ethyl-t-Butyl Ether (ETBE)	84	87	73-127	64-136	3	0-11	
Tert-Amyl-Methyl Ether (TAME)	82	83	69-135	58-146	0	0-12	
Ethanol	95	94	34-124	19-139	0	0-44	

Total number of LCS compounds : 16

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Work Order Number: 09-03-1206

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<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	There was no MS/MSD analyzed with this batch due to insufficient sample volume (NR = not reported). See Blank Spike/Blank Spike Duplicate.
BA,AY	Relative percent difference out of control, matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GS	Internal standard recovery is outside method recovery limit.
IB	CCV recovery above limit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG	Surrogate recovery below the acceptance limit.
LH	Surrogate recovery above the acceptance limit.
LM,AY	MS and/or MSD above acceptance limits. See Blank Spike (LCS). Matrix interference suspected.
LN,AY	MS and/or MSD below acceptance limits. See Blank Spike (LCS). Matrix interference suspected.
LQ	LCS recovery above method control limits.
LR	LCS recovery below method control limits.



Work Order Number: 09-03-1206

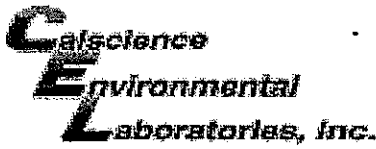
---

<u>Qualifier</u>	<u>Definition</u>
MB	Analyte present in the method blank.
MG	Analyte is a suspected lab contaminate.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.









WORK ORDER #: 09-03-11 206

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: Stratus

DATE: 03/13/09

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

Temperature 2.6 °C - 0.2°C (CF) = 2.4 °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: AF

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A Initial: SO

Sample  \_\_\_\_\_  No (Not Intact)  Not Present Initial: SO

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<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 COC.....	<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"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Volatile analysis container(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"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve  EnCores®  TerraCores®  \_\_\_\_\_

Water:  VOA  VOA<sup>h</sup>  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBpo<sub>4</sub>  1AGB  1AGBna<sub>2</sub>

1AGBs  500AGB  500AGBs  250CGB  250CGBs  1PB  500PB  500PBna  250PB

250PBn  125PB  125PBz<sub>na</sub>  100PBsterile  100PBna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Summa®  \_\_\_\_\_

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

Preservative: h:HCL n:HNO<sub>3</sub> na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> na:NaOH po<sub>4</sub>:H<sub>3</sub>PO<sub>4</sub> s:H<sub>2</sub>SO<sub>4</sub> z<sub>na</sub>:ZnAc<sub>2</sub>+NaOH

Checked/Labeled by: SO

Reviewed by: AF

Scanned by: SO

## 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  $\mu$ s daily and 1413  $\mu$ s and 447  $\mu$ 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.

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION REPORTS

STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_BORE FILE

**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-11A</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-11A.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:56:25 AM</b>
<b><u>Confirmation Number:</u></b>	<b>5217958748</b>

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**GEOTRACKER ESI**

UPLOADING A GEO\_BORE FILE

**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-11B</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-11B.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:57:15 AM</b>
<b><u>Confirmation Number:</u></b>	<b>9271063566</b>



STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_BORE FILE

**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-12A</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-12A.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:57:57 AM</b>
<b><u>Confirmation Number:</u></b>	<b>5200455188</b>

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UPLOADING A GEO\_BORE FILE

**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-12B</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-12B.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
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<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:58:18 AM</b>
<b><u>Confirmation Number:</u></b>	<b>7138543248</b>

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**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-13A</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-13A.pdf</b>
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<b><u>Username:</u></b>	<b>BROADBENT-C</b>
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<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:58:41 AM</b>
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**GEOTRACKER ESI**

UPLOADING A GEO\_BORE FILE

**SUCCESS**

Your GEO\_BORE file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_BORE</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Field Point:</u></b>	<b>MW-13B</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_BORE MW-13B.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/25/2009 11:59:00 AM</b>
<b><u>Confirmation Number:</u></b>	<b>1487725377</b>

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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_MAP FILE

**SUCCESS**

Your GEO\_MAP file has been successfully submitted!

<b><u>Submittal Type:</u></b>	<b>GEO_MAP</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>WoodRogersSurvey20090309.pdf</b>
<b><u>Username:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/19/2009 11:23:40 AM</b>
<b><u>Confirmation Number:</u></b>	<b>2360826790</b>

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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_XY FILE

**SUCCESS**

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

<b><u>Submittal Type:</u></b>	<b>GEO_XY</b>
<b><u>Submittal Title:</u></b>	<b>GEO_XY 2107</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_XY.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/19/2009 11:18:06 AM</b>
<b><u>Confirmation Number:</u></b>	<b>2990729093</b>

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STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_Z FILE

**SUCCESS**

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

<b><u>Submittal Type:</u></b>	<b>GEO_Z</b>
<b><u>Submittal Title:</u></b>	<b>GEO_Z 2107</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_Z.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>3/19/2009 11:22:43 AM</b>
<b><u>Confirmation Number:</u></b>	<b>7180090665</b>

STATE WATER RESOURCES CONTROL BOARD  
**GEOTRACKER ESI**

UPLOADING A GEO\_WELL FILE

**SUCCESS**

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<b><u>Submittal Type:</u></b>	<b>GEO_WELL</b>
<b><u>Submittal Title:</u></b>	<b>1Q09 GEO_WELL 2107</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>GEO_WELL.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>4/28/2009 11:35:00 AM</b>
<b><u>Confirmation Number:</u></b>	<b>2573574244</b>

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<b><u>Submittal Type:</u></b>	EDF - Monitoring Report - Quarterly
<b><u>Submittal Title:</u></b>	1Q09 GW Monitoring
<b><u>Facility Global ID:</u></b>	T06019734306
<b><u>Facility Name:</u></b>	ARCO #2107
<b><u>File Name:</u></b>	09031206.zip
<b><u>Organization Name:</u></b>	Broadbent & Associates, Inc.
<b><u>Username:</u></b>	BROADBENT-C
<b><u>IP Address:</u></b>	67.118.40.90
<b><u>Submittal Date/Time:</u></b>	4/23/2009 3:22:21 PM
<b><u>Confirmation Number:</u></b>	<b>7290999472</b>

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<b><u>Submittal Type:</u></b>	<b>EDF - Soil and Water Investigation Report</b>
<b><u>Submittal Title:</u></b>	<b>Soil Waste Composite</b>
<b><u>Facility Global ID:</u></b>	<b>T06019734306</b>
<b><u>Facility Name:</u></b>	<b>ARCO #2107</b>
<b><u>File Name:</u></b>	<b>09022158.zip</b>
<b><u>Organization Name:</u></b>	<b>Broadbent &amp; Associates, Inc.</b>
<b><u>Username:</u></b>	<b>BROADBENT-C</b>
<b><u>IP Address:</u></b>	<b>67.118.40.90</b>
<b><u>Submittal Date/Time:</u></b>	<b>4/23/2009 3:25:38 PM</b>
<b><u>Confirmation Number:</u></b>	<b>1041558682</b>

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