Atlantic Richfield Company
(a BP affiliated company)

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

RECEIVED

2:29 pm, Dec 23, 2008

Alameda County
Environmental Health

26 December 2008

Re: Soil Investigation Report
Atlantic Richfield Company Station No.374
6407 Telegraph Avenue
Oakland, California
ACEH Case No.RO0000078

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Submitted by:

Paul Supple
Environmental Business Manager

Soil Investigation Report
Atlantic Richfield Company Station #374
6407 Telegraph Avenue
Oakland, California

Prepared for

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

Prepared by

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

26 December 2008

Project No. 06-08-602

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

BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

26 December 2008

Project No. 06-08-602

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

Attn.: Mr. Paul Supple

Re: Soil Investigation Report, Atlantic Richfield Company (a BP affiliated company)
Station #374, 6407 Telegraph Avenue, Oakland, California;
ACEH Case #RO0000078

Dear Mr. Supple:

Attached is the *Soil Investigation Report* for Atlantic Richfield Company Station #374 (herein referred to as Station #374) located at 6407 Telegraph Avenue, Oakland, California (Site). This report presents the results of the soil boring investigation conducted at Station #374 on 12 and 13 November 2008. This investigation was conducted in accordance with the letter dated 4 September 2008 from Alameda County Environmental Health Services (ACEH). This Soil Investigation Report includes descriptions of the site background, scope of investigation and field work performed, discussion of findings, conclusions and recommendations.

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

Sincerely,
BROADBENT & ASSOCIATES, INC.

Thomas A. Venus, P.E.
Senior Engineer

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

Enclosure

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

SOIL INVESTIGATION REPORT
Atlantic Richfield Company Station #374
6407 Telegraph Avenue
Oakland, California

TABLE OF CONTENTS

ATTACHMENTS

APPENDICES

SOIL INVESTIGATION REPORT
Atlantic Richfield Company Station #374
6407 Telegraph Avenue
Oakland, California

1.0 INTRODUCTION

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, Broadbent & Associates, Inc. (BAI) has prepared this Soil Investigation Report for additional soil contamination characterization at the Atlantic Richfield Company Station #374, located at 6407 Telegraph Avenue, Oakland, California (Site). This on-site soil investigation was completed to characterize residual hydrocarbon contamination within soils at the source area. Investigation activities were conducted in accordance with the BAI *Work Plan for On-Site Soil Investigation* dated 27 June 2008, as approved with additional comments by the Alameda County Environmental Health (ACEH) in their response letter dated 4 September 2008. A copy of this letter is provided in Appendix A. This report includes discussions on the Site Background, Site Geology and Hydrogeology, Field Activities Performed, Results of the Investigation, Conclusions and Recommendations.

2.0 SITE BACKGROUND

The Site is an active ARCO brand gasoline retail outlet located at 6407 Telegraph Avenue, on the northwestern corner of Telegraph and Alcatraz Avenues in Oakland, California (Drawing 1 and Drawing 2). The land use in the immediate vicinity of the Site is mixed commercial and residential. The Site consists of a service station building and two 12,000-gallon gasoline underground storage tanks (USTs) with associated piping and dispensers. The Site is covered with asphalt or concrete surfacing except for planters along the western property boundary containing mature conifer trees.

Numerous subsurface investigations and remedial activities have been conducted on-site since 1988. A comprehensive Site history can be found within the *Work Plan for On-Site Soil Investigation* prepared by BAI dated 27 June 2008. Section 4.0 of this report details the most recent subsurface investigation field activities conducted as requested by ACEH.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report* (California Regional Water Quality Control Board – San Francisco Bay Region/SFRWQCB, June 1999), the Site is located within the Oakland Sub-Area of the East Bay Plain of the San Francisco Basin. The Oakland Sub-Area contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area historically pumped one to two million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merrit sand in West Oakland was an important part of the early water supply for the City of Oakland. It is shallow (up to 60 feet), but before the turn of the last century, septic systems contaminated the water supply wells.

Throughout most of the Alameda County portion of the East Bay Plain, from Hayward north to Albany, water level contours show that the general direction of ground-water flow is from east to west or from the Hayward Fault to the San Francisco Bay. Ground-water flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented in an east to west direction. In the southern end of the study area however, near the San Lorenzo Sub-Area, the direction of flow may not be this simple. According to information presented in *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the small set of water level measurements available seemed to show that the ground water in the upper aquifers may be flowing south, with the deeper aquifers, the Alameda Formation, moving north. The nearest natural drainage is Claremont Creek, located approximately 1.2 miles west-northwest of the Site. Claremont Creek flows generally east to west near the Site vicinity.

The Site elevation is approximately 163 feet above mean sea level. The water table fluctuates seasonally. Historically, depth-to-water measurements have ranged from 5 to 11 feet bgs. Ground-water flow direction during the first quarter monitoring event on 22 February 2008 was to the southwest at a gradient of 0.03 ft/ft.

According to the *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, the City of Oakland does not have "any plans to develop local ground-water resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity." However, the RWQCB's Basin Plan denotes existing beneficial uses of municipal and domestic supply (MUN), industrial process supply (PROC), industrial service supply (IND), and agricultural supply (AGR) for the East Bay Plain ground-water basin.

The Site is typically underlain by silty and sandy clays with intervals also consisting of sands and gravels to a total explored depth of approximately 28 feet bgs. The boring log for MW-1 indicates that intermittent layers of silty clay and sandy clay are present throughout the entire boring with gravels appearing at approximately eight feet bgs and sand appearing at approximately 18 feet bgs. The boring log for MW-2 indicates that intermittent layers of silty clay and sandy clay are present throughout the entire boring with gravels appearing at approximately eight feet bgs. The boring log for MW-3 indicates that silty clay is present throughout the entire boring with minor gravel appearing at approximately 18.5 feet bgs and sand appearing at approximately 27 feet bgs. The boring log for MW-4 indicates that silty clay is present from approximately ground surface to 13 feet bgs. Sandy gravel with some silt appears at 13 feet bgs and transitions into silty clay with some sand and gravel at approximately 22 feet bgs.

4.0 FIELD ACTIVITIES PERFORMED

The onsite soil investigation was completed to assess the presence of residual petroleum hydrocarbon-impacted soil on-site in the vicinity of the former UST complex. On 12 and 13 November 2008, Stratus oversaw RSI Drilling, Inc. advance two direct-push soil borings (identified as B-11 and B-12) at the Site. Soil boring B-11 was located in the general vicinity of the previously collected soil samples S-12-T4A1, approximately ten feet south-southeast of well MW-4. Soil boring B-12 was located in the general vicinity of previously collected soil sample

S-12-T4A2, approximately fifteen feet east of well MW-4. This location placed the boring between former USTs 3 and 4. The soil boring locations from this investigation are shown in Drawing 2.

4.1 Preliminary Field Activities

Prior to initiating field activities, Stratus obtained the necessary well drilling permits from the Alameda County Public Works Agency (See Appendix B), 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.

4.2 Soil Boring Advancement and Sampling

On 12 and 13 November 2008, Stratus field personnel observed RSI Drilling (RSI) of Woodland, California advance two soil borings (B-11 and B-12). RSI utilized a direct-push Geoprobe GH-40 drill rig to collect continuous core samples at the soil boring locations to a maximum depth of 16 ft bgs. Physical soil samples were collected at specific depths for laboratory analysis based on field observations and recommendations from ACEH.

Soil boring B-11 was advanced to a total depth of 16 ft bgs. A soil sample was collected from boring B-11 between 15-15.5 ft bgs. Reportedly, no obvious visual contamination was observed. Screening with the photo-ionization detector (PID) found 4.2 ppm of volatile organic compounds at the sample depth. Gravel (believed to be non-native excavation backfill material) was encountered from approximately 7.5 to 13.5 ft bgs. Silty clay was observed from approximately five to 7.5 ft bgs and 13.5 to 16 ft bgs, the total depth explored to. Following completion of soil boring advancement and collection of samples, the boring was backfilled with neat cement grout to surface grade.

Soil boring B-12 was advanced to a total depth of 16 ft bgs. A soil sample was collected from boring B-12 between 15.5-16 ft bgs. Reportedly, no obvious visual contamination was observed. Screening with the PID found 6.3 ppm of volatile organic compounds at the sample depth. Gravel (believed to be non-native excavation backfill material) was observed between approximately 8.5 and 14.5 ft bgs. Silty clay was encountered from approximately five to 8.5 ft bgs and 14.5 to 16 ft bgs, the total depth explored to. Following completion of soil boring advancement and collection of samples, the boring was backfilled with neat cement grout to surface grade.

4.3 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.

5.0 RESULTS OF INVESTIGATION

Soil samples were shipped to Calscience Environmental Laboratories, Inc. (Garden Grove), a California State-certified laboratory, under chain-of-custody protocol. Samples were analyzed for Gasoline Range Organics (GRO, hydrocarbon chain lengths between C6-C12) by EPA Method 8015B; and for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), 1,2-Dichloroethane (1,2-DCA), 1,2-Dibromoethane (EDB), Tert-Butyl Alcohol (TBA), and Ethanol using EPA Method 8260B. No significant irregularities were encountered during laboratory analysis of the samples. A copy of the laboratory analytical report, including chain-of-custody documentation, is provided in Appendix B.

The analytes were not detected above their respective reporting limits in the two soil samples collected with the exception of MTBE, which was detected above the laboratory reporting limit (0.0010 milligrams per kilogram, mg/kg) in sample B-11-15 at a concentration of 0.014 mg/kg and in sample B-12-15.5 at a concentration of 0.0072 mg/kg, and TBA, which was detected above the laboratory reporting limit (0.010 mg/kg) in sample B-12-15.5 at a concentration of 0.11 mg/kg. A copy of the laboratory analytical report with chain-of-custody documentation is provided in Appendix B. Laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation pages are provided in Appendix C.

6.0 CONCLUSIONS

On behalf of the Atlantic Richfield Company, RM – a BP affiliated company, BAI prepared this Soil Investigation Report for Station No. 374, located at 6407 Telegraph Avenue, Oakland, California. Investigation activities were conducted in accordance with the BAI *Work Plan for On-Site Soil Investigation* dated 27 June 2008, as approved with comments by the ACEH in their letter dated 4 September 2008. Based on the findings of this investigation, BAI concludes the following:

- MTBE was detected at concentrations of 0.014 mg/kg in the sample collected from boring B-11 at 15 ft bgs (B-11-15) and 0.0072 mg/kg in the sample collected from boring B-12 at 15.5 ft bgs (B-12-15.5).
- TBA was detected at a concentration of 0.011 mg/kg in the sample collected from boring B-12 at 15.5 ft bgs (B-12-15.5).
- Boring B-12 is in the vicinity of previous soil samples S-12-T4A1 (9 June 1988) and S-12-T4A2 (10 June 1988) which contained Total Purgeable Petroleum Hydrocarbons at 1,097 mg/kg and 795 mg/kg, respectively; Benzene at 16.3 mg/kg and 23.1 mg/kg, respectively; Toluene at 81.6 mg/kg and 67.1 mg/kg, respectively; Ethylbenzene at 34.5 mg/kg and 24.9 mg/kg, respectively; and Total Xylenes at 188.2 mg/kg and 130.9 mg/kg, respectively. No evidence of these other analytes was detected from the two source area soil boring samples.

7.0 RECOMMENDATIONS

Based on the analytical results obtained during the soil investigation, continued ground-water monitoring is recommended.

8.0 CLOSURE

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

9.0 REFERENCES

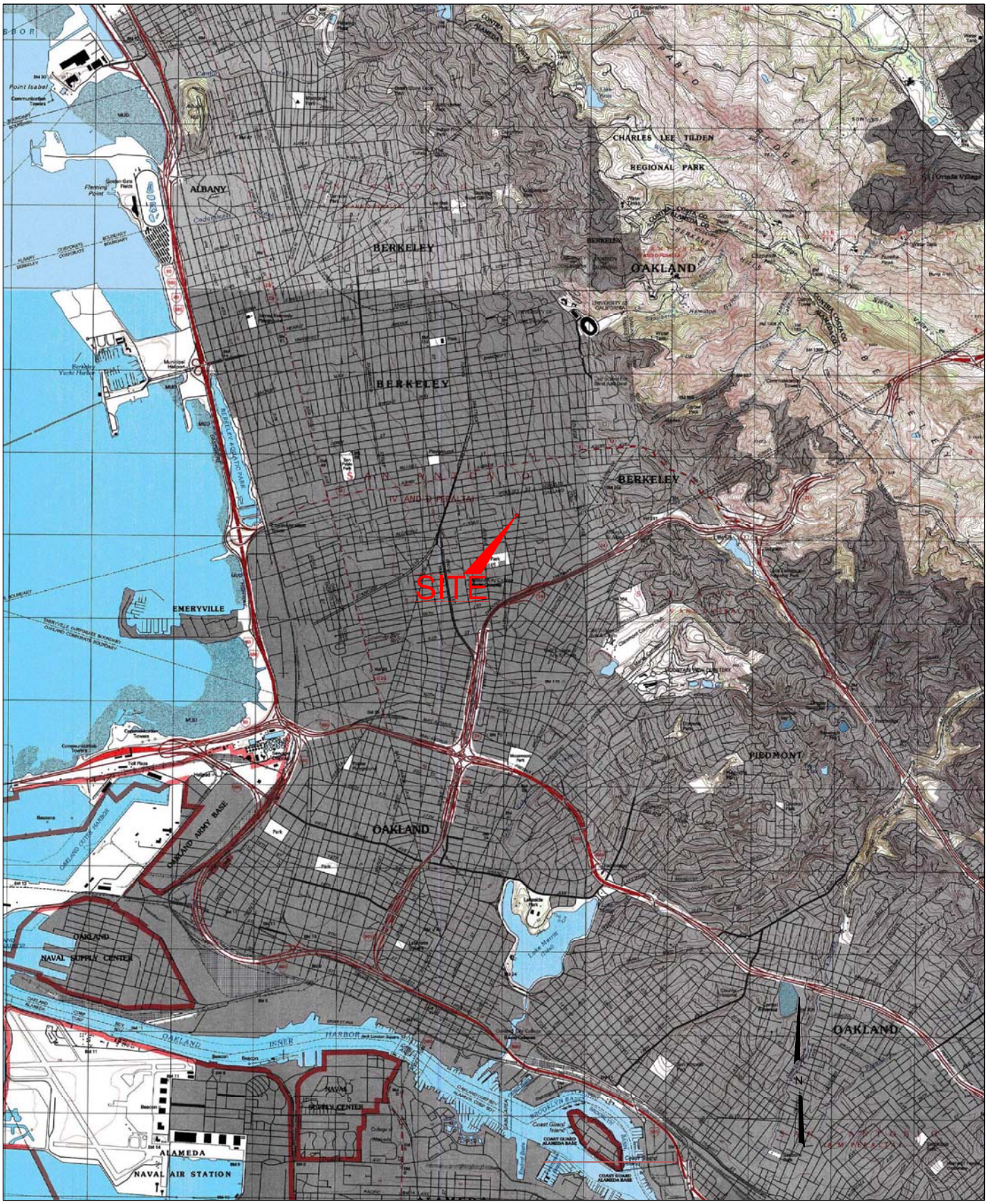
ACEH, 30 April 2008. Fuel Leak Case No. RO 0000078 and GeoTracker Global ID T0600100106 ARCO #0374, 6407 Telegraph Ave., Oakland, CA 94609. Letter from Mr. Paresh Khatri (ACEH) to Mr. Paul Supple (Atlantic Richfield Company) requesting work plan.

ACEH, 4 September 2008. Fuel Leak Case No. RO 0000078 and GeoTracker Global ID T0600100106, ARCO #0374, 6407 Telegraph Ave., Oakland, CA 94609. Letter from Mr. Paresh Khatri (ACEH) to Mr. Paul Supple (Atlantic Richfield Company) approving work plan and requesting amendment.

Broadbent & Associates, Inc., 27 June 2008. *Work Plan for On-Site Soil Investigation, Atlantic Richfield Company Station No. 374, 6407 Telegraph Avenue, Oakland, California, ACEH Case No. RO0000078.*

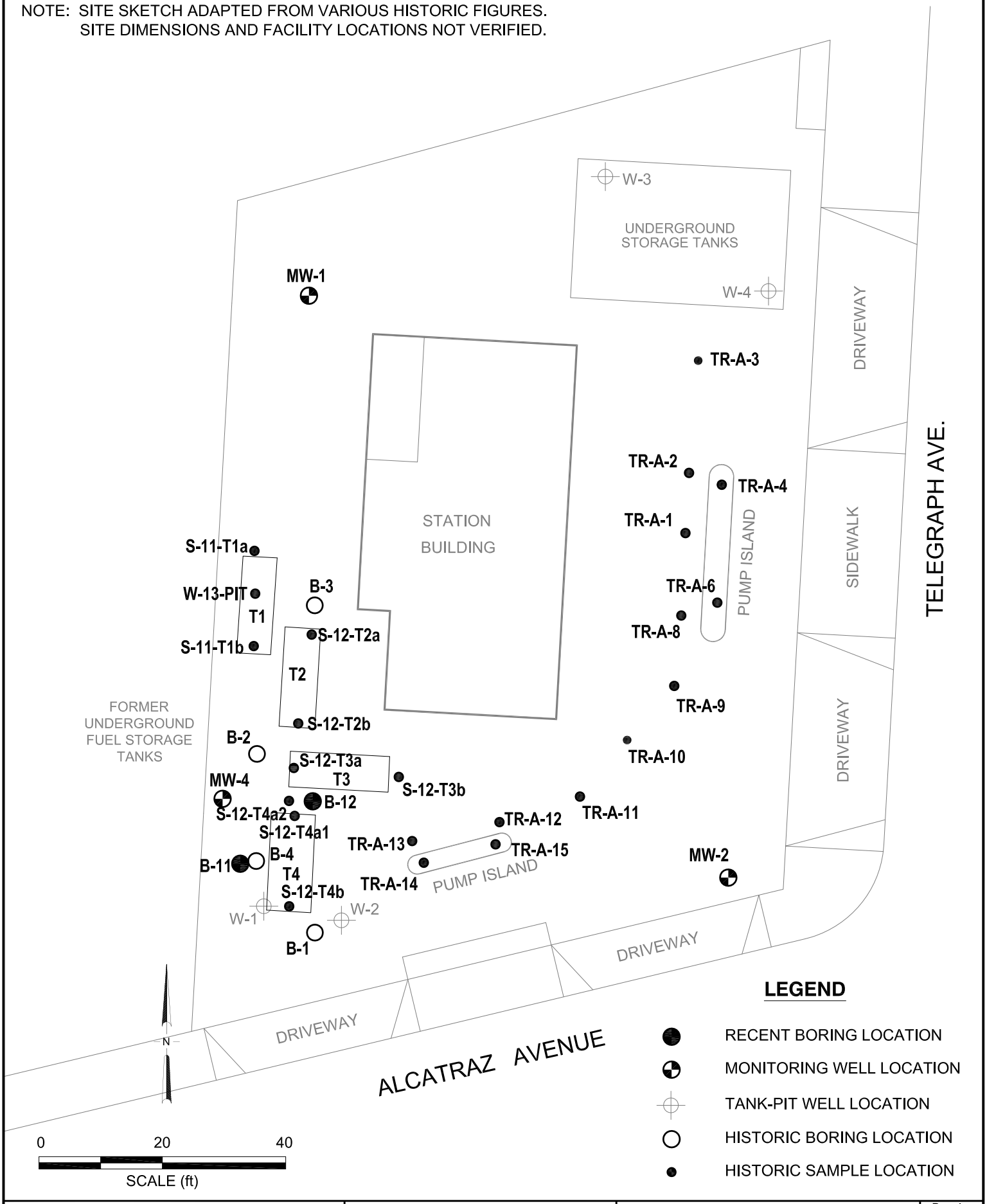
Broadbent & Associates, Inc., 23 September 2008. *Revised Sample Location Figure to amend Work Plan for On-Site Soil Investigation, Atlantic Richfield Company Station No. 374, 6407 Telegraph Avenue, Oakland, California, ACEH Case No. RO0000078.*

California Regional Water Quality Control Board, San Francisco Bay Region, Groundwater Committee, June 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda County and Contra Costa Counties, CA.*



BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, California Project No.: 06-08-602 Date: 6/19/08	Station #374 6407 Telegraph Ave. Oakland, California	Site Location Map	Drawing 1

NOTE: SITE SKETCH ADAPTED FROM VARIOUS HISTORIC FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-08-602 Date: 12/18/08

Station #374
6407 Telegraph Ave.
Oakland, California

Site Layout Plan With Soil Boring Locations

Drawing
2

APPENDIX A

RECENT REGULATORY CORRESPONDANCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

September 4, 2008

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

Subject: Fuel Leak Case No. RO0000078 and Geotracker Global ID T0600100106, ARCO #0374, 6407 Telegraph Avenue, Oakland, CA 94609

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 On-Site Soil Investigation," dated June 27, 2008, which was prepared by Broadbent and Associates for the subject site. Broadbent proposes to install one boring approximately 15 feet to the southwest of excavation confirmation soil sample S-12-T4A2, collected during the UST removals.

ACEH generally concurs with the proposed scope of work, and the work may be implemented provided that the modifications requested in the technical comments below are addressed and incorporated during the field implementation. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed.

TECHNICAL COMMENTS

1. **Source Area Characterization / Post Remedial Confirmation Sampling** – Confirmation soil samples collected following the UST removals detected a maximum concentration of 795 milligrams per kilogram (mg/kg) total petroleum hydrocarbons (TPH) as gasoline (g) and 23.1 mg/kg benzene in soil sample S-12-T4A2. Please note that the intent of the investigation is to obtain current data to assess remediation system effectiveness and characterize the source area. The proposed boring location appears to adequately define the lateral extent of contamination, but does not appear to vertically characterize the source area. To address this apparent data gap and ACEH's concerns, please install one additional boring between former USTs 3 and 4, in the vicinity of the elevated soil sample S-12-T4A2. Total depth of the continuously-cored boring should be to least 20 feet bgs, with soil samples collected every five feet, change in lithology, elevated PID readings, or soils that exhibit evidence of hydrocarbon contamination. Please submit a revised figure illustrating the proposed boring locations, as well as previous soil sample and boring locations, prior to conducted the scope of work.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Paresh Khatri), according to the following schedule:

- **September 23, 2008** – Revised Sample Location Figure
- **October 30, 2008** – Quarterly Monitoring Report (3rd Quarter 2008)
- **November 11, 2008** – Subsurface Investigation Report
- **January 30, 2009** – Quarterly Monitoring Report (4th Quarter 2008)
- **April 30, 2009** – Quarterly Monitoring Report (1st Quarter 2009)
- **July 30, 2009** – Quarterly Monitoring Report (2nd 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 an 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.

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.

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., Ste 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 SOIL BORING DATA PACKAGE
(Includes Field Data Sheets, Boring Logs, Drilling Permit, Site Plan, and Certified Laboratory Analytical Report with Chain-of-Custody Documentation)

STRATUS
ENVIRONMENTAL INC.

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

November 25, 2008

Mr. Tom Venus
Broadbent & Associates, Inc.
1324 Mangrove Ave., Suite 212
Chico, CA 95926

Re: Soil Boring Data Package, ARCO Service Station No. 374, located at 6407 Telegraph Avenue, Oakland, California.

General Information

Data Submittal Prepared / Reviewed by: Scott Bittinger / Jay Johnson
Phone Number: (530) 676-6000

On-Site Supplier Representative: Collin Fischer

Date: October 17, 2008
Arrival: 08:00 *Departure:* 10:00
Weather Conditions: Not Noted
Scope of Work Performed: Health and safety meeting with utility locating contractor. Checked for the presence of underground utilities in the vicinity of the proposed work areas. Marked drilling locations for Underground Service Alert clearance.
Unusual Field Conditions: None noted.
Variations from Work Scope: None noted.

On-Site Supplier Representative: Scott Bittinger

Date: November 12, 2008
Arrival: 6:45 *Departure:* 11:15
Weather Conditions: Cloudy
Scope of Work Performed: Health and safety meeting with RSI Drilling, Inc. Air knife 2 boreholes from surface grade to 5 feet bgs.
Unusual Field Conditions: None noted.
Variations from Work Scope: None noted.

On-Site Supplier Representative: Scott Bittinger and Josh Slater

Date: November 13, 2008
Arrival: 6:45 *Departure:* 10:20
Weather Conditions: Sunny and clear
Scope of Work Performed: Health and safety meeting with RSI Drilling, Inc. Advance 2 direct push soil borings to 16 feet bgs.
Unusual Field Conditions: Fill material encountered at sampling depths proposed by scoping contractor.
Variations from Work Scope: Boreholes extended from proposed depth of 12.5 feet bgs to 16 feet bgs to enable sampling of native soil, after discussions with BP/ARCO and scoping contractor personnel.

This submittal presents data collected in association with the advancement of two soil borings. The attachments include the field data sheets, boring logs, drilling permit, site plan, and certified analytical results. 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 interpretations or conclusions or recommendations.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Scott G. Bittinger, P.G.
Project Manager

Jay R. Johnson, P.G.
Senior Project Supervisor

PROFESSIONAL GEOLOGIST
Jay R. Johnson
No. 5867
STATE OF CALIFORNIA

Attachments:

- Field Data Sheets
- Soil Boring Logs
- Drilling Permit
- Site Plan
- Certified Analytical Results

CC: Mr. Paul Supple, BP/ARCO

ARCO 374 – Collins Electric

UNIT

10/17/08

0700 → ON SITE, TAILGATE MEETING

0830 → START CLEANING LOCATIONS & TAKING OUT WELDING LINES, CLEANED (B-11 & B-12)

1000 → OFF SITE

USA TICKET # 356102

B+L 10/16/08

Collin Fain

COLLINS ELEC., INC.

Site 374 11-12-00

Onsite 6:45. Check in w/ station manager & check USA marks.
Cloudy, 55°
RSI onsite 7:00 H&S meeting. Set up workarea.
Begin cleaning B-12 location at 7:25.

Tanknology shows up at 7:30. Talk to technician. He indicates that he will shut down the fueling operations between 8:00 & 9:00. Tanks are on other side of station property, so our work is not affecting the tank test.

Gas station closes at 8:10; makes onsite safer due to traffic hazard reduction.

Cleared B-12 to 5' bgs at 8:50 a.m.

Begin cleaning B-11 at 9:00 a.m. reach 5' bgs w/ air knife at 10:32

Backfill holes w/ soil & patch ground.

Offsite 11:15

Scott Selby

Arco 374, Oakland 11-13-03

Onsite 6:45. Check in w/ station manager.

RSI Drilling onsite 7:00. Set up work area & conduct H&S meeting.
Josh Staley from Stratus onsite for fieldwork at 8:00

Begin at B-11. Advance borehole, encounter crushed rock (smaller than pea gravel size, but similar material) at about 8' bgs.

Discuss objectives w/ sooper & call Paul Supple of Arco for safety variance. Get permission to advance borehole through the crushed rock & collect sample from native soil beneath this fill

Advance B-11 to 16' bgs and grout. Received verbal permission from Vicki Hanlin Of Alameda County to grout without an inspection

Move to B-12. Similar material encountered in sub surface as B-11.

Patch holes & depart site at 10:20

1 drum of mixed water & soil onsite

Scott Bitz

SOIL BORING LOG **Boring No. B-11** **Sheet: 1 of 1**

Client	ARCO 374	Date	November 13, 2008
Address	6407 Telegraph Avenue	Drilling Co.	RSI rig type: Geoprobe GH-40
	Oakland, CA	Driller	Juan Morales
Project No.	E374	Method	Direct Push borehole diameter: 3"
Logged By:	Scott Bittinger	Sampler:	Acetate Liner
Well Pack	grout: 16 ft. to 0 ft.		

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
						1		Airknife to 5' bgs.	
						2		mixed fill material (fine grained soil, sand, and gravel mixtures) with plastic and other debris	
						3			
						4			
						5	CL	SILTY CLAY fill material, olive brown to greenish gray, dry to moist	
						6			
						7			
						8			
						9	GP	GRAVEL (crushed rock fill material), fine gravel particle size, very wet	
						10			
						11			
						12			
						13			
						14			
						15			
S	B11-15		9:03			16	CL	SILTY CLAY, grayish brown (13.5' to 15'), light olive brown with orange iron oxide stains (15'-16'), wet (13.5'-15'), moist (15'-16'), stiff	4.2
						17			
						18			
						19			
						20			

Recovery

Sample

Comments: total depth = 16'

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. B-12** **Sheet: 1 of 1**

Client	ARCO 374	Date	November 13, 2008
Address	6407 Telegraph Avenue	Drilling Co.	RSI rig type: Geoprobe GH-40
	Oakland, CA	Driller	Juan Morales
Project No.	E374	Method	Direct Push borehole diameter: 3"
Logged By:	Scott Bittinger	Sampler:	Acetate Liner
Well Pack	grout: 16 ft. to 0 ft.		

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Well Details	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
						1		Airknife to 5' bgs.	
						2		mixed fill material (fine grained soil, sand, and gravel mixtures) with plastic and other debris	
						3			
						4			
						5	CL	SILTY CLAY fill material, olive brown to greenish gray, dry to moist	
						6			
						7			
						8			
						9			
						10			
						11	GP	GRAVEL (crushed rock fill material), fine gravel particle size, very wet	
						12			
						13			
						14			
						15			
S	B12-15.5		9:50			16	CL	SILTY CLAY, light olive brown, damp to moist, stiff	6.3
						17			
						18			
						19			
						20			

Recovery

Sample

Comments: total depth = 16'

STRATUS ENVIRONMENTAL, INC.

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: 10/16/2008 By jamesy

Permit Numbers: W2008-0771
Permits Valid from 11/13/2008 to 11/13/2008

Application Id: 1224018269431
Site Location: 6407 Telegraph Avenue, Oakland, CA
City of Project Site: Oakland
Project Start Date: 11/13/2008
Completion Date: 11/13/2008
Requested Inspection: 11/13/2008
Scheduled Inspection: 11/13/2008 at 12:00 PM (Contact your inspector, Ron Smalley at (510) 670-5407, to confirm.)

Applicant: Stratus Enviroonmental Inc. - Scott Bittinger
3330 Cameron Park Dr #550, Cameron Park, CA 95682
Phone: 530-676-2062

Property Owner: BP/ ARCO
6 Centerpointe Dr, La Palma, CA 90623
Phone: 925-275-3801

Client: ** same as Property Owner **

Total Due: $230.00
Receipt Number: WR2008-0369 **Total Amount Paid:** $230.00
Payer Name : Stratus Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Geotechnical Study/CPT's - 2 Boreholes
Driller: RSI Drilling - Lic #: 802334 - Method: other

Work Total: $230.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2008-0771	10/16/2008	02/11/2009	2	3.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. 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.

4. 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 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.

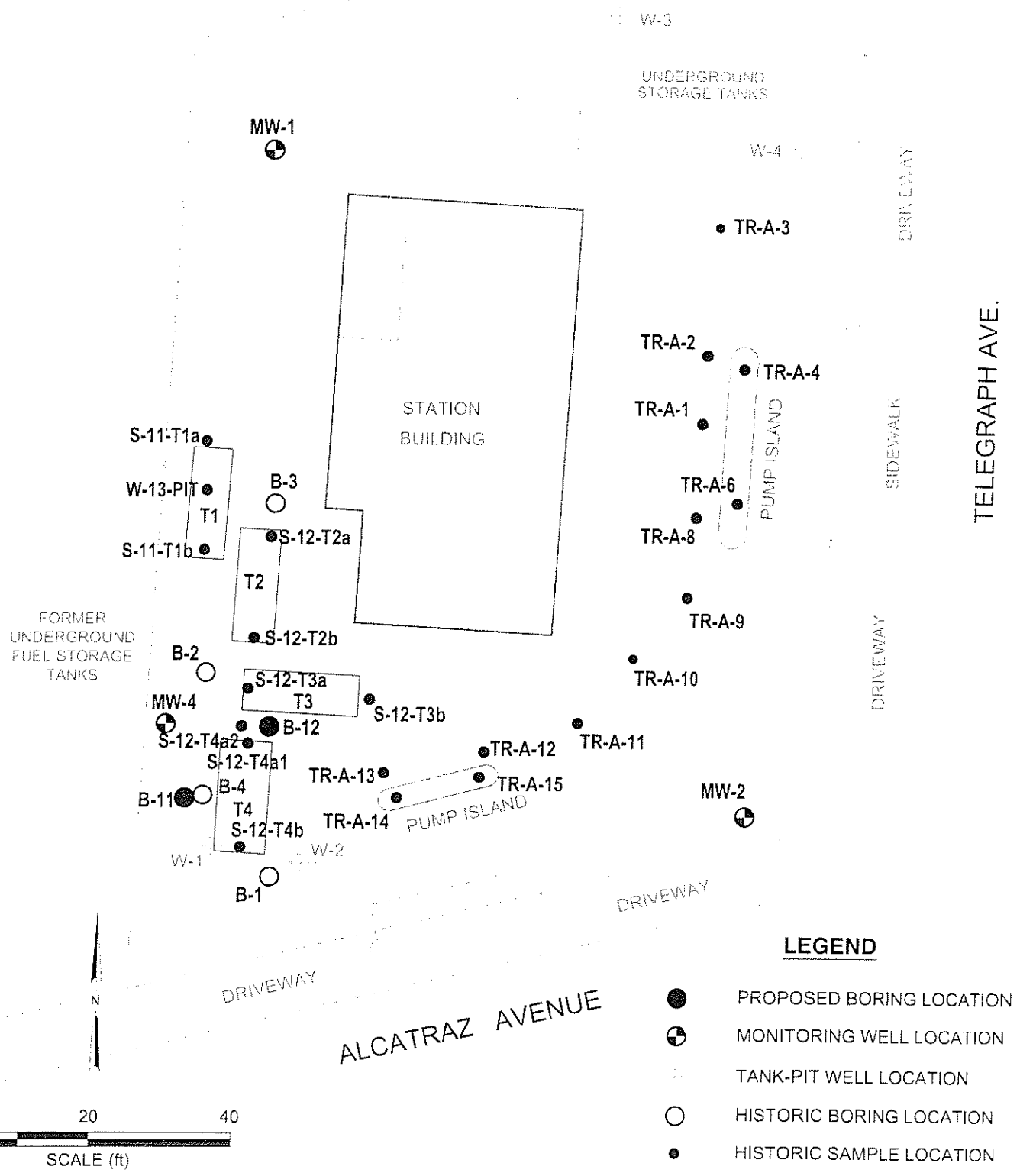
5. Applicant shall contact Ron Smalley for an inspection time at 510-670-5407 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. 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.

7. 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.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

NOTE: SITE SKETCH ADAPTED FROM VARIOUS HISTORIC FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-08-602 Date: 9/16/08

Station #374
6407 Telegraph Ave.
Oakland, California

Site Sketch With Historic and Proposed Sample Locations

Drawing
2

Calscience Environmental Laboratories, Inc.

November 21, 2008

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

Subject: **Calscience Work Order No.: 08-11-1327**
Client Reference: ARCO 374

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 11/14/2008 and analyzed in accordance with the attached chain-of-custody.

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

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

Sincerely,

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 3050B
Method: EPA 6010B

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Waste Composite	**08-11-1327-1-A**	**11/13/08 09:10**	**Solid**	**ICP 5300**	**11/20/08**	**11/20/08 18:00**	**081120L01**

Parameter	Result	RL	DF	Qual	Units
Lead	5.81	0.500	1		mg/kg

Method Blank	097-01-002-11,743	N/A	Solid	ICP 5300	11/20/08	11/20/08 17:54	081120L01

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

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Waste Composite	**08-11-1327-1-A**	**11/13/08 09:10**	**Solid**	**GC 1**	**11/15/08**	**11/18/08 21:09**	**081118B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	74	42-126			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-11-15	**08-11-1327-2-A**	**11/13/08 09:03**	**Solid**	**GC 1**	**11/15/08**	**11/18/08 21:41**	**081118B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	76	42-126			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B-12-15.5	**08-11-1327-3-A**	**11/13/08 09:50**	**Solid**	**GC 1**	**11/15/08**	**11/18/08 22:12**	**081118B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	77	42-126			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-697-50**	**N/A**	**Solid**	**GC 1**	**11/18/08**	**11/18/08 16:54**	**081118B01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	0.50	1		mg/kg
Surrogates:	**REC (%)**	**Control Limits**		**Qual**	
1,4-Bromofluorobenzene	76	42-126			

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8260B
Units: mg/kg

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Waste Composite	**08-11-1327-1-A**	**11/13/08 09:10**	**Solid**	**GC/MS Z**	**11/19/08**	**11/20/08 06:06**	**081119L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Xylenes (total)	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Methyl-t-Butyl Ether (MTBE)	0.0084	0.0010	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	98	75-141		1,2-Dichloroethane-d4	99	73-151	
Toluene-d8	101	87-111		1,4-Bromofluorobenzene	97	71-113	

B-11-15	**08-11-1327-2-A**	**11/13/08 09:03**	**Solid**	**GC/MS Z**	**11/19/08**	**11/20/08 06:37**	**081119L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	0.014	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	117	75-141		1,2-Dichloroethane-d4	122	73-151	
Toluene-d8	102	87-111		1,4-Bromofluorobenzene	94	71-113	

B-12-15.5	**08-11-1327-3-A**	**11/13/08 09:50**	**Solid**	**GC/MS Z**	**11/19/08**	**11/20/08 07:08**	**081119L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	0.0072	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	0.011	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Dibromofluoromethane	112	75-141		1,2-Dichloroethane-d4	120	73-151	
Toluene-d8	105	87-111		1,4-Bromofluorobenzene	92	71-113	

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

Calscience Environmental Laboratories, Inc.

Analytical Report

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

Date Received: 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8260B
Units: mg/kg

Project: ARCO 374

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-709-67**	**N/A**	**Solid**	**GC/MS Z**	**11/19/08**	**11/20/08 01:30**	**081119L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.0010	1		Xylenes (total)	ND	0.0010	1	
1,2-Dibromoethane	ND	0.0010	1		Methyl-t-Butyl Ether (MTBE)	ND	0.0010	1	
1,2-Dichloroethane	ND	0.0010	1		Tert-Butyl Alcohol (TBA)	ND	0.010	1	
Ethylbenzene	ND	0.0010	1		Diisopropyl Ether (DIPE)	ND	0.0020	1	
Ethanol	ND	0.10	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.0020	1	
Toluene	ND	0.0010	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.0020	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Dibromofluoromethane	115	75-141			1,2-Dichloroethane-d4	113	73-151		
Toluene-d8	99	87-111			1,4-Bromofluorobenzene	91	71-113		

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

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.	Date Received: 11/14/08
3330 Cameron Park Drive, Suite 550	Work Order No: 08-11-1327
Cameron Park, CA 95682-8861	Preparation: EPA 3050B
	Method: EPA 6010B

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
Waste Composite	**Solid**	**ICP 5300**	**11/20/08**	**11/20/08**	**081120S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	99	102	75-125	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

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

Date Received 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 3050B
Method: EPA 6010B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS/PDSD Batch Number
Waste Composite	**Solid**	**ICP 5300**	**11/20/08**	**11/20/08**	**081120S01**

Parameter	PDS %REC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	95	95	75-125	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.		Date Received:	11/14/08
3330 Cameron Park Drive, Suite 550		Work Order No:	08-11-1327
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-11-1051-15	**Solid**	**GC 1**	**11/15/08**	**11/18/08**	**081118S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	90	81	42-126	10	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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

Date Received: 11/14/08
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
08-11-1337-8	**Solid**	**GC/MS Z**	**11/19/08**	**11/20/08**	**081119S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	94	99	78-114	5	0-14	
Chloroform	98	96	80-120	2	0-20	
1,1-Dichloroethane	94	93	80-120	1	0-20	
1,2-Dichloroethane	93	91	80-120	2	0-20	
1,1-Dichloroethene	105	108	73-127	3	0-21	
Ethanol	1	1	45-135	47	0-29	LN,BA
Tetrachloroethene	96	99	80-120	2	0-20	
Toluene	96	105	74-116	9	0-16	
Trichloroethene	96	97	74-122	1	0-17	
Methyl-t-Butyl Ether (MTBE)	91	89	69-123	1	0-18	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	08-11-1327
Cameron Park, CA 95682-8861		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-11,743	**Solid**	**ICP 5300**	**11/20/08**	**11/20/08**	**081120L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	110	109	80-120	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.		Date Received:	N/A
3330 Cameron Park Drive, Suite 550		Work Order No:	08-11-1327
Cameron Park, CA 95682-8861		Preparation:	EPA 5030B
		Method:	EPA 8015B (M)

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-697-50	**Solid**	**GC 1**	**11/18/08**	**11/18/08**	**081118B01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	91	87	70-118	4	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-67	**Solid**	**GC/MS Z**	**11/19/08**	**11/19/08**	**081119L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	104	103	84-114	79-119	0	0-7	
Bromobenzene	103	98	80-120	73-127	6	0-20	
Bromochloromethane	102	103	80-120	73-127	0	0-20	
Bromodichloromethane	108	107	80-120	73-127	1	0-20	
Bromoform	100	99	80-120	73-127	1	0-20	
Bromomethane	95	166	80-120	73-127	54	0-20	LQ,BA
n-Butylbenzene	101	101	77-123	69-131	0	0-25	
sec-Butylbenzene	106	109	80-120	73-127	3	0-20	
tert-Butylbenzene	105	104	80-120	73-127	1	0-20	
Carbon Disulfide	104	105	80-120	73-127	0	0-20	
Carbon Tetrachloride	100	101	69-135	58-146	1	0-13	
Chlorobenzene	100	97	85-109	81-113	4	0-8	
Chloroethane	125	129	80-120	73-127	3	0-20	LQ
Chloroform	103	106	80-120	73-127	3	0-20	
Chloromethane	119	119	80-120	73-127	0	0-20	
2-Chlorotoluene	106	103	80-120	73-127	3	0-20	
4-Chlorotoluene	101	102	80-120	73-127	1	0-20	
Dibromochloromethane	103	101	80-120	73-127	2	0-20	
1,2-Dibromo-3-Chloropropane	107	106	80-120	73-127	1	0-20	
1,2-Dibromoethane	99	96	80-120	73-127	3	0-20	
Dibromomethane	96	95	80-120	73-127	1	0-20	
1,2-Dichlorobenzene	97	98	80-110	75-115	2	0-10	
1,3-Dichlorobenzene	96	94	80-120	73-127	2	0-20	
1,4-Dichlorobenzene	90	92	80-120	73-127	2	0-20	
Dichlorodifluoromethane	120	122	80-120	73-127	2	0-20	LQ
1,1-Dichloroethane	101	103	80-120	73-127	2	0-20	
1,2-Dichloroethane	99	100	80-120	73-127	1	0-20	
1,1-Dichloroethene	112	115	83-125	76-132	3	0-10	
c-1,2-Dichloroethene	109	113	80-120	73-127	3	0-20	
t-1,2-Dichloroethene	101	101	80-120	73-127	1	0-20	
1,2-Dichloropropane	101	102	79-115	73-121	1	0-25	
1,3-Dichloropropane	101	99	80-120	73-127	2	0-20	
2,2-Dichloropropane	68	69	80-120	73-127	1	0-20	LR
1,1-Dichloropropene	105	107	80-120	73-127	2	0-20	
c-1,3-Dichloropropene	105	104	80-120	73-127	0	0-20	
t-1,3-Dichloropropene	100	96	80-120	73-127	3	0-20	
Ethylbenzene	109	104	80-120	73-127	5	0-20	
Isopropylbenzene	113	109	80-120	73-127	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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

Date Received: N/A
Work Order No: 08-11-1327
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 374

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-709-67	**Solid**	**GC/MS Z**	**11/19/08**	**11/19/08**	**081119L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
p-Isopropyltoluene	107	106	80-120	73-127	1	0-20	
Methylene Chloride	104	102	80-120	73-127	2	0-20	
Naphthalene	94	97	80-120	73-127	3	0-20	
n-Propylbenzene	108	104	80-120	73-127	4	0-20	
Styrene	107	104	80-120	73-127	3	0-20	
Ethanol	94	93	50-134	36-148	1	0-23	
1,1,1,2-Tetrachloroethane	105	104	80-120	73-127	1	0-20	
1,1,2,2-Tetrachloroethane	97	92	80-120	73-127	6	0-20	
Tetrachloroethene	104	117	80-120	73-127	12	0-20	
Toluene	104	103	79-115	73-121	1	0-8	
1,2,3-Trichlorobenzene	91	89	80-120	73-127	2	0-20	
1,2,4-Trichlorobenzene	85	84	80-120	73-127	1	0-20	
1,1,1-Trichloroethane	97	98	80-120	73-127	1	0-20	
1,1,2-Trichloroethane	97	95	80-120	73-127	3	0-20	
Trichloroethene	105	106	87-111	83-115	1	0-7	
Trichlorofluoromethane	116	116	80-120	73-127	0	0-20	
1,2,3-Trichloropropane	102	102	80-120	73-127	0	0-20	
1,2,4-Trimethylbenzene	106	107	80-120	73-127	1	0-20	
1,3,5-Trimethylbenzene	111	106	80-120	73-127	5	0-20	
Vinyl Acetate	109	92	80-120	73-127	17	0-20	
Vinyl Chloride	106	107	72-126	63-135	1	0-10	
p/m-Xylene	111	106	80-120	73-127	4	0-20	
o-Xylene	110	105	80-120	73-127	4	0-20	
Methyl-t-Butyl Ether (MTBE)	100	101	75-129	66-138	1	0-13	
Tert-Butyl Alcohol (TBA)	93	92	66-126	56-136	1	0-24	
Diisopropyl Ether (DIPE)	101	96	77-125	69-133	5	0-13	
Ethyl-t-Butyl Ether (ETBE)	102	103	72-132	62-142	1	0-12	
Tert-Amyl-Methyl Ether (TAME)	103	104	77-125	69-133	1	0-10	

Total number of LCS compounds : 66
Total number of ME compounds : 2
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 08-11-1327

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

Work Order Number: 08-11-1327

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

Atlantic Richfield Company
bp
A BP affiliated company

Chain of Custody Record

173135

1327

Page 1 of 1

Project Name: ARCO 374
BP BU/AR Region/Enfos Segment: Alameda Portfolio
State or Lead Regulatory Agency: Alameda County Health Care Services Agency
Requested Due Date (mm/dd/yy): 11-21-08

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: Cal Science	BP/AR Facility No.: 374
Address: 7440 Lincoln Way, Garden Grove, CA 92841	BP/AR Facility Address: 6407 Telegraph Ave., Oakland
Lab PM:	Site Lat/Long:
Tele/Fax:	California Global ID No.: T0600100106
BP/AR EBM: Paul Supple	Enfos Project No.: GOC21-0026
Address:	Provision or OOC (circle one)
	Phase/WBS: assessment
Tele/Fax: 925-275-3801	Sub Phase/Task: analytical
	Cost Element: Contractor labor

Consultant/Contractor: Stratus Environmental, Inc.	
Address: 3330 Cameron Park Drive, #550, Cameron Park, CA 95682	
Consultant/Contractor Project No.: E-374-1	
Consultant/Contractor PM: Jay Johnson	
Tele/Fax: 530-676-6000	
Report Type & QC Level: level 1 w/ EDF	
E-mail EDD To:	
Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)	

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of Containers	Preservative: Unpreserved	Preservative: H_2SO_4	Preservative: HNO_3	Preservative: HCl	Preservative: Methanol	Requested Analysis: GRO, BTEX	Requested Analysis: Stexys	Requested Analysis: 1,2-DCA	Requested Analysis: EDB	Requested Analysis: ethanol	Requested Analysis: total lead	Sample Point Lat/Long and Comments
1	Waste Composite	9:10	11-13	✓				1						✓	✓				✓	
2	B-11-15	9:03	11-13	✓				1						✓	✓	✓	✓	✓		
3	B-12-15.5	9:50	11-13					1						✓	✓	✓	✓	✓		
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Sampler's Name:	Scott Bittinger
Sampler's Company:	Stratus Environmental, Inc.
Shipment Date:	11-13-08
Shipment Method:	G.S.O.
Shipment Tracking No:	1057488447

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Scott Bittinger					
				11/14/08	1030

Special Instructions:

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

Laboratory

BP COC Rev. 5 10/11/2006

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 08-11-1327

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Stratus

DATE: 11/14/08

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

Temperature 4.1 °C - 0.2 °C (CF) = 3.9 °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: JB

CUSTODY SEALS INTACT:

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

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: AL

SAMPLE CONDITION:

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

CONTAINER TYPE:

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

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

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by: AL

Reviewed by: MC

Scanned by: AL

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

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

APPENDIX C

GEOTRACKER UPLOAD CONFIRMATION

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Soil and Water Investigation Report**
Submittal Title:	**SWI GW Sampling 1108**
Facility Global ID:	**T0600100106**
Facility Name:	**ARCO #0374**
File Name:	**08111327.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**12/18/2008 9:15:35 AM**
Confirmation Number:	**8568726062**

VIEW QC REPORT

VIEW DETECTIONS REPORT