Atlantic Richfield Company

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RECEIVED
By Alameda County Environmental Health 3:06 pm, Jul 30, 2015

March 31, 2015

Re: Soil Investigation and Vapor Intrusion Assessment Report
Former Richfield Oil Company Station #374
6407 Telegraph Avenue, Oakland, California
ACEH Case #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,

Chuck Carmel
Remediation Management Project Manager

Attachment:

SOIL INVESTIGATION AND VAPOR INTRUSION ASSESSMENT REPORT

Former Richfield Oil Company Station No.374
6407 Telegraph Avenue, Oakland, California
ACEH Case No. RO000078

Prepared for

Mr. Charles Carmel
Operations Project Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by

BROADBENT
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March 31, 2015

Project No. 06-88-602

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Creating Solutions. Building Trust.

March 31, 2015

Project #06-88-602

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

Attn.: Mr. Chuck Carmel

Re: Soil Investigation and Vapor Intrusion Assessment Report
Former Richfield Oil Company Station #374, 6407 Telegraph Ave., Oakland, Alameda County
ACEH Case #RO0000078

Dear Mr. Carmel:

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Soil Investigation and Vapor Intrusion Assessment Report* (Report) on behalf of Atlantic Richfield Company (a BP affiliated company), for Former Richfield Oil Company Station #374 located at 6407 Telegraph Avenue, Oakland, Alameda County, California (the Site). This Report presents a description of recently conducted activities including advancement of soil borings and a vapor intrusion assessment. This work was carried out in accordance with the *Second Addendum to Soil Vapor Investigation Work Plan, June 27, 2014.*

Please do not hesitate to contact me at (707) 455-7290.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Alexander J. Martinez
Senior Staff Geologist

PROFESSIONAL GEOLOGIST
KRISTENE TIDWELL
No. 969
CERTIFIED HYDRO. GEOLOGIST
09/12/16
STATE OF CALIFORNIA

Kristene Tidwell, P.G., C. Hg.
Senior Geologist

cc: Ms. Karel Detterman, P.G., Alameda County Environmental Health (submitted via ACEH ftp site)
Mr. Bill Phua, Fruitvale-Farnum Associates, LLC, 638 Webster St., #300, Oakland, CA 94607
Mr. Hugh K. Phares, III, Attorney at Law, 911 Paru St., Alameda, CA 94501-4033
Electronic copy uploaded to GeoTracker

CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST
Former Richfield Company Station No. 374
6407 Telegraph Ave, Oakland, California
Fuel Leak Case No. RO0000078

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CONCEPTUAL SITE MODEL AND CASE CLOSURE REQUEST
Former Richfield Company Station No. 374
6407 Telegraph Ave, Oakland, California
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1.0 INTRODUCTION

Broadbent & Associates, Inc. (Broadbent) has prepared this *Soil Investigation and Vapor Intrusion Assessment Report* (Report) on behalf of the Atlantic Richfield Company (ARC) – a BP affiliated company, for Former Richfield Oil Company Station #374 located at 6407 Telegraph Avenue in Oakland, Alameda County, California (Site). A Site Map is presented as Drawing 1.

This Report documents soil investigation and vapor intrusion assessment activities recently conducted. These activities included installing two nested soil vapor sampling probes (two distinct depths for each location) and a soil investigation of three different soil boring locations offsite. A Site description, background, details of field activities, a discussion of results, conclusions and recommendations are presented in the following Sections.

2.0 SITE DESCRIPTION AND BACKGROUND

Station No. 374 is located at the northwest corner of Telegraph and Alcatraz Avenues in an area of mixed residential and commercial land use. The elevation of the Site is approximately 164 feet above mean sea level with local topography sloping gently to the southwest (United States Geological Survey [USGS], Oakland West Quadrangle, California). Surrounding land use is primarily single- and multi-family residences with commercial buildings located east and southeast of the Site. The Assessor's Parcel Number is 16-1424.

The adjacent property to the west is a, multi-story apartment complex. The adjacent property to the north is a restaurant/store. Across Alcatraz Avenue to the south of the Site is a dry cleaner. Across Telegraph to the east of the Site is a pawn shop and window decorations shop. A Site Location Map is provided as Drawing 1. A Site Map depicting current groundwater elevation and analytical data is presented as Drawing 2.

3.0 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Setting

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 fan deposits. The alluvial fill thickness ranges from 300 to 700 feet deep and there are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this sub-area have 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 groundwater flow is from east to west or from the Hayward Fault to the San Francisco Bay. Groundwater 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.

3.2 Historic Site-Specific Conditions

Based on historical groundwater monitoring information that began during the Second Quarter 2000, depth-to-water (DTW) measurements range historically from approximately 4.5-9 feet below ground surface (bgs). The groundwater gradient direction associated with the Site is predominantly to the southwest. Based on review of historic geologic boring logs, soil beneath the Site generally consists of silty clay, clay, sand and gravelly sands.

4.0 SOIL INVESTIGATION ACTIVITIES

The purpose of this recently conducted investigation was to collect data in order to evaluate current subsurface adjacent offsite Site conditions, including the presence and extent of residual hydrocarbon impacts in soil and groundwater. In order to evaluate current subsurface conditions, two nested soil vapor probes were installed at depths of 3 and 5 ft-bgs in a small courtyard between the Site and an apartment complex on Irwin Court. Additionally, three soil borings were drilled to first encountered groundwater.

4.1 Preliminary Activities, Local Permitting, and Notification

Necessary permits including drilling permits from the Alameda County Public Works Agency (ACPWA) were secured prior to carrying out the field investigation. Copies of these permits are included in Appendix C. Additionally, all borings were marked and areas were outlined with white spray paint, and an Underground Service Alert (USA) ticket was secured to notify all utility companies on the area of the upcoming activities. Additionally, all boring locations were cleared for underground utilities by NorCal Geophysical (NorCal) on December 2, 2014. NorCal's utility locate report is included in Appendix D.

The Site-specific HASP was prepared for use by field personnel. The HASP addressed hazards associated with drilling activities. A copy of the HASP was available onsite during work. The subcontractor(s) performing field activities were provided with a copy of the HASP prior to initiating work, and daily safety tailgate meetings were conducted to review hazards and drilling safety associated with execution of the work.

4.2 Soil Borings

Gregg Drilling and Testing, Inc. (Gregg) mobilized to the Site on December 4 and 10, 2014 as well as January 16, 2015 to perform borehole clearance using a hand auger for all proposed soil boring and soil vapor probe locations. The soil vapor probes were hand augered to their respective depths of 3 and 5 ft-bgs, while the soil borings were hand augered to at least 10 ft-bgs or first encountered groundwater. On December 4 and 10, 2014 and January 16, 2015, Broadbent personnel oversaw the soil boring activities and soil vapor probe installations. Soil samples were collected via the hand auger into brass sleeves, where each end was securely capped. During the January 16, 2015 sampling event, one soil boring was cleared to 6.5 ft-bgs with a hand auger and later drilled to a total depth of 15 ft-bgs via direct push. This particular event was conducted to assess the subsurface near one of the proposed soil borings not finished due to refusal at 6 and 8.5 ft-bgs. B-1 was the original borehole location, which was hand augered at two different points, each one with refusal. B-1b was the new borehole location that was advanced via hand auger and direct push. Soil samples were collected using a macrocore sampler lined with acetate tubes for the direct push drilling. All soil borings were logged for lithology, presence of first-encountered groundwater and identification of potential contamination.

Soil borings were classified according to the Unified Soil Classification System (USCS), and were additionally logged using visual and manual methods for parameters including odor, staining, color, grain size, and moisture content. Field screening for hydrocarbons will include use of a photo-ionization detector (PID) measurements. Boring/soil vapor logs are presented in Appendix E.

4.3 Soil Sampling and Analysis

Collected soil sample cores were sealed with Teflon sheets, capped and placed in a chilled cooler. Samples were then be submitted to TestAmerica Laboratory (TestAmerica) of Irvine, California, a state-certified analytical laboratory, under standard chain-of-custody protocol. Soil samples were analyzed for Gasoline-Range Organics (GRO, C6-C12) by EPA Method 8015M and for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), 5 Fuel Oxygenates (DIPE, ETBE, MTBE, TAME & TBA), Ethanol, 1,2-Dibromoethane (EDB), 1,2-Dichloroethane (1,2-DCA) and Naphthalene by EPA Method 8260B. Table 2 summarizes soil analytical results.

4.4 Investigation-Derived Soil and Water Disposal

Soil produced during the investigation was temporarily stored on-site in 55-gallon drums, pending characterization for proper disposal. Broadbent coordinated on February 5, 2015 the transportation and disposal of the excess soil and water to the appropriate California-regulated facilities.

4.5 Groundwater Sampling and Analysis

First encountered groundwater samples were collected during the soil investigation activities for soil borings B-1/B-1b, B-2, and B-3. No irregularities were reported during sampling activities. Samples were submitted under chain-of-custody protocol to Test America Laboratories, Inc. of Irvine, California, for analysis of Gasoline-Range Organics (GRO, C6-C12) by EPA Method 8015M and for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), 5 Fuel Oxygenates (DIPE, ETBE, MTBE, TAME & TBA), Ethanol, 1,2-Dibromoethane (EDB), 1,2-Dichloroethane (1,2-DCA) and Naphthalene by EPA Method 8260B. The laboratory analytical reports, including chain-of-custody documentation, are provided in Appendix G. Table 3 summarizes groundwater analytical results.

5.0 VAPOR INTRUSION ASSESSMENT ACTIVITIES

The purpose of soil vapor sampling activities discussed herein was to collect data in order to evaluate current subsurface Site conditions including the presence and extent of residual hydrocarbon. Additional soil vapor sampling was conducted to determine whether a vapor intrusion risk to the current building occupants associated with the historic release exists. In order to evaluate this potential risk, two soil vapor probes in two sampling locations (Drawing 1) were installed. Soil vapor sampling activities were performed in accordance with The California Department of Toxic Substances Control's (DTCS's) *Advisory – Active Soil Gas Investigations* (DTSC, 2012)**.**

5.1 Preliminary Activities, Local Permitting, and Notification

Necessary permits including drilling permits from the ACPWA were secured prior to carrying out the field investigation. Copies of these permits are included in Appendix D. Borings were marked and areas were outlined with white spray paint, and an Underground Service Alert (USA) ticket was secured to notify utility companies in the area of the upcoming activities. Additionally, boring locations were

cleared for underground utilities by NorCal Geophysical (NorCal) on December 2, 2014 NorCal's utility locate maps are included in Appendix E.

The Site-specific HASP was prepared for use by field personnel. The HASP addressed hazards associated with drilling activities. A copy of the HASP was available onsite during work. The subcontractor(s) performing field activities were provided with a copy of the HASP prior to initiating work, and daily safety tailgate meetings were conducted to review hazards and drilling safety associated with execution of the work.

5.2 Soil Vapor Probe Borings

Two soil vapor sampling locations were installed (SG-2A/B, SG-3A/B; Drawing 1) on December 4 and 10, 2015 by Gregg. Two soil vapor probes were installed at each location: An "A" soil vapor probe was constructed with the probe installed at 3.5 ft bgs, and a "B" soil vapor probe was constructed with the probe installed at 5 ft bgs. The two depth intervals were installed at each location to assess the potential bioattenuation of residual hydrocarbons in soil vapor. Specific bioattenuation indicator parameters (oxygen, argon, methane, and carbon dioxide; see Section 5.4 below) were measured in each interval to determine the presence and length of any zone of bioattenuation.

In lieu of nested multi-level wells, each soil vapor boring was constructed to a specific depth within its own boring, thus minimizing the potential for short-circuiting. Probes SG-2A and SG-2B are located in the courtyard of the building in order to quantify risks to existing or future building occupants. Soil vapor probes SG-2A/B and SG-3A/B were installed on the southeast portion of the property. These locations were intended to evaluate risks the residences to the east of the property. Each probe is horizontally separated by at least three feet at each location; soil boring B-3 is in between each soil vapor location with SG-3A/B to the north and SG-2A/B to the south. SG-3A/B boring log is identified as SG-3, but is constructed identical as SG-2A/B as a nested well.

5.3 Soil Vapor Probe Construction

Soil vapor probes were constructed by attaching a 6-inch long soil vapor probe tip to a 0.125-inch diameter Teflon tubing extending approximately two feet above the surface. The soil vapor probe tips were constructed of double-woven stainless steel wire screen with a 0.057-inch pore diameter, equipped with stainless-steel end fittings. Each soil vapor probe was embedded within the middle of a one-foot thick sand filter pack of #2/12 sorted sand, topped with 1.5 feet of dry powdered Bentonite clay below a minimum of one-half foot of hydrated powdered Bentonite clay, and completed with a traffic-rated well vault at the surface set with neat cement concrete surface seal to match the existing grade.

5.4 Soil Vapor Probe Sampling

Broadbent personnel conducted soil vapor sampling activities on February 25, 2015. No rainfall event of 0.5 inches or more had recently occurred within 24 hours of sampling. During the soil vapor sampling event on February 25, 2015, it was discovered that the well box for SG-3A/B had been flooded, likely from the past storm events and SG-2B contained water in the tubing while conducting the soil vapor sampling. Due to concerns noted by field staff that the integrity of the soil vapor might have been compromised from the water in the well box, soil vapor was not collected for SG-3A/B and soil vapor was not collected from SG-2B.

Initially, the soil vapor sampling train was assembled by connecting the Swagelok fitting at the end of the probe's tubing to an inline vacuum gauge with a tee then to a 100-cubic centimeter (cc) calibrated syringe with three-way valve at the tip. Coming off the tee for the sample was a one-liter Summa canister, supplied by the laboratory under high vacuum (-30 inches Mercury, in.Hg), leak checked and batch-certified to be free of contaminants. With the valve of the soil vapor probe closed and the valve to the Summa canister closed, the sampling train was checked for leaks during a, "shut-in" leak test by applying with the calibrated syringe a vacuum of -15 in.Hg for a period of five minutes (-15 in.Hg is fifty percent above the standard threshold of -10 in.Hg considered representative of "No Flow" conditions). When the applied vacuum did not drop during the shut-in test, the sampling train assembly was considered leak-tested tight.

After the shut-in leak test, the closed valve of the soil vapor probe was opened and the sampling train slowly purged of one calculated interior volume using the calibrated syringe. The calculated interior volume included the aboveground tubing, appurtenances, below-ground tubing, probe tip, but not the pore space within the filter pack. The main purpose in waiting to sample for at least one month after installation is to allow the soil vapor in the fine sand filter pack to equilibrate to the soil vapor in the undisturbed soil surrounding the implant location. In the tight permeability soils encountered at this Site, the first soil vapor drawn in from outside the implant tubing was assumed to be the most representative and likely contain highest concentrations than would be encountered through excessive purging.

Following the completion of purging, a clear-plastic shroud was setup over the sampling train to contain the chemical tracer/leak-check compound of Helium gas. The shroud was placed to completely cover the soil vapor sampling implant wellhead, its aboveground tubing, and the tubing, fittings, and sample Summa canister that will make up the sampling train. Once setup, Helium gas was released via tubing under the shroud. A Radiodetection Model MGD-2002 Helium detector was used to monitor the concentration within the shroud by placing its sensor probe within. Prior to and during sampling, a positive-pressure concentration of approximately 20 percent Helium was maintained within the shroud using the compressed gas cylinder's flow regulator.

Once a positive-pressure Helium atmosphere was created under the shroud, the valve to the Summa canister was opened and the sample collected. The sampling rates into the Summa canisters was fixed by laboratory-supplied critical orifice assemblies (i.e. mini flow regulators) with a 0.0060 inch orifice allowing approximately 200 standard cc per minute (cc/min). Samples were collected into the Summa canisters until the vacuum dropped from the initial laboratory-supplied vacuum of -30 in.Hg to -5 in.Hg. Sample start times, end times, starting vacuums, ending vacuums, and Helium concentrations during sampling were recorded in the field notes. Soil vapor samples may not be colleceted if the probes or integrity of the well box have been compromised. For example, a sample will not be collected if water from a storm event is present within the well box or if water droplets are present within the tubing during the collection process. One sample was not collected during the most recent soil vapor investigation. These notes are included in Appendix E.

5.5 Laboratory Analysis of Soil Vapor Samples

Collected samples were submitted to TestAmerica under standard chain-of-custody protocol. At the laboratory, soil vapor samples will be analyzed for GRO by EPA Method TO-3 and for BTEX, Naphthalene and MTBE by EPA Method TO-15. Soil vapor samples will also be analyzed for Oxygen (O_2) and Carbon Dioxide (CO_2), Methane (CH_4) and Helium (tracer/leak-check compound) by Modified ASTM D-1946.

Laboratory analyses for soil vapor samples were performed in accordance with EPA standard holding times for Summa canisters. Table 4 summarizes soil vapor sampling results.

6.0 INVESIGATION RESULTS

The following sections summarize the results of the recently conducted Site assessment activities. These results include encountered lithology, groundwater gradient and elevation, soil analytical results, groundwater analytical results and soil vapor analytical results. The analytical results were compared to Environmental Screening Levels (ESLs; CRWQCB, 2013) and applicable Low Threat UST Closure Policy (LTCP; SWRCB, 2012), where appropriate. Soil boring/soil vapor logs are included in Appendix E. Soil analytical results and applicable ESLs and LTCP criteria are summarized in Table 2. Table 3 provides a summary of groundwater analytical results and applicable ESLs. Table 4 summarizes soil vapor analytical results and applicable ESLs. Drawing 2 depicts groundwater elevation contours from August 4, 2014. Drawings 3, 4 and 5 depict GRO, benzene and MTBE isoconcentrations in groundwater, respectively.

6.1 Encountered Lithology

Soils encountered during soil investigation/vapor probe activities consisted of primarily silt, clay, and sand with minor variable amounts of gravels present. Trace amounts of fine grained sand within the clay was noted in the first four feet of B-1 and B-1A. A distinct sand layer was noted in B-3 from 1.5-6 ft-bgs. Clay and silt identified for each soil boring/soil vapor probe had a stiff consistencies. Moisture was noted in each soil boring down to total depth.

6.2 Groundwater Elevation and Gradient

Groundwater surface elevations ranged from 155.94 ft above msl in well MW-1 to 148.84 ft above msl in well MW-5 according to the most recent groundwater monitoring event (3Q14). Water level elevations yielded a potentiometric groundwater gradient to the southeast at approximately 0.03 ft/ft. Potentiometric groundwater elevation contours are presented in Drawing 2. This calculated groundwater gradient is consistent with previous monitoring events.

6.3 Soil Analytical Results

Soil samples were collected at various intervals for each soil boring; B-1 samples were collected at 3 and 7 ft-bgs, B-2 samples were collected at 3-3.5 and 8-8.5 ft-bgs and B-3 samples were collected at 3-3.5 and 5-5.5 ft-bgs. The occurrence of residual hydrocarbon compounds was detected in soil samples collected from B-1. Concentrations of GRO were detected at 3 and 7 ft-bgs at 1.6 mg/kg and 0.95 mg/kg, respectively. Detected concentrations in soil appear to be minor to non-detect residual resulting from the highly degraded petroleum plume. There were no detections of residual hydrocarbon concentrations in soil borings B-2 and B-3.

Shallow soil samples collected (above 10 feet bgs) did not contain any petroleum concentrations in excess of values listed in Table 1 of the LTCP. Residual concentrations of petroleum in soil do not pose a risk for direct contact. Soil analytical results are summarized in Table 2.

6.4 Groundwater Analytical Results

Residual concentrations of petroleum hydrocarbons in groundwater were detected in soil borings B-1b and B-2. The highest overall petroleum compound concentrations were detected in B-2 These concentrations included GRO at 24,000 µg/L, benzene at 3,900 µg/L, toluene at 380 µg/L, ethylbenzene at 3,600 µg/L, xylenes at 1,300 µg/L, and naphthalene at 1,900 µg/L. No MTBE was detected in this boring. No other petroleum compounds were detected in these downgradient soil boring locations. There were no detections of residual petroleum hydrocarbon concentrations in soil boring B-3.

Concentrations in excess of ESLs were detected both soil borings B-1 and B-2. GRO, BTEX, and naphthalene exceeded their respective ESLs. Table 3 summarizes groundwater analytical results and ESLs. Laboratory analytical reports are included in Appendix G. GRO and benzene contaminant isoconcentration maps are included as Drawings 3 and 4, respectively.

6.5 Soil Vapor Analytical Results

No benzene, toluene, ethylbenzene or MTBE were detected in any of the two (SG-1A & SG-2A) soil vapor samples collected. GRO, total xylenes and naphthalene were detected for each collected sample. However, the concentrations for GRO, total xylenes and naphthalene were below Tier 1 ESLs. Soil vapor analytical results are summarized in Table 4. After the installation of newly installed soil vapor probes on December 10, 2014, two major storm events occurred in December. During the soil vapor sampling event on February 25, 2015, it was discovered that the well box for SG-3A/B had been flooded, likely from the past storm events and SG-2B contained water in the tubing while conducting the soil vapor sampling. Due to concerns noted by field staff that the integrity of the soil vapor might have been compromised from the water in the well box, soil vapor was not collected for SG-3A/B and soil vapor was not collected from SG-2B. Broadbent field personnel removed the water from the well box and will re-mobilize at a later date to complete the sample collection for SG-3A/B.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The results of the recently conducted investigation indicates that residual impacts are present, primarily in groundwater, at highest concentrations downgradient of the Site across Alcatraz Avenue at soil boring location B-2. These residual impacts are largely present in silt and clay. Groundwater gradient is relatively flat (0.03 ft/ft), which is consistent with the noted lithology and the regional geologic conditions and depositional environment. Therefore, residual contaminant migration of petroleum hydrocarbons remaining in groundwater is likely limited both laterally and vertically by lithologic conditions.

According to the First Quarter 2015 Monitoring Report, onsite well MW-4 had the highest concentrations of GRO and benzene of 7,000 µg/L and 120 µg/L, respectively. High concentrations of GRO and BTEX were detected above their respective ESLs in downgradient soil borings B-1 and B-2 at 8,800 µg/L and 24,000 µg/L, respectively. Boring B-1 is approximately 85 feet downgradient of B-2 and although it appears the contamination plume has crossed Alcatraz Avenue, B-1 yielded lower concentrations for GRO and BTEX than B-2. Well MW-5, which is 110 feet downgradient of B-1, contained no petroleum hydrocarbons (First Quarter 2015 Monitoring Report). Based on these data, observations and analysis, the extent of remaining petroleum hydrocarbons in groundwater is defined.

Soil vapor analytical and soil analytical results indicate that no concentrations above ESLs or applicable LTCP criteria exist. These data indicate minimal to no risk for the onsite building occupants from

potential petroleum vapor intrusion to indoor air, outdoor air exposure and potential direct contact with soil. However, soil vapor samples from SG-2B and SG-3A/B need to be collected to further evaluate risks to offsite residents.

Overall, recent data indicates that residual petroleum hydrocarbons have degraded since Site groundwater was sampled in 1999 to 2002, likely due to natural attenuation. However, high concentrations of GRO and benzene downgradient of the Site indicate that contamination may spread beyond the localized wells onsite or an additional offsite hydrocarbon source may be present. Although offsite well MW-5 has historically yielded no detections of petroleum hydrocarbons in previous sampling events, concentrations in the upgradient soil borings suggest the plume may have migrated offsite and may continue extend further downgradient. It is recommended the need for an offsite investigation and the potential of an offsite source be evaluated. Additionally, soil vapor sampling near the recently advanced offsite borings is recommended to assess potential risks to occupants of adjacent off site building if it is deterioned impactes originated from the Site. A potentioal offsite source across Telegraph Avenue (Mobil/Givens Investment Company) has initialle been identified and this Site contained LNAPL when UST's were removed. Due to shallowgroundwater conditions, this LNAPL potentially could have travelled through adjacent utility trenches.

8.0 REFERENCES

Broadbent & Associates, 2014. Third Quarter 2014 Monitoring Report. Atlantic Richfield Company Station No. 374, 6407 Telegraph Avenue, Oakland California, ACEH Case No. RO 0000078. October 31.

Broadbent & Associates, 2014. Second Addendum to Soil Vapor Investigation Work Plan. Atlantic Richfield Company Station No. 374, 6407 Telegraph Avenue, Oakland California, ACEH Case No. RO 0000078. June 27.

LEGEND

- Monitoring Well Location
- Soil Boring Location
- Soil Vapor Probe Location
- Tank Pit Monitoring Well Location
- Soil Boring Nexted Probe Locations - 3 feet & 5 feet

N

0 40 80

SCALE (ft)

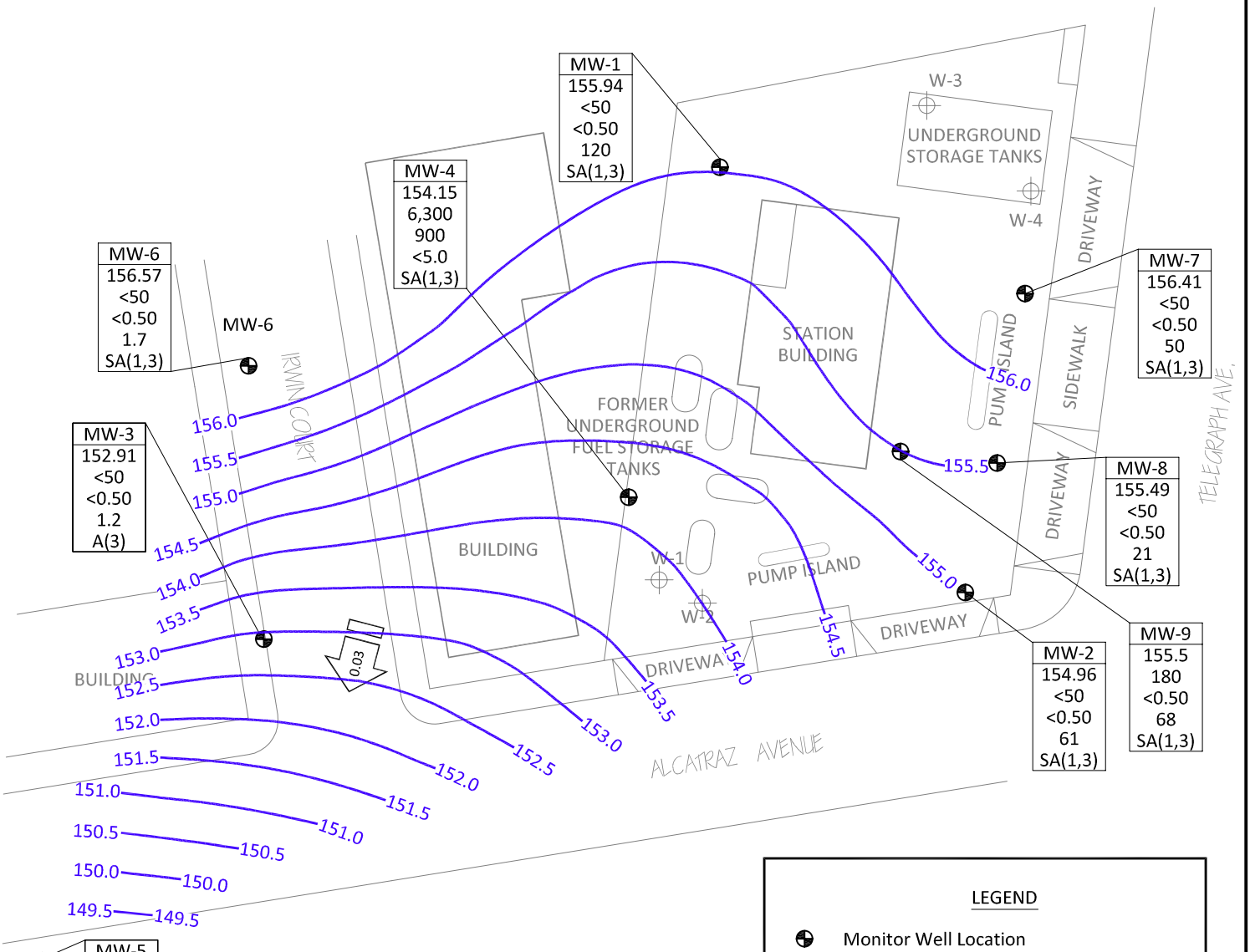
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

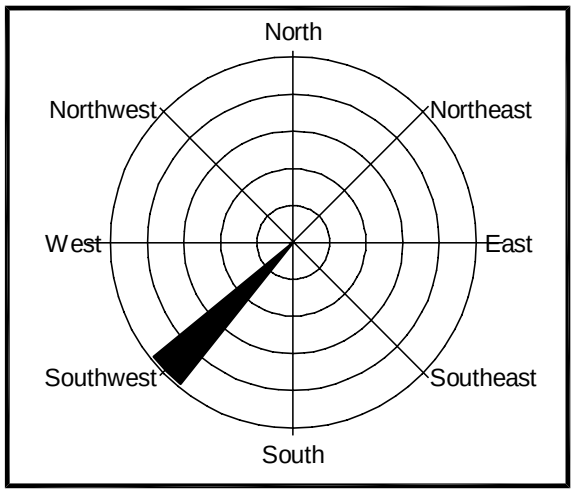
BROADBENT
4820 Business Center Dr., Ste. 110
Fairfield, CA 94534
Project No.: 06-88-602 Date: 6/13/2014

Station #374
6407 Telegraph Ave.
Oakland, California

Site Map with
Proposed Additional Soil Vapor Probe
and Soil Boring Locations

Drawing
1





LEGEND

- Monitor Well Location
- Tank Pit Monitor Well Location
- Groundwater Elevation Contour (Feet Above Site Datum)
- 0.03 — Groundwater Gradient (ft/ft)
- A(3) — Sampled Annually - Third Quarter
- SA(1,3) — Sampled Semi-Annually - First and Third Quarter

WELL	Well Designation
ELEV	Groundwater Elevation (ft)
GRO BZ MTBE	GRO, Benzene, and MTBE Concentrations (µg/L)
A/SA/Q	Sampling Frequency

- NS — Not Sampled

0 40 80

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
4820 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 06-88-602 Date: 10/20/2014

Station No. 374
6407 Telegraph Ave.
Oakland, California

Groundwater Elevation Contours and Analytical Summary Map
August 8, 2014

Drawing
2

LEGEND

- Monitoring Well Location
- Soil Boring Location
- Soil Vapor Probe Location
- Tank Pit Monitoring Well Location
- Soil Boring Nexted Probe Locations - 3 feet & 5 feet
- 24,000 GRO Concentration in µg/L
- NM Not Measured
- <50 Not Detected
- 100 GRO Isoconcentration Contour

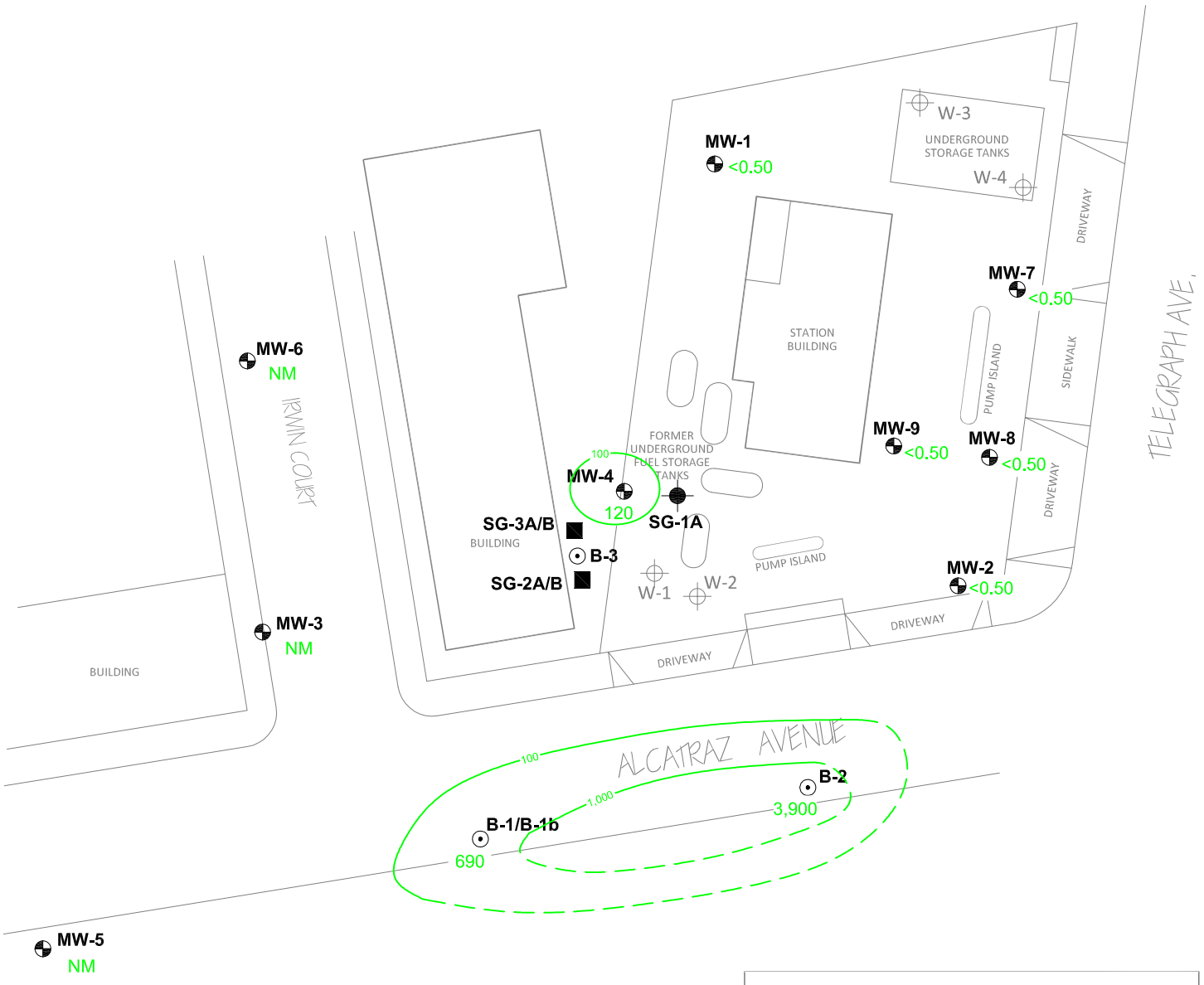
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
4820 Business Center Dr., Ste. 110
Fairfield, California 94534
Project No.: 06-88-602 Date: 2/12/2015

Station #374
6407 Telegraph Ave.
Oakland, California

GRO Isoconcentration Map

Drawing
3



N

0 40 80

SCALE (ft)

LEGEND

- Monitoring Well Location
- Soil Boring Location
- Soil Vapor Probe Location
- Tank Pit Monitoring Well Location
- Soil Boring Nexted Probe Locations - 3 feet & 5 feet
- 120 Benzene Concentration in µg/L
- NM Not Measured
- <0.50 Not Detected
- 100 Benzene Isoconcentration Contour

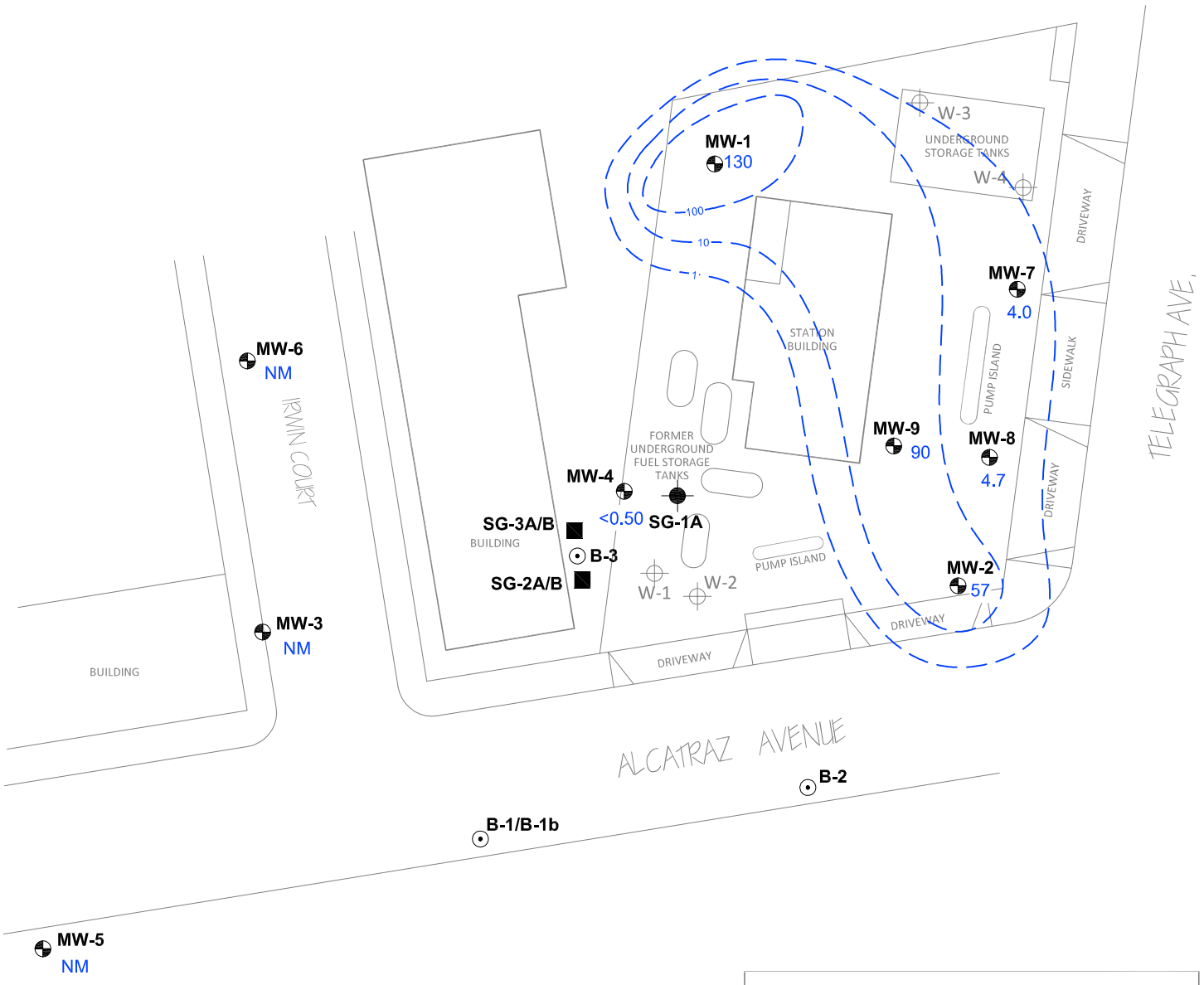
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
4820 Business Center Dr., Ste. 110
Fairfield, California 94534
Project No.: 06-88-602 Date: 2/12/2015

Station #374
6407 Telegraph Ave.
Oakland, California

Benzene Isoconcentration Map

Drawing 4



LEGEND

- Monitoring Well Location
- Soil Boring Location
- Soil Vapor Probe Location
- Tank Pit Monitoring Well Location
- Soil Boring Nexted Probe Locations - 3 feet & 5 feet
- 130 — MTBE Concentration in µg/L
- NM — Not Measured
- <0.50 — Not Detected
- 100 — MTBE Isoconcentration Contour

N

0 40 80

SCALE (ft)

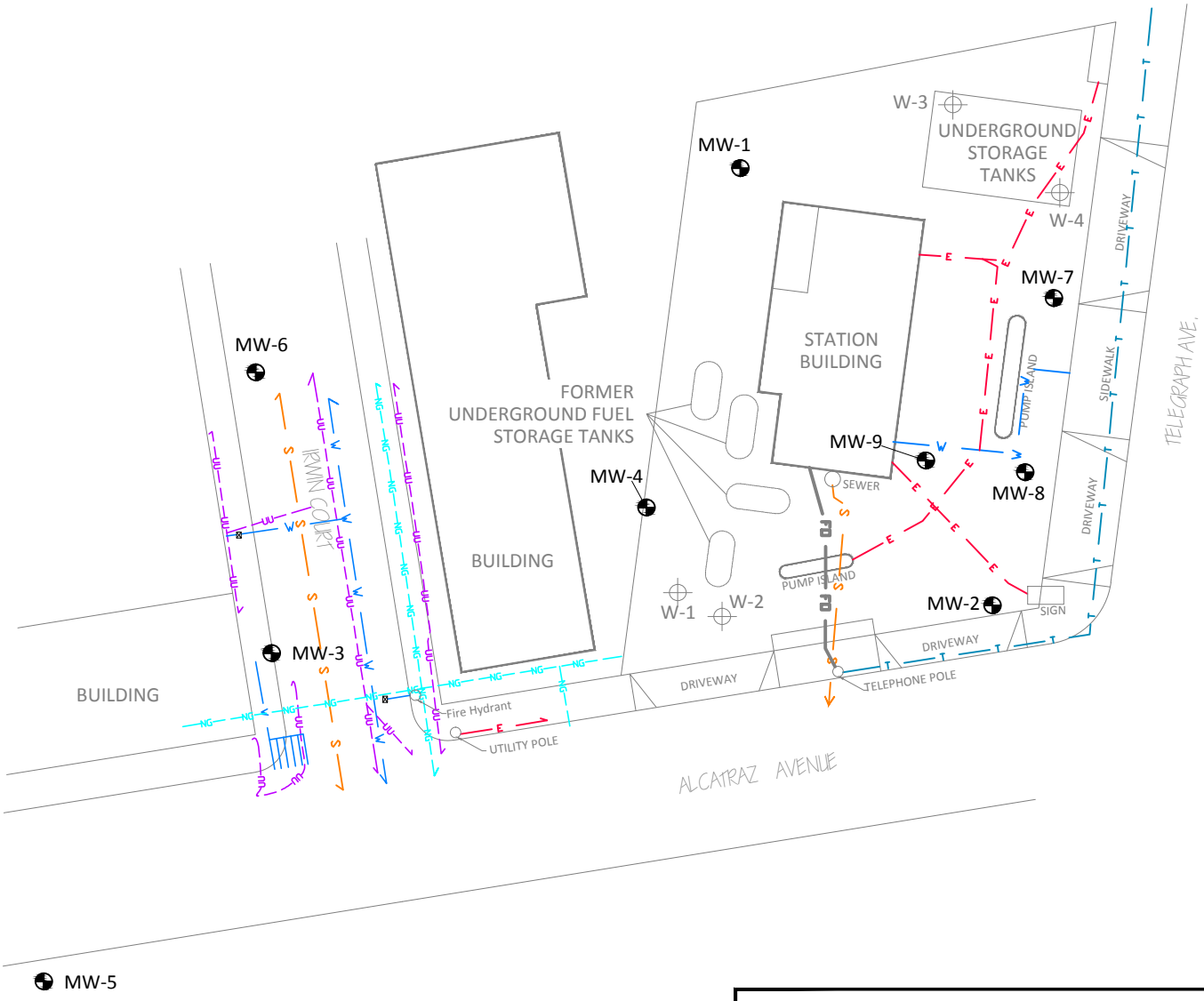
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
4820 Business Center Dr., Ste. 110
Fairfield, California 94534
Project No.: 06-88-602 Date: 2/12/2015

Station #374
6407 Telegraph Ave.
Oakland, California

MTBE Isoconcentration Map

Drawing
5



LEGEND

- Monitoring Well Location
- Tank Pit Monitoring Well Location
- Electrical Line
- Natural Gas Line
- Sanitary Sewer Line
- Undifferentiated Utility Line
- Water Line
- Telephone Line
- Communication Line

N

0 40 80

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
4820 Business Center Drive, Suite 110
Fairfield, CA 94534
Project No.: 06-88-602 Date: 3/21/2014

Station No. 374
6407 Telegraph Ave.
Oakland, California

Site Vicinity and Underground Utility Infrastructure

Drawing
6

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	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 ft in depth. 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 ft. 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 ft), 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 groundwater flow is from east to west or from the Hayward Fault to the San Francisco Bay. Groundwater 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.	None	NA
	Site	The Site elevation is approximately 163 ft above sea level. The water table fluctuates seasonally and over time. Historically, depth-to-water measurements have ranged from approximately 5 to 11 ft bgs). During First Quarter 2013, the average depth to groundwater in onsite wells MW-1, MW-2, MW-4, and MW-7 through MW-9 was approximately 5.5 ft. Groundwater flow direction during the First Quarter 2013 monitoring event on February 14, 2013 was to the southwest at a gradient of approximately 0.04 ft/ft.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology (continued)	Site (continued)	The Site is typically underlain by silty and sandy clays with intervals consisting of sands and gravels to a maximum explored depth of approximately 28 ft bgs. The boring log for MW-7 indicates that intermittent layers of silty clay and sandy clay are present throughout the entire boring with gravels appearing at approximately eight ft bgs and sand appearing at approximately 18 ft 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 ft 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 ft bgs and sand appearing at approximately 27 ft bgs. The boring log for MW-4 indicates that silty clay is present from approximately ground surface to 13 ft bgs. Sandy gravel with some silt appears at 13 ft bgs and transitions into silty clay with some sand and gravel at approximately 22 ft bgs.		
Surface Water Bodies		The nearest surface water body is an unnamed creek that terminates 3,400 ft east of the Site (Closure Solutions, 2012). 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 San Francisco Bay is located approximately 2 miles west of the Site.	None	NA
Nearby Wells		A Sensitive Receptor Survey was carried out in February 2011 by Closure Solutions to identify the presence of water wells within a ½-mile radius of the Site. According to Closure Solutions' report, 2 wells were identified within a ½-mile radius in the downgradient and crossgradient groundwater flow direction and its intended use is unknown. A Sensitive Survey will be conducted by Broadbent to verify the water wells found by Closure Solutions and to determine Ecological Receptors and nearest schools and hospitals.	Yes	Conduct Survey

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Constituents of Concern	Light-Non Aqueous Phase Liquids (LNAPL)	LNAPL has not been observed at this Site in monitoring wells. However, LNAPL was observed during the soil investigation conducted by Applied Geosystems (AGS) in 1988. One inch of LNAPL was observed in a grab groundwater sample collected from boring B-1. Additionally, product sheen was also observed in grab groundwater samples from borings B-2 and B-4. Product sheen was also encountered in observation wells W-1 and W-2 in the former UST pit during the UST removal and excavation in June 1988 (AGS, 1988).	None	NA
	Gasoline Range Organics (GRO)	Concentrations of GRO have historically been detected in four of the nine Site monitoring wells (MW-4 and MW-7 through MW-9). In wells MW-7 and MW-9, only low and intermittent concentrations of GRO have been historically detected. Historical concentrations of GRO have been reported in well MW-4 and have consistently been detected since 2000. No GRO has been detected in offsite wells MW-3, MW-5, and MW-6. Onsite wells MW-1 and MW-2 have historically have had detections of GRO concentrations but within the last five years it has been reported as non-detect. Drawing 3 presents isoconcentration contours for the most recent groundwater monitoring and sampling event (February 2015) and the soil investigation during December 2014 and January 2015.	None	NA
	Benzene	Benzene has historically been detected in all wells except for MW-1, MW-3, MW-5, and MW-6. However, well MW-2 had sporadic detections sat low concentrations of no greater than 3 µg/L. The highest onsite concentration of benzene was detected in well MW-4 at 5,100 µg/L in June 2000. Maximum benzene concentrations have consistently been detected in MW-4. MW-8 had a high detection of benzene during the 1Q13 event at 350 µg/L, but was detected at 1.5 µg/L the following sample event. Drawing 4 represents isoconcentration contours of benzene in groundwater during the most recent groundwater monitoring event (1Q15), and soil investigation.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Constituents of Concern (continued)	MTBE	Methyl tert butyl ether (MTBE) has been historically detected in all wells. However, in wells MW-3, MW-6, MW-7 only low concentrations have been detected. The highest historic concentration of MTBE was reported in well MW-1 in March 2001 at a concentration of 2,710 µg/L. Drawing 5 represents isoconcentration contours of MTBE in groundwater during the most recent groundwater monitoring event (1Q15). The plume is extensive across the Site. MW-1 continues to exhibit the highest concentrations of MTBE. However, MTBE is not present in any of the downgradient wells or in the soil borings. MTBE concentrations have consistently been in decline since 2001.	None	NA
Potential Sources	Onsite	The main sources of contamination onsite were from the former UST's and pump islands located in the southeastern area of the site. In February 1988, a leak was detected in the vapor/vent line of the unleaded system during annual tank testing. The results of a April 1988 limited environmental site assessment conducted by AGS which included four soil borings near the USTs indicated soil and groundwater contamination with LNAPL and sheen being observed in the groundwater grab sample collected from the soil boring locations. Between June 7 and 10, 1988, the four gasoline USTs were removed from the Site and on September 21, 1996, two pump islands along with its associated underground product lines were removed. Removal of UST's and pump islands was to control and mitigate the spread of contamination. Subsequent soil remediation and soil investigations determined residual hydrocarbon contamination still exists around the former UST and pump islands locations. A decreasing trend in hydrocarbon residuals in the groundwater can be seen in all wells however MW-4 still contains the highest concentration of GRO. The Site is an active service station. Current USTs and dispensers are present. Data	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Sources (continued)	Onsite (continued)	presented herein does not indicate that an ongoing hydrocarbon release is occurring, since hydrocarbon concentrations have steadily been decreasing since the removal of the former UST's and associated pump islands. The Site monitoring and sampling history indicate that hydrocarbon releases occurred from the former UST location and pump islands, with no additional releases having occurred.		
	Offsite	Diagonally across the site is a former Mobil service station that ceased operation in 1983. A petroleum leak was reported in March 1986 and the four USTs were removed in May 1986. Confirmation soil and groundwater samples were taken during the removal and excavation of the UST's. The site is approximately 120 feet southeast and cross-gradient to ARCO 374. (Resna, 1992). In 2009 a notice of violation from SWRCB which the responsible party has not responded to and is missing the laboratory report of the groundwater sampling that took place. In 2012, a notice of enforcement referral was issued to the San Francisco Bay Regional Water Quality Control Board. No further work has been conducted since the notice of enforcement referral was first issued in 2012. This site may be a potential secondary source of contamination but due to the groundwater direction of the Site and its crossgradient proximity to Arco 374, it is unlikely impacting the Site.	None	NA
Nature and Extent of Environmental Impacts	Extent in Soil	Soil appears defined at the Site. Upon completion of an offsite soil boring investigation conducted by Broadbent in November 2010, moderate concentrations of GRO, benzene, toluene, ethylbenzene, and total xylenes (BTEX) are present within the soil at 8.0 to 9.5 ft bgs in the east pump island investigation area. Hydrocarbon concentrations diminish in concentration with depth and horizontal distance from this east pump island. One exception to this observation is the MW-8 soil sample at 11 ft bgs where the GRO concentration was 1,400 mg/kg. The soil	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts (continued)	Extent in Soil (continued)	analytical data demonstrates that the soil petroleum hydrocarbon impact around the east pump island is defined vertically at 12.5 ft bgs, to levels below residential Regional Water Quality Control board ESLs for shallow soil scenarios where the groundwater is a potential drinking water resource. The soil analytical data also demonstrates that the petroleum hydrocarbon impact in soil around the east pump island is sufficiently defined laterally. The soil data from this investigation are consistent with the elevated GRO concentrations in soil samples collected during Broadbent's November 11, 2009 *Soil and Groundwater Investigation* where soil boring B-15 contained 1,400 mg/kg at 4.5 ft bgs and B-13 contained 1,800 mg/kg at 8.5 ft bgs. These observed concentrations are indicative of a point release from the former product piping that spreads outward when encountering a more permeable (sandy, gravelly) layer. The data also is consistent with the previous high concentration of 6,500 mg/kg GRO detected in product line sample PL-3 5' collected on December 4, 2008 during product line replacement and fuel dispenser upgrades (Broadbent, 2009). Low concentrations of MTBE were detected in shallow soil samples collected from MW-8 and MW-9. Six of the 18 soil samples detected MTBE concentrations and none of the 18 detected TBA concentrations exceeded the residential ESLs for shallow soil scenarios where the groundwater is a potential drinking water resource. Two of the six MTBE samples (MW-8-14.5 and MW-9-15.5) were collected within the capillary fringe and MTBE concentrations are likely from a groundwater source. Neither MTBE nor TBA concentrations in soil exceeded the residential ESLs for shallow soil where the ground water is not a potential drinking water resource.		

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts (continued)	Extent in Soil (continued)	In December 2014 and January 2015, Broadbent conducted an offsite soil investigation across the Site on Alcatraz Avenue and at the neighboring apartment complex to determine if residual hydrocarbon concentrations have migrated from the Site. GRO, benzene, Ethylbenzene, xylenes and naphthalene were all detected in soil boring B-1b at 3 ft bgs. However, all were detected below 1.0 mg/kg, while GRO was detected at 1.6 mg/kg. No other analytes were detected during the investigation.		
	Extent in Shallow Groundwater	The groundwater monitoring network at the Site include nine wells (MW-1 thru MW-9); upgradient wells (MW-1, MW-2, MW-7 thru MW-9); and downgradient wells (MW-3 thru MW-6). Isoconcentration maps for the most recent groundwater monitoring and sampling event (1Q15) for GRO, benzene, and MTBE are included as Drawings 3 through 5 respectively. Based on these drawing s and the *On-site Soil and Groundwater Investigation Report* (Broadbent, 2011), the extent of petroleum compounds is well defined in all directions, and is predominately limited around the former UST's and southern pump island area with the exception of MTBE plume which encompasses a bigger area. Additionally, free product is not present at this Site, and dissolved petroleum concentrations are decreasing. The data is adequate for understanding the CSM.	Yes	Conduct Downgradient Assessment
	Extent in Deeper Groundwater	Soil Borings B-1 through B-5 (MW-1 through MW-5) were all advanced to 27 ft bgs and borings B-16 to B-18 (MW-6 through MW-9) and soil boring B-19 were advanced to 20 ft bgs. Based on the results of these boring logs and the *On-site Soil and Groundwater Investigation Report (Broadbent, 2011)*, petroleum compounds in groundwater are vertically defined within the first-encountered groundwater between 7 to 12 ft bgs. The deeper groundwater zone was not encountered nor was petroleum constituents were detected or observed deeper than 15 ft bgs.	None	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Nature and Extent of Environmental Impacts (continued)	Extent in Deeper Groundwater (continued)	No soil borings drilled during the December 2014/January 2015 soil investigation, were deeper than 15 ft-bgs.		
	Extent in Soil Vapor	Two soil vapor assessments have been performed at the Site. The first was conducted on December 18, 2013 for SG-1A, located in the vicinity of MW-4 onsite. No significant irregularities were reported during the analysis of the soil gas samples. The results from this investigation are summarized in Appendix G. The apartments located west of the Site are downgradient to the former UST locations. Two proposed soil vapor probes locations, nested (SG-2A/B & SG-3) in between the apartment complex and the Site (Drawing 1) will assess the potential risk of soil vapor intrusion from the Site. An evaluation of the apartment complex foundation will also be conducted in order to assist in determining the risk involved from soil vapor intrusion. Based on the results from the soil vapor investigation conducted on February 25, 2015, GRO and total xylenes were detected in SG-1A and SG-2A respectively. Detected concentrations of GRO and total xylenes were below their respective ESL reporting limits. Soil gas was not collected from SG-3 due to water in well box. No other residual hydrocarbon concentrations were detected during the investigation.	Yes	Conduct Soil Vapor Investigation Near Recent Borings
Migration Pathways	Potential Conduits	Historic maps of underground utilities including water, sewer line and communication are included as Drawing 6. The majority of the mapped underground utilities are believed to be relatively shallow (less than three feet bgs). Exception is the mapped sewer pipeline that is located within the area where the release occurred. Since depth to groundwater is typically measured as high as 6 feet bgs, there is a potential that the deeper sewer system conduits may be acting as preferential pathways for contaminant migration.	No	NA

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Receptors	Onsite	No onsite water supply wells or surface water exists. The only potential onsite receptor would be onsite workers exposed to gasoline vapors. However, the exposure from current fueling operations represents a greater risk than any associated with potential groundwater or soil or soil vapor exposure (SWCRB, 2012).		
	Offsite	As discussed above, the apartments west of the site are located down gradient of the Site and are considered a potential offsite receptor. This receptor is in close proximity to the former USTs with MW-4 still containing high concentrations of GRO and Benzene. Although the concentrations of GRO and Benzene in groundwater on the offsite wells MW-4, MW-5, and MW-6 were reported as non-detect, there is a possibility that the plume could be beneath the apartments and terminate there (as seen in Drawing 4 and Drawing 5). Another potential offsite receptor is the apartment complex across Alcatraz Avenue. The most recent soil investigation indicated that the contamination plume has migrated downgradient across the street with high groundwater concentrations of GRO and benzene in soil borings B-1 and B-2. As mentioned above, a Sensitive Receptor Survey was carried out in February 2011 by Closure Solutions to identify the presence of water wells within a ½-mile radius of the Site. According to Closure Solutions' report, two wells were identified within a ½-mile radius in the downgradient and crossgradient groundwater flow direction and its intended use is unknown. Closure Solution was unable to locate these wells and were deemed not in use according to their Survey. The nearest natural drainage is Claremont Creek, located approximately 1.2 miles northwest of the Site. Claremont Creek flows generally east to west near the Site vicinity. The SRS does	Yes	Offsite Soil Vapor Assessment near recent borings

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Potential Receptors (continued)	Offsite (continued)	not contain Ecological receptors and nearby schools and hospitals. Broadbent proposes to conduct an updated SRS to fill in these data gaps.		

TABLE 1

CONCEPTUAL SITE MODEL
Atlantic Richfield Company Station 374
6407 Telegraph Ave
Oakland, California

Notes:
bgs = below ground surface
BTEX = benzene, toluene, ethylbenzene, xylenes
DRO = Diesel Range Organics
ESL = Environmental Screen Levels
ft = foot
ft/ft = foot per foot
GRO = Gasoline Range Organics
LNAPL = Light-Non Aqueous Phase Liquid
mg/kg = milligrams per kilogram
MTBE = Methyl tert-butyl Ether
NA = Not Applicable
UST = Underground Storage Tank
µg/L = micrograms per liter
µg/m³ = micrograms per cubic meter

Table 2
Soil Analytical Results
December 2014 and January 2015
ARCO Station No. 374
6407 Telegraph Avenue, Oakland, California

Soil Boring Indentification	Soil Sample Depth (feet bgs)	Date Collected	GRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes* (mg/kg)	MTBE (mg/kg)	Naphthalene (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	EDB (mg/kg)	Ethanol (mg/kg)
B-1B	3	1/16/2015	1.6	0.0043	<0.0010	0.0020	0.0050	<0.0020	0.050	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
B-1B	7	1/16/2015	0.95	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
B-2	3-3.5	12/4/2014	<0.39	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
B-2	8-8.5	12/4/2014	<0.38	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
B-3	3-3.5	12/10/2014	<0.40	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
B-3	5-5.5	12/10/2014	<0.40	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.050	<0.0020	<0.0010	<0.20
LTCP Criteria - 0 to 5 feet bgs			NA	**8.2**	NA	**89**	NA	NA	**45**	NA	NA	NA	NA	NA	NA
LTCP Criteria - 5 to 10 feet bgs			NA	**12**	NA	**134**	NA	NA	**45**	NA	NA	NA	NA	NA	NA
LTCP Criteria - Utility Worker			NA	**14**	NA	**314**	NA	NA	**219**	NA	NA	NA	NA	NA	NA

Notes:

feet bgs = feet below ground surface
mg/kg= milligrams per kilogram
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether
ETBE = ethyl tert-butyl alcohol
TAME = tert-amyl methyl ether
TBA = tert butyl alcohol
DIPE = di isopropyl ether
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromoethane

<X.XX = not detected above reporting limit of X.XX mg/kg
NA = not analyzed
LTCP = Low Threat UST Closure Policy, California Stae Water Resources Control Board (SWRCB), August 17, 2012
LTCP Criteria listed in Table 1, page 8 of the LTCP for a commercial/industrial exposure scenario

Table 3
Groundwater Analytical Results
December 2014 and January 2015
ARCO Station No. 374
6407 Telegraph Avenue, Oakland, California

Soil Boring Identification	Date Collected	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene µg/L)	Total Xylenes* (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
B-1B	1/16/2015	8,800	690	170	630	1,200	<10	52	<10	<10	<10	<10	<10	<3,000
B-2	12/4/2014	24,000	3,900	380	3,600	1,300	<50	1,900	<50	<50	<50	<50	<50	<15,000
B-3	12/10/2014	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<150
ESLs - DW		**100**	**1.0**	**40**	**30**	**20**	**5.0**	**6.1**	NE	NE	NE	**0.5**	**0.05**	NE
ESLs - NDW		**210**	**46**	**130**	**43**	**100**	**1,800**	**24**	NE	NE	NE	**200**	**150**	NE

Notes:

feet bgs = feet below ground surface
µg/L= micrograms per liter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether
ETBE = ethyl tert-butyl alcohol
TAME = tert-amyl methyl ether
TBA = tert butyl alcohol
DIPE = di isopropyl ether
1,2-DCA = 1,2-dichloroethane
EDB = 1,2-dibromoethane

<X.XX = not detected above reporting limit of X.XX µg/L
NE = ESL not established
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013. Commercial/Industrical exposure scenario; Table E-2
ESL - DW = Environmental Screening Levels (ESLs), shallow soils (<3 meters bgs), groundwater is a current potential source of drinking water for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008)
ESL - NDW = Environmental Screening Levels (ESLs), shallow soils (<3 meters bgs), groundwater is NOT a current potential source of drinking water for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008)

Table 4
Soil Vapor Analytical Results
February 25, 2015
ARCO Station No. 374
6407 Telegraph Avenue, Oakland, California

Soil Vapor Probe Identification	Probe Sample Depth (feet bgs)	Date Collected	GRO ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m3$)	Total Xylenes* ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
SG-1A	2.5-3	2/25/2015	5,300	<13	<15	<17	67	<14	<21	4.2	0.0018	17.0
SG-2A	3-3.5	2/25/2015	5,200	<13	<15	<17	53	<14	<21	6.8	0.0015	14.0
ESLs			**2,500,000**	**420**	**1,300,000**	**4,900**	**440,000**	**47,000**	**360**	NA	NA	NA

Notes:

feet bgs = feet below ground surface
$\mu g/m^3$= micrograms per cubic meter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether

<X.XX = not detected above reporting limit of X.XX $\mu g/m^3$
NA = not analyzed
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013. Commercial/Industrical exposure scenario; Table E-2

APPENDIX A

Historic Site Soil and Groundwater Data

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-1															
6/20/2000	--	158.91	7.00	27.00	6.86	152.05	--	--	--	--	--	--	--	--	
9/28/2000	--		7.00	27.00	7.50	151.41	--	--	--	--	--	--	--	--	
12/17/2000	--		7.00	27.00	7.49	151.42	--	--	--	--	--	--	--	--	
3/23/2001	--		7.00	27.00	5.90	153.01	<50	<0.5	<0.5	<0.5	<0.5	***2,710***	--	--	
6/21/2001	--		7.00	27.00	7.45	151.46	--	--	--	--	--	--	--	--	
9/23/2001	--		7.00	27.00	8.46	150.45	--	--	--	--	--	--	--	--	
12/31/2001	--		7.00	27.00	5.50	153.41	--	--	--	--	--	--	--	--	
3/21/2002	--		7.00	27.00	4.71	154.20	***<5,000***	***<50***	*<50*	***<50***	*<50*	***2,000***	--	--	
4/17/2002	--		7.00	27.00	5.54	153.37	--	--	--	--	--	--	--	--	
8/12/2002	--		7.00	27.00	7.77	151.14	--	--	--	--	--	--	--	--	
12/6/2002	--		7.00	27.00	7.65	151.26	--	--	--	--	--	--	--	--	
1/29/2003	--		7.00	27.00	5.88	153.03	--	--	--	--	--	--	--	--	b
5/23/2003	--		7.00	27.00	5.62	153.29	***<10,000***	***<100***	*<100*	***<100***	*<100*	*1,600*	1.3	7.1	
9/4/2003	--		7.00	27.00	7.85	151.06	--	--	--	--	--	--	--	--	
11/20/2003	P		7.00	27.00	8.17	150.74	***1,600***	*<10*	<10	<10	<10	*1,500*	1.7	6.7	
02/02/2004	P	164.57	7.00	27.00	6.71	157.86	--	--	--	--	--	--	1.0	--	f
05/14/2004	P		7.00	27.00	7.08	157.49	***<2,500***	*<25*	<25	<25	*<25*	*1,200*	1.4	6.6	
09/02/2004	P		7.00	27.00	8.12	156.45	***580***	*<5.0*	<5.0	<5.0	<5.0	*660*	3.8	6.7	
11/04/2004	P		7.00	27.00	7.38	157.19	***1,700***	*<10*	<10	<10	<10	*580*	6.0	6.5	
02/08/2005	P		7.00	27.00	6.60	157.97	***<1,000***	*<10*	<10	<10	<10	*610*	0.71	6.5	
05/09/2005	P		7.00	27.00	6.84	157.73	***540***	*<5.0*	<5.0	<5.0	5.5	*620*	3.12	6.6	e
08/11/2005	P		7.00	27.00	7.36	157.21	***540***	*<2.5*	<2.5	<2.5	4.0	*390*	0.8	6.6	
11/18/2005	P		7.00	27.00	8.02	156.55	***350***	*<2.5*	<2.5	<2.5	<2.5	*340*	2.6	6.7	e
02/16/2006	P		7.00	27.00	6.44	158.13	***350***	*<2.5*	<2.5	<2.5	<2.5	*340*	1.6	6.7	e
5/30/2006	P		7.00	27.00	6.87	157.70	***270***	*<2.5*	<2.5	<2.5	<2.5	*420*	4.73	6.4	
8/24/2006	P		7.00	27.00	7.75	156.82	95	*<5.0*	<5.0	<5.0	<5.0	*180*	0.65	6.9	
11/1/2006	P		7.00	27.00	8.28	156.29	*120*	*<5.0*	<5.0	<5.0	<5.0	*220*	1.65	7.07	
2/7/2007	NP		7.00	27.00	7.40	157.17	*120*	*<5.0*	<5.0	<5.0	<5.0	*190*	1.88	7.45	e

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF SOIL SAMPLES
ARCO Station 374
6407 Telegraph Avenue
Oakland, California
(Page 1 of 2)

Sample Number	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
April 1988 - Limited Environmental Site Assessment					
S-05-B1	165	NA	NA	NA	NA
S-10-B1	48	NA	NA	NA	NA
S-05-B2	260	NA	NA	NA	NA
S-8.5-B2	60	NA	NA	NA	NA
S-05-B3	64	NA	NA	NA	NA
S-09-B3	62	NA	NA	NA	NA
S-05-B4	389	NA	NA	NA	NA
S-8.5-B4	930	NA	NA	NA	NA
June 1988 - Excavation and Removal of USTs					
S-11-T1A	399	14.7	20.0	20.5	91.9
S-11-T1B	8	2.57	0.74	0.39	2.75
S-12-T2A	4	0.35	0.10	0.38	0.70
S-12-T2B	75	0.91	1.77	3.61	11.92
S-12-T3A	4	2.54	0.13	<0.05	0.13
S-12-T3B	<2	<0.05	<0.05	<0.05	<0.05
S-12-T4A	1,097	16.3	34.5	81.6	188.2
S-12-T4A2**	795	23.1	24.9	67.1	130.9
S-12-T4B	3	0.76	<0.05	<0.05	<0.05
S-13-PIT	3.6	0.738	0.038	0.154	0.566
July 1989 - Limited Subsurface Investigation					
S-3.5-B1/MW-1	<2	<0.05	<0.05	<0.05	<0.05
S-8.5-B1/MW-1	60	0.66	2.9	0.99	5.2
S-3.5-B2/MW-2	<2	<0.05	<0.05	<0.05	<0.05
S-13.5-B2/MW-2	<2	<0.05	<0.05	<0.05	<0.05
S-18.5-B2/MW-2	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B3/MW-3	<2	<0.05	<0.05	<0.05	<0.05
S-3.5-B4/MW-4	<2	<0.05	<0.05	<0.05	<0.05
S-13.5-B4/MW-4	<2	<0.05	<0.05	<0.05	<0.05
S-18.5-B4/MW-4	<2	<0.05	<0.05	<0.05	<0.05
S-0731-B4 (1a,b,c,d)*	21	<0.05	<0.05	<0.05	0.37
April 1, 1992 - Offsite Investigation					
S-5.5-B5	<1.0	<0.005	<0.005	<0.005	<0.005
S-14.5-B5	<1.0	<0.005	<0.005	<0.005	<0.005
S-5.5-B6	<1.0	<0.005	<0.005	<0.005	<0.005

See notes on Page 2 of 2.

TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF SOIL SAMPLES
ARCO Station 374
6407 Telegraph Avenue
Oakland, California
(Page 2 of 2)

Results are in parts per million (ppm).
TPHg: Total petroleum hydrocarbons as gasoline.
<: Below the reporting limits of the analytical method.
*: Signifies composite sample following aeration.
**: Resample area near sample T4A following additional excavation.
NA: Not analyzed.

Sample designations:

S-5.5-B6
- Boring number
- Sample depth in feet
- Soil sample

S-12-T4B
- Tank number and location
- Sample depth in feet
- Soil sample

Table 1
Soil Analytical Data
Product Line and Dispenser Excavation
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and Total Lead)

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Sample ID	Date Sampled	Sample Depth (feet)	TPPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Xylenes (ppm)	Total Lead (ppm)
Product Lines								
TR-A-1	9/21/95	3	NA	NA	NA	NA	NA	15
TR-A-2	9/21/95	3	<1	<0.0050	<0.0050	<0.0050	<0.0050	NA
TR-A-3	9/21/95	3	<1	<0.0050	<0.0050	<0.0050	<0.0050	NA
TR-A-8	9/21/95	3	65	<0.025	0.15	0.096	6.7	NA
TR-A-9	9/21/95	3	<1	<0.0050	<0.0050	<0.0050	<0.0050	NA
TR-A-10	9/21/95	3	<1	<0.0050	<0.0050	<0.0050	<0.0050	NA
TR-A-11	9/21/95	3	1.9	<0.0050	<0.0050	0.0050	<0.0050	NA
TR-A-12	9/21/95	3	6.2	<0.0050	<0.0050	0.0067	<0.0050	NA
TR-A-13	9/21/95	3	48	0.30	2.2	0.53	3.6	NA
Product Dispensers								
TR-A-4	9/21/95	3	<1	<0.0050	<0.0050	<0.0050	<0.0050	NA
TR-A-6	9/21/95	3	140	<0.50	1.1	0.80	1.5	NA
TR-A-14	9/21/95	3	89	2.1	8.5	1.7	9.4	NA
TR-A-15	9/21/95	3	19	0.0089	0.37	0.045	1.9	NA

ppm = Parts per million
NA = Not analyzed
< = Indicates the concentration is below the detection limit.

Table 1. Soil Sampling Analytical Data
Atlantic Richfield Company Station #374
6407 Telegraph Avenue, Oakland, California

Soil Sample ID	Sampling Depth (feet bgs)	Sampling Date	Laboratory Analytical Results (mg/kg)													
			GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Ethanol	1,2 DCA	EDB	Lead
D1-2.5'	2.5	12/4/2008	**120**	**0.15**	<0.10	**1.8**	**9.7**	<0.10	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**4.76**
D2-2.5'	2.5	12/4/2008	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.0020	<0.0020	<0.0020	<0.10	<0.0010	<0.0010	**5.50**
D3-2.5'	2.5	12/4/2008	**17**	**0.46**	<0.10	**0.91**	**1.8**	<0.10	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**11.70**
D4-2.5'	2.5	12/4/2008	**1,500**	**3.6**	**0.12**	**3.6**	**2.9**	<0.10	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**8.65**
D-4 5'	5.0	12/9/2008	**5,300**	**19**	**1.1**	**23**	**31**	<0.50	<5.0	<1.0	<1.0	<1.0	<50	<0.50	<0.50	**11.2**
D5-2.5'	2.5	12/4/2008	**2.9**	<0.0010	**0.0019**	<0.0010	**0.0021**	**0.0038**	<0.010	<0.0020	<0.0020	<0.0020	<0.10	<0.0010	<0.0010	**5.38**
D6-2.5'	2.5	12/4/2008	**1.7**	**0.0054**	**0.015**	**0.0037**	**0.021**	**0.0055**	<0.010	<0.0020	<0.0020	<0.0020	**0.19**	<0.0010	<0.0010	**5.81**
PL1-3'	3.0	12/4/2008	**8.0**	<0.0010	<0.0010	<0.0010	<0.0010	**0.046**	**0.019**	<0.0020	<0.0020	**0.0027**	<0.10	<0.0010	<0.0010	**5.49**
PL2-3'	3.0	12/4/2008	<0.50	**0.0059**	<0.0010	<0.0010	<0.0010	<0.0010	<0.10	<0.0020	<0.0020	<0.0020	<0.10	<0.0010	<0.0010	**6.03**
PL3-3'	3.0	12/4/2008	**6,500**	**18**	**0.74**	**25**	**12**	<0.20	<2.0	<0.40	<0.40	<0.40	<20	<0.20	<0.20	**12.20**
PL-3 5'	5.0	12/9/2008	**0.78**	**0.035**	<0.0010	**0.019**	**0.0021**	**0.012**	<0.010	<0.0020	<0.0020	<0.0020	<0.10	<0.0010	<0.0010	**5.43**
PL4-3'	3.0	12/4/2008	**26**	<0.10	<0.10	**0.35**	<0.10	**0.16**	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**5.16**
PL5-3'	3.0	12/4/2008	**15**	<0.10	<0.10	**0.36**	**0.10**	<0.10	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**4.89**
Soil Waste Composite 1	NA	12/4/2008	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.0020	<0.0020	<0.0020	<0.10	<0.0010	<0.0010	**5.37**
Soil Waste Composite 2	NA	12/4/2008	77	**0.11**	**0.71**	**0.28**	**0.62**	<0.10	<1.0	<0.20	<0.20	<0.20	<10	<0.10	<0.10	**8.24**

NOTES:

Concentrations detected above laboratory reporting limits are in bold

bgs = Below ground surface

mg/kg = Milligrams per kilogram

NA = Not applicable

GRO = Gasoline Range Organics

MTBE = Methyl Tert-Butyl Ether

TBA = Tert-Butyl Alcohol

DIPE = Di-Isopropyl Ether

ETBE = Ethyl Tert-Butyl Ether

TAME = Tert-Amyl Methyl Ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

Laboratory Analytical Results from On-Site Soil Investigation, 13 November 2008
Atlantic Richfield Company Service Station #374, 6407 Telegraph Avenue, Oakland, California
ACEH Case #RO0000078

Soil Boring Samples
(Concentrations in milligrams per kilogram, mg/kg)

Sample ID	GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	ETBE	TAME	DIPE	1,2-DCA	EDB	TBA	Ethanol
B-11-15	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	0.014	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.010	<0.10
B-12-15.5	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	0.0072	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.011	<0.10
Waste Comp.	NA	<0.0010	<0.0010	<0.0010	<0.0010	0.0084	<0.0020	<0.0020	<0.0020	NA	NA	<0.010	NA

Notes:
GRO: Gasoline Range Organics, hydrocarbon chain lengths C6-C12
MTBE: Methyl-tertiary Butyl Ether
ETBE: Ethyl Tert-Butyl Ether
TAME: Tert-Amyl Methyl Ether
DIPE: Di-Isopropyl Ether
1,2-DCA: 1,2-Dichloroethane
EDB: 1,2-Dibromomethane
TBA: Tert-Butyl Alcohol
<: Analyte not detected above the laboratory reporting limit given
NA: Analysis not requested or performed

Laboratory Analytical Results from On-Site Soil & Ground-Water Investigation, 21 September 2009
Atlantic Richfield Company Service Station #374, 6407 Telegraph Avenue, Oakland, California
ACEH Case #RO0000078

Soil Boring Samples
(Concentrations in milligrams per kilogram, mg/kg)

Sample ID	GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	ETBE	TAME	DIPE	1,2-DCA	EDB	TBA	Ethanol
B-13 4.5'	1.7	*0.048*	0.0017	0.036	0.019	*0.024*	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.052	<0.10
B-13 6.5'	67	***0.38***	<0.10	0.82	1.8	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<1.0	<10
B-13 8.5'	***1,800***	***8.2***	***71***	***32***	***190***	<1.0	<2.0	<2.0	<2.0	<1.0	<1.0	<10	<100
B-14 4.5'	<0.50	0.0018	<0.0010	<0.0010	<0.0010	0.012	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.014	<0.10
B-14 6.5'	0.73	0.011	<0.0010	0.0023	<0.0010	*0.025*	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	0.031	<0.10
B-14 8.5'	***390***	***0.56***	<0.10	***6.3***	0.70	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<1.0	<10
B-15 4.5'	***1,400***	***0.87***	<0.10	***4.3***	***3.0***	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<1.0	<10
B-15 6.5'	***170***	***0.91***	<0.10	***2.8***	***7.5***	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<1.0	<10
B-15 8.5'	***940***	***2.2***	<1.0	***13***	***52***	<1.0	<2.0	<2.0	<2.0	<1.0	<1.0	<10	<100
ESL - DW	83	0.044	2.9	2.3	2.3	0.023	NE	NE	NE	0.0045	0.0033	0.075	NE
ESL - NDW	100	0.12	9.3	2.3	11	8.4	NE	NE	NE	0.22	0.019	100	NE

Ground-Water Grab Sample
(Concentrations in micrograms per Liter, µg/L)

Sample ID	GRO	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	ETBE	TAME	DIPE	1,2-DCA	EDB	TBA	Ethanol
B-15W	***19,000***	***3,700***	*54*	***840***	***1,600***	*250*	<20	<20	<20	<20	<20	<400	<12,000
ESL - DW	100	1.0	40	30	20	5.0	NE	NE	NE	0.5	0.05	12	NE
ESL - NDW	210	46	130	43	100	1,800	NE	NE	NE	200	150	18,000	NE

Notes for both tables:

GRO: Gasoline Range Organics, hydrocarbon chain lengths C6-C12
MTBE: Methyl-tertiary Butyl Ether
ETBE: Ethyl Tert-Butyl Ether
TAME: Tert-Amyl Methyl Ether
DIPE: Di-Isopropyl Ether
1,2-DCA: 1,2-Dichloroethane
EDB: 1,2-Dibromomethane
TBA: Tert-Butyl Alcohol
<: Analyte not detected above the laboratory reporting limit given
Conc: Concentration in *Italics* exceeds ESL-DW; Concentration in ***Bold Italics*** exceeds ESL-NDW
ESL - DW: Residential Environmental Screening Level (in soil or ground water, as approp.), for shallow soil, where ground water is potential drinking water resource
ESL - NDW: Residential Environmental Screening Level (in soil or ground water, as approp.), for shallow soil, where ground water is not potential drinking water resource
NE: ESL not established

Table 1. Laboratory Soil Analytic Results from On-Site Investigation, November 22 to 24, 2010

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Boring and Sample Date	Sample ID	Sample Depth (feet)	Concentrations in (mg/Kg)													Comments
			GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE	Ethanol	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW			83	0.044	2.9	2.3	2.3	0.023	NE	0.075	NE	NE	NE	0.0045	0.0033	
ESL - NDW			100	0.12	9.3	2.3	11	8.4	NE	100	NE	NE	NE	0.22	0.019	
B-19																
11/23/2010	B-19-3	3	2.7	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-5	5	2.6	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-6	6	<0.50	0.0053	<0.0010	<0.0010	<0.0010	0.0032	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-8	8	***190***	***0.84***	0.0065	***5.5***	0.044	0.015	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-9.5	9.5	***250***	***0.19***	0.0016	1.4	0.0094	0.011	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-11	11	18	*<0.10*	<0.10	<0.10	<0.10	*<0.10*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	DF
11/23/2010	B-19-12.5	12.5	47	0.018	<0.0010	0.026	0.0025	0.0013	<0.10	0.013	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-14	14	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	B-19-15.5	15.5	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	0.0034	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
MW-7																
11/22/2010	MW-7-3	3	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/22/2010	MW-7-5	5	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/22/2010	MW-7-6	6	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	0.0023	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/24/2010	MW-7-8	8	***650***	0.0047	<0.0010	***9.2***	*9.3*	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/24/2010	MW-7-9.5	9.5	<0.50	<0.0010	<0.0010	0.0014	0.0014	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/24/2010	MW-7-11	11	<0.50	<0.0010	<0.0010	0.0015	0.0017	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/24/2010	MW-7-12.5	12.5	<0.50	<0.0010	<0.0010	0.0018	0.0021	0.0017	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/24/2010	MW-7-14	14	1.2	<0.0010	<0.0010	0.0020	0.0024	0.0080	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
MW-8																
11/22/2010	MW-8-3	3	2.6	0.0099	<0.0010	<0.0010	0.0023	0.011	<0.10	0.013	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/22/2010	MW-8-5	5	1.7	*0.057*	<0.0010	0.028	0.0033	0.0075	<0.10	0.013	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/22/2010	MW-8-6	6	3.2	***0.23***	<0.10	0.75	<0.10	*<0.10*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	
11/23/2010	MW-8-8	8	***510***	***2.7***	<0.10	***8.8***	*5.0*	*0.13*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	
11/23/2010	MW-8-9.5	9.5	***900***	***1.2***	<0.10	***12***	*6.7*	*<0.10*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	
11/23/2010	MW-8-11	11	***1,400***	*<0.10*	<0.10	<0.10	0.11	*<0.10*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	
11/23/2010	MW-8-12.5	12.5	0.93	0.0041	<0.0010	0.0036	0.0018	0.0014	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	MW-8-14.5	14.5	0.57	0.022	<0.0010	0.011	0.0056	*0.036*	<0.10	0.011	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	

Table 1. Laboratory Soil Analytic Results from On-Site Investigation, November 22 to 24, 2010

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Boring and Sample Date	Sample ID	Sample Depth (feet)	Concentrations in (mg/Kg)													Comments
			GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE	Ethanol	TBA	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW			83	0.044	2.9	2.3	2.3	0.023	NE	0.075	NE	NE	NE	0.0045	0.0033	
ESL - NDW			100	0.12	9.3	2.3	11	8.4	NE	100	NE	NE	NE	0.22	0.019	
MW-9																
11/22/2010	MW-9-3	3	5.2	0.0069	<0.0010	0.0012	0.0028	*0.046*	<0.10	0.026	<0.0020	<0.0020	0.0030	<0.0010	<0.0010	
11/22/2010	MW-9-5	5	1.4	0.0024	<0.0010	0.0052	<0.0010	*0.031*	<0.10	0.037	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/22/2010	MW-9-6	6	3.5	0.025	<0.0010	0.060	0.0036	*0.033*	<0.10	0.036	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	MW-9-8	8	***710***	***1.2***	<0.20	***16***	***28***	*<0.20*	<20	*<2.0*	<0.40	<0.40	<0.40	*<0.20*	***<0.20***	
11/23/2010	MW-9-11	11	54	*<0.10*	<0.10	<0.10	<0.10	*<0.10*	<10	*<1.0*	<0.20	<0.20	<0.20	*<0.10*	***<0.10***	DF
11/23/2010	MW-9-12.5	12.5	46	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	0.12	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	MW-9-14	14	9.3	0.0012	<0.0010	0.0013	0.0017	<0.0010	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	
11/23/2010	MW-9-15.5	15.5	<0.50	<0.0010	<0.0010	<0.0010	<0.0010	*0.031*	<0.10	<0.010	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	

SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above specified laboratory reporting limit
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether
TBA = tert-Butyl alcohol
MTBE = Methyl tert-butyl ether
DIPE = Di-isopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = tert-Amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
mg/kg = Milligrams per Kilogram

DF = Reporting limits elevated due to matrix interference

ESL - DW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil Groundwater, Interim Final-November 2007 (Revised May 2008).

ESL - NDW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is NOT a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil Groundwater, Interim Final-November 2007 (Revised May 2008).

NE = ESL not established

NOTES:

GRO (C6-C12) analyzed using EPA method 8015B.
Concentrations in Italics exceeds ESL-DW
Concentrations in Bold Italics exceeds ESL-NDW
Benzene, toluene, ethylbenzene, total xylenes, MTBE, ethanol and TBA analyzed using EPA method 8260B.

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-1 Cont.															
5/8/2007	P	164.57	7.00	27.00	6.50	158.07	***<500***	*<5.0*	<5.0	<5.0	<5.0	*420*	1.21	6.94	
8/8/2007	NP		7.00	27.00	8.17	156.40	82	<0.50	<0.50	<0.50	<0.50	*110*	1.16	7.00	e
11/14/2007	NP		7.00	27.00	8.01	156.56	*170*	*<2.5*	<2.5	<2.5	<2.5	*210*	1.92	6.49	
2/22/2008	P		7.00	27.00	6.00	158.57	<50	<0.50	<0.50	<0.50	<0.50	*250*	2.57	6.65	
5/24/2008	NP		7.00	27.00	7.58	156.99	<50	*<5.0*	<5.0	<5.0	<5.0	*380*	2.28	6.81	
8/21/2008	NP		7.00	27.00	8.60	155.97	<50	*<2.5*	<2.5	<2.5	<2.5	*170*	2.16	6.98	
11/19/2008	NP		7.00	27.00	8.88	155.69	<50	<0.50	<0.50	<0.50	<0.50	*30*	2.12	7.27	
2/23/2009	P		7.00	27.00	6.40	158.17	78	*<2.5*	<2.5	<2.5	<2.5	*240*	2.19	6.03	
5/14/2009	P		7.00	27.00	6.67	157.90	53	<0.50	<0.50	<0.50	<0.50	*200*	1.75	6.69	
8/20/2009	NP		7.00	27.00	8.25	156.32	*150*	*<2.0*	<2.0	<2.0	<2.0	*170*	2.14	6.25	i (GRO)
2/19/2010	P		7.00	27.00	6.07	158.50	<50	<0.50	<0.50	<0.50	<0.50	*170*	0.92	6.66	
8/10/2010	NP		7.00	27.00	7.58	156.99	<50	*<2.5*	<2.5	<2.5	<2.5	*230*	3.86	7.1	
12/16/2010	P	164.45	7.00	27.00	6.64	157.81	<50	*<2.0*	<2.0	<2.0	<2.0	*140*	1.20	6.86	j
2/14/2011	NP		7.00	27.00	7.10	157.35	<50	*<2.5*	<2.5	<2.5	<2.5	*170*	1.18	6.7	
5/20/2011	--		7.00	27.00	6.38	158.07	--	--	--	--	--	--	--	--	
8/15/2011	NP		7.00	27.00	7.24	157.21	<50	*<2.5*	<2.5	<2.5	<2.5	*130*	2.54	6.9	
2/2/2012	P		7.00	27.00	7.32	157.13	<50	<1.0	<1.0	<1.0	<1.0	*66*	1.01	7.1	
MW-2															
6/20/2000	--	157.92	7.00	27.00	7.67	150.25	--	--	--	--	--	--	--	--	
9/28/2000	--		7.00	27.00	8.51	149.41	--	--	--	--	--	--	--	--	
12/17/2000	--		7.00	27.00	8.14	149.78	--	--	--	--	--	--	--	--	
3/23/2001	--		7.00	27.00	7.21	150.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/21/2001	--		7.00	27.00	7.99	149.93	--	--	--	--	--	--	--	--	
9/23/2001	--		7.00	27.00	8.52	149.40	--	--	--	--	--	--	--	--	
12/31/2001	--		7.00	27.00	6.01	151.91	--	--	--	--	--	--	--	--	
3/21/2002	--		7.00	27.00	5.95	151.97	<50	<0.5	<0.5	<0.5	<0.5	*45*	--	--	
4/17/2002	--		7.00	27.00	6.45	151.47	--	--	--	--	--	--	--	--	
8/12/2002	--		7.00	27.00	8.08	149.84	--	--	--	--	--	--	--	--	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-2 Cont.															
12/6/2002	--	157.92	7.00	27.00	8.29	149.63	--	--	--	--	--	--	--	--	
1/29/2003	--		7.00	27.00	7.22	150.70	--	--	--	--	--	--	--	--	b
5/23/2003	--		7.00	27.00	6.85	151.07	<50	<0.50	<0.50	<0.50	<0.50	*55*	1.4	7.2	
9/4/2003	--		7.00	27.00	7.94	149.98	--	--	--	--	--	--	--	--	
11/20/2003	--		7.00	27.00	8.05	149.87	--	--	--	--	--	--	--	--	
02/02/2004	P	163.46	7.00	27.00	7.00	156.46	74	<0.50	<0.50	<0.50	<0.50	*37*	1.1	8.9	f
05/14/2004	--		7.00	27.00	7.97	155.49	--	--	--	--	--	--	--	--	
09/02/2004	P		7.00	27.00	8.19	155.27	***<250***	*<2.5*	<2.5	<2.5	<2.5	*67*	2.7	6.9	
11/04/2004	--		7.00	27.00	7.54	155.92	--	--	--	--	--	--	--	--	
02/08/2005	P		7.00	27.00	6.72	156.74	<50	<0.50	<0.50	<0.50	<0.50	*30*	0.86	6.7	
05/09/2005	--		7.00	27.00	7.16	156.30	--	--	--	--	--	--	--	--	
08/11/2005	P		7.00	27.00	7.85	155.61	<50	<0.50	<0.50	<0.50	<0.50	*35*	1.0	6.6	
11/18/2005	--		7.00	27.00	8.23	155.23	--	--	--	--	--	--	--	--	
02/16/2006	P		7.00	27.00	6.82	156.64	<50	<0.50	<0.50	<0.50	<0.50	*39*	1.3	7.0	
5/30/2006	--		7.00	27.00	7.23	156.23	--	--	--	--	--	--	--	--	
8/24/2006	P		7.00	27.00	8.00	155.46	60	<0.50	<0.50	<0.50	<0.50	*25*	0.90	6.8	
11/1/2006	--		7.00	27.00	8.38	155.08	--	--	--	--	--	--	--	--	
2/7/2007	NP		7.00	27.00	7.88	155.58	<50	0.50	<0.50	<0.50	<0.50	*7.2*	0.94	7.39	
5/8/2007	--		7.00	27.00	7.28	156.18	--	--	--	--	--	--	--	--	
8/8/2007	NP		7.00	27.00	8.38	155.08	88	*3.2*	<0.50	<0.50	<0.50	*7.2*	0.94	7.75	
11/14/2007	--		7.00	27.00	8.10	155.36	--	--	--	--	--	--	--	--	
2/22/2008	P		7.00	27.00	6.75	156.71	<50	<0.50	<0.50	<0.50	<0.50	*24*	2.18	7.02	
5/24/2008	--		7.00	27.00	7.98	155.48	--	--	--	--	--	--	--	--	
8/21/2008	NP		7.00	27.00	8.58	154.88	<50	*2.6*	<0.50	<0.50	<0.50	4.9	2.20	7.11	
11/19/2008	--		7.00	27.00	8.66	154.80	--	--	--	--	--	--	--	--	
2/23/2009	P		7.00	27.00	6.67	156.79	74	1.0	<0.50	<0.50	<0.50	*24*	2.25	6.16	
5/14/2009	--		7.00	27.00	7.02	156.44	--	--	--	--	--	--	--	--	
8/20/2009	NP		7.00	27.00	8.41	155.05	82	*2.4*	<0.50	<0.50	<0.50	*8.4*	2.19	6.37	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-2 Cont.															
2/19/2010	NP	163.46	7.00	27.00	7.36	156.10	<50	<0.50	<0.50	<0.50	<0.50	*22*	0.81	6.90	
8/10/2010	NP		7.00	27.00	7.69	155.77	<50	<0.50	<0.50	<0.50	<0.50	*23*	2.40	7.67	
12/16/2010	P	163.49	7.00	27.00	7.12	156.37	<50	<0.50	<0.50	<0.50	<0.50	*17*	0.69	7.06	j
2/14/2011	NP		7.00	27.00	7.35	156.14	<50	<0.50	<0.50	<0.50	<0.50	*11*	0.87	7.0	
5/20/2011	--		7.00	27.00	7.02	156.47	--	--	--	--	--	--	--	--	
8/15/2011	NP		7.00	27.00	7.62	155.87	<50	<0.50	<0.50	<0.50	<0.50	1.7	1.45	7.1	
2/2/2012	P		7.00	27.00	7.56	155.93	<50	<0.50	<0.50	<0.50	<0.50	1.8	0.85	7.3	
MW-3															
6/20/2000	--	153.64	7.00	27.00	6.42	147.22	<50	<0.5	<0.5	<0.5	<1.0	*<10*	--	--	
9/28/2000	--		7.00	27.00	7.31	146.33	--	--	--	--	--	--	--	--	
12/17/2000	--		7.00	27.00	6.45	147.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/23/2001	--		7.00	27.00	6.01	147.63	--	--	--	--	--	--	--	--	
6/21/2001	--		7.00	27.00	6.80	146.84	*110*	*5.5*	<0.5	5.4	4.1	2.5	--	--	
9/23/2001	--		7.00	27.00	7.32	146.32	--	--	--	--	--	--	--	--	
12/31/2001	--		7.00	27.00	4.48	149.16	<50	<0.5	<0.5	<0.5	<0.5	4.9	--	--	
3/21/2002	--		7.00	27.00	4.36	149.28	--	--	--	--	--	--	--	--	
4/17/2002	--		7.00	27.00	5.31	148.33	<50	<0.5	<0.5	<0.5	<0.5	*8.7*	--	--	
8/12/2002	--		7.00	27.00	7.00	146.64	--	--	--	--	--	--	--	--	
12/6/2002	--		7.00	27.00	7.32	146.32	<50	<0.5	<0.5	<0.5	<0.5	*6.2*	1.4	6.7	
1/29/2003	--		7.00	27.00	6.07	147.57	--	--	--	--	--	--	--	--	b
5/23/2003	--		7.00	27.00	6.45	147.19	<50	<0.50	<0.50	<0.50	<0.50	1.6	0.9	7.7	
9/4/2003	--		7.00	27.00	6.93	146.71	--	--	--	--	--	--	--	--	c
11/20/2003	--		7.00	27.00	7.04	146.60	--	--	--	--	--	--	--	--	c
02/02/2004	--	159.21	7.00	27.00	5.92	153.29	--	--	--	--	--	--	--	--	f
05/14/2004	--		7.00	27.00	7.52	151.69	--	--	--	--	--	--	--	--	
09/02/2004	P		7.00	27.00	7.19	152.02	<50	<0.50	<0.50	<0.50	<0.50	*6.5*	9.3	8.9	
11/04/2004	--		7.00	27.00	6.40	152.81	--	--	--	--	--	--	--	--	
02/08/2005	--		7.00	27.00	6.01	153.20	--	--	--	--	--	--	--	--	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-3 Cont.															
05/09/2005	--	159.21	7.00	27.00	6.74	152.47	--	--	--	--	--	--	--	--	
08/11/2005	P		7.00	27.00	6.77	152.44	<50	<0.50	<0.50	<0.50	<0.50	*11*	1.9	6.5	
11/18/2005	--		7.00	27.00	7.83	151.38	--	--	--	--	--	--	--	--	
02/16/2006	--		7.00	27.00	7.26	151.95	--	--	--	--	--	--	--	--	
5/30/2006	--		7.00	27.00	5.82	153.39	--	--	--	--	--	--	--	--	
8/24/2006	P		7.00	27.00	7.00	152.21	<50	<0.50	<0.50	<0.50	<0.50	*7.6*	1.15	6.4	
11/1/2006	--		7.00	27.00	7.50	151.71	--	--	--	--	--	--	--	--	
2/7/2007	--		7.00	27.00	6.90	152.31	--	--	--	--	--	--	--	--	
5/8/2007	--		7.00	27.00	5.95	153.26	--	--	--	--	--	--	--	--	
8/8/2007	NP		7.00	27.00	7.47	151.74	<50	<0.50	<0.50	<0.50	<0.50	1.2	1.21	6.93	
11/14/2007	--		7.00	27.00	7.05	152.16	--	--	--	--	--	--	--	--	
2/22/2008	--		7.00	27.00	5.50	153.71	--	--	--	--	--	--	--	--	
5/24/2008	--		7.00	27.00	7.03	152.18	--	--	--	--	--	--	--	--	
8/21/2008	NP		7.00	27.00	7.80	151.41	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.11	6.84	
11/19/2008	--		7.00	27.00	7.69	151.52	--	--	--	--	--	--	--	--	
2/23/2009	--		7.00	27.00	7.28	151.93	--	--	--	--	--	--	--	--	
5/14/2009	--		7.00	27.00	6.17	153.04	--	--	--	--	--	--	--	--	
8/20/2009	NP		7.00	27.00	7.38	151.83	<50	<0.50	<0.50	<0.50	<0.50	2.2	2.05	7.01	
2/19/2010	--		7.00	27.00	5.31	153.90	--	--	--	--	--	--	--	--	
8/10/2010	NP		7.00	27.00	7.12	152.09	<50	<0.50	<0.50	<0.50	<0.50	1.6	1.27	7.33	
12/16/2010	--		7.00	27.00	5.65	153.56	--	--	--	--	--	--	--	--	j
2/14/2011	--		7.00	27.00	6.20	153.01	--	--	--	--	--	--	--	--	
5/20/2011	--		7.00	27.00	5.77	153.44	--	--	--	--	--	--	--	--	
8/15/2011	P		7.00	27.00	6.41	152.80	<50	<0.50	<0.50	<0.50	<0.50	1.2	1.04	7.0	
2/2/2012	--		7.00	27.00	6.34	152.87	--	--	--	--	--	--	--	--	
MW-4															
6/20/2000	--	156.53	7.00	27.00	7.50	149.03	***20,000***	***5,100***	***440***	***1,000***	***1,700***	*<250*	--	--	c
9/28/2000	--		7.00	27.00	8.20	148.33	--	--	--	--	--	--	--	--	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-4 Cont.															
12/17/2000	--	156.53	7.00	27.00	8.11	148.42	***4,320***	***1,240***	<20	27.2	***249***	*<100*	--	--	
3/23/2001	--		7.00	27.00	6.69	149.84	--	--	--	--	--	--	--	--	
6/21/2001	--		7.00	27.00	8.01	148.52	***2,800***	***470***	16	19	***160***	*130*	--	--	
9/23/2001	--		7.00	27.00	8.91	147.62	--	--	--	--	--	--	--	--	
12/31/2001	--		7.00	27.00	4.42	152.11	***4,600***	***1,500***	*100*	***160***	***210***	*160*	--	--	
3/21/2002	--		7.00	27.00	4.98	151.55	--	--	--	--	--	--	--	--	
4/17/2002	--		7.00	27.00	6.23	150.30	***7,100***	***2,200***	*110*	***290***	***450***	*<250*	--	--	
8/12/2002	--		7.00	27.00	8.24	148.29	--	--	--	--	--	--	--	--	
12/6/2002	--		7.00	27.00	8.42	148.11	***1,500***	***410***	6.8	20	*29*	*43*	1.1	6.7	a
1/29/2003	--		7.00	27.00	7.20	149.33	--	--	--	--	--	--	--	--	b
5/23/2003	--		7.00	27.00	7.18	149.35	***<5,000***	***1,300***	*89*	***210***	***260***	*<50*	1.4	6.9	
9/4/2003	--		7.00	27.00	8.15	148.38	--	--	--	--	--	--	--	--	c
11/20/2003	--		7.00	27.00	8.73	147.80	--	--	--	--	--	--	--	--	c
02/02/2004	P	163.25	7.00	27.00	6.25	157.00	***980***	***280***	21	29	*38*	*29*	1.4	10.6	c, f, g
05/14/2004	--		7.00	27.00	8.38	154.87	--	--	--	--	--	--	--	--	g
09/02/2004	P		7.00	27.00	8.36	154.89	***260***	*11*	<1.0	5.5	14	*28*	2.4	7.4	g
11/04/2004	--		7.00	27.00	7.71	155.54	--	--	--	--	--	--	--	--	c, g
02/08/2005	P		7.00	27.00	6.27	156.98	***7,500***	***1,700***	***320***	***480***	***920***	*45*	0.65	6.5	g
05/09/2005	--		7.00	27.00	5.90	157.35	--	--	--	--	--	--	--	--	g
08/11/2005	P		7.00	27.00	7.96	155.29	***3,100***	***1,100***	*41*	***160***	***110***	*32*	0.6	6.5	g
11/18/2005	--		7.00	27.00	8.57	154.68	--	--	--	--	--	--	--	--	g
02/16/2006	P		7.00	27.00	6.28	156.97	***9,400***	***1,800***	*130*	***600***	***420***	*35*	0.5	6.8	g
5/30/2006	--	162.47	7.00	27.00	7.02	155.45	--	--	--	--	--	--	--	--	g
8/24/2006	P		7.00	27.00	8.26	154.21	***3,600***	***1,400***	21	***110***	*70*	*39*	1.00	6.8	
11/1/2006	--		7.00	27.00	8.67	153.80	--	--	--	--	--	--	--	--	
2/7/2007	NP		7.00	27.00	8.02	154.45	***3,100***	***570***	17	***170***	***110***	*67*	0.95	7.07	
5/8/2007	--		7.00	27.00	7.03	155.44	--	--	--	--	--	--	--	--	
8/8/2007	NP		7.00	27.00	8.60	153.87	***2,900***	***630***	22	***67***	*57*	*72*	0.93	6.79	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-4 Cont.															
11/14/2007	--	162.47	7.00	27.00	8.53	153.94	--	--	--	--	--	--	--	--	
2/22/2008	P		7.00	27.00	6.25	156.22	***3,900***	***880***	39	***180***	*92*	*70*	2.31	6.87	
5/24/2008	--		7.00	27.00	--	--	--	--	--	--	--	--	--	--	d
8/21/2008	NP		7.00	27.00	8.96	153.51	***3,700***	***1,100***	26	***85***	***130***	*53*	2.26	6.80	
11/19/2008	--		7.00	27.00	9.20	153.27	--	--	--	--	--	--	--	--	
2/23/2009	P		7.00	27.00	6.35	156.12	***3,000***	***220***	9.1	23	19	*39*	2.21	6.51	
5/14/2009	--		7.00	27.00	7.00	155.47	--	--	--	--	--	--	--	--	
8/20/2009	NP		7.00	27.00	8.05	154.42	***5,700***	***1,100***	35	***110***	*100*	*23*	2.17	6.81	
2/19/2010	P		7.00	27.00	5.71	156.76	***12,000***	***1,200***	*120*	***230***	***390***	<5.0	0.81	6.70	i
8/10/2010	NP		7.00	27.00	7.59	154.88	***9,700***	***1,500***	*120*	***400***	***400***	*<20*	3.81	6.8	
12/16/2010	P	162.48	7.00	27.00	6.83	155.65	***15,000***	***1,800***	*82*	***270***	***210***	*<25*	0.49	6.81	j
2/14/2011	NP		7.00	27.00	7.33	155.15	***260***	<0.50	<0.50	2.7	11	*13*	0.80	7.10	
5/20/2011	--		7.00	27.00	6.89	155.59	--	--	--	--	--	--	--	--	
8/15/2011	P		7.00	27.00	7.59	154.89	***8,600***	***2,100***	*86*	***250***	***210***	*<12*	1.02	7.0	l
2/2/2012	P		7.00	27.00	7.71	154.77	***4,600***	***1,000***	34	23	*33*	*<12*	0.60	7.2	
MW-5															
6/20/2000	--	151.33	10.00	23.00	7.84	143.49	<50	<0.5	<0.5	<0.5	<1.0	*<10*	--	--	
9/28/2000	--		10.00	23.00	8.37	142.96	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/17/2000	--		10.00	23.00	8.36	142.97	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/23/2001	--		10.00	23.00	7.55	143.78	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/21/2001	--		10.00	23.00	8.20	143.13	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/23/2001	--		10.00	23.00	8.68	142.65	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/31/2001	--		10.00	23.00	7.57	143.76	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		10.00	23.00	6.12	145.21	<50	<0.5	<0.5	<0.5	<0.5	3.2	--	--	
4/17/2002	--		10.00	23.00	6.61	144.72	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/12/2002	--		10.00	23.00	8.14	143.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.1	7.6	
12/6/2002	--		10.00	23.00	8.65	142.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.1	6.8	
1/29/2003	--		10.00	23.00	7.22	144.11	<50	<0.5	<0.5	<0.5	<0.5	<0.50	1	6.6	b

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ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-5 Cont.															
5/23/2003	--	151.33	10.00	23.00	7.31	144.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6	
9/4/2003	--		10.00	23.00	9.50	141.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	6.7	
11/20/2003	--		10.00	23.00	8.31	143.02	--	--	--	--	--	--	--	--	
02/02/2004	--		10.00	23.00	6.92	144.41	--	--	--	--	--	--	--	--	c, f, h
05/14/2004	--		10.00	23.00	8.56	142.77	--	--	--	--	--	--	--	--	h
09/02/2004	P		10.00	23.00	8.79	142.54	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.5	6.8	h
11/04/2004	--		10.00	23.00	8.33	143.00	--	--	--	--	--	--	--	--	c, h
02/08/2005	--		10.00	23.00	7.28	144.05	--	--	--	--	--	--	--	--	h
05/09/2005	--		10.00	23.00	8.19	143.14	--	--	--	--	--	--	--	--	h
08/11/2005	P		10.00	23.00	8.39	142.94	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.6	h
11/18/2005	--		10.00	23.00	11.25	140.08	--	--	--	--	--	--	--	--	h
02/16/2006	--		10.00	23.00	9.22	142.11	--	--	--	--	--	--	--	--	h
5/30/2006	--		10.00	23.00	7.52	143.81	--	--	--	--	--	--	--	--	h
8/24/2006	P		10.00	23.00	7.95	143.38	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.60	6.6	
11/1/2006	--		10.00	23.00	8.32	143.01	--	--	--	--	--	--	--	--	
2/7/2007	--		10.00	23.00	8.25	143.08	--	--	--	--	--	--	--	--	
5/8/2007	--		10.00	23.00	7.60	143.73	--	--	--	--	--	--	--	--	
8/8/2007	P		10.00	23.00	8.12	143.21	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.26	7.31	
11/14/2007	--		10.00	23.00	9.10	142.23	--	--	--	--	--	--	--	--	
2/22/2008	--		10.00	23.00	7.48	143.85	--	--	--	--	--	--	--	--	
5/24/2008	--		10.00	23.00	8.12	143.21	--	--	--	--	--	--	--	--	
8/21/2008	P		10.00	23.00	8.65	142.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.14	6.54	
11/19/2008	--		10.00	23.00	11.86	139.47	--	--	--	--	--	--	--	--	
2/23/2009	--		10.00	23.00	10.20	141.13	--	--	--	--	--	--	--	--	
5/14/2009	--		10.00	23.00	9.63	141.70	--	--	--	--	--	--	--	--	
8/20/2009	P		10.00	23.00	8.52	142.81	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.01	6.47	
2/19/2010	--		10.00	23.00	--	--	--	--	--	--	--	--	--	--	d
8/10/2010	P		10.00	23.00	8.05	143.28	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.15	7.1	

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ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-5 Cont.															
12/16/2010	--	156.90	10.00	23.00	8.10	148.80	--	--	--	--	--	--	--	--	j
2/14/2011	--		10.00	23.00	--	--	--	--	--	--	--	--	--	--	d
5/20/2011	--		10.00	23.00	--	--	--	--	--	--	--	--	--	--	d
8/15/2011	P		10.00	23.00	7.91	148.99	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.46	7.4	
2/2/2012	--		10.00	23.00	8.08	148.82	--	--	--	--	--	--	--	--	
MW-6															
6/20/2000	--	153.84	5.00	15.00	4.79	149.05	--	--	--	--	--	--	--	--	
9/28/2000	--		5.00	15.00	5.39	148.45	--	--	--	--	--	--	--	--	
12/17/2000	--		5.00	15.00	4.71	149.13	--	--	--	--	--	--	--	--	
3/23/2001	--		5.00	15.00	4.69	149.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/21/2001	--		5.00	15.00	5.22	148.62	--	--	--	--	--	--	--	--	
9/23/2001	--		5.00	15.00	5.40	148.44	--	--	--	--	--	--	--	--	
12/31/2001	--		5.00	15.00	3.95	149.89	--	--	--	--	--	--	--	--	
3/21/2002	--		5.00	15.00	2.94	150.90	<50	<0.5	<0.5	<0.5	<0.5	*5.2*	--	--	
4/17/2002	--		5.00	15.00	5.11	148.73	--	--	--	--	--	--	--	--	
8/12/2002	--		5.00	15.00	5.23	148.61	--	--	--	--	--	--	--	--	
12/6/2002	--		5.00	15.00	5.29	148.55	--	--	--	--	--	--	--	--	
1/29/2003	--		5.00	15.00	4.79	149.05	--	--	--	--	--	--	--	--	b
5/23/2003	--		5.00	15.00	4.31	149.53	<50	<0.50	<0.50	<0.50	<0.50	*9.4*	1	6.7	
09/04/03	--		5.00	15.00	--	--	--	--	--	--	--	--	--	--	d
11/20/2003	--		5.00	15.00	6.31	147.53	--	--	--	--	--	--	--	--	
02/02/2004	--	159.41	5.00	15.00	4.78	154.63	--	--	--	--	--	--	--	--	f
05/14/2004	--		5.00	15.00	6.29	153.12	--	--	--	--	--	--	--	--	
09/02/2004	--		5.00	15.00	5.79	153.62	--	--	--	--	--	--	--	--	d
11/04/2004	--		5.00	15.00	--	--	--	--	--	--	--	--	--	--	d
02/08/2005	--		5.00	15.00	5.13	154.28	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	15.00	4.52	154.89	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	15.00	5.02	154.39	<50	<0.50	<0.50	<0.50	<0.50	*7.9*	2.1	6.6	

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Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-6 Cont.															
11/18/2005	--	159.41	5.00	15.00	6.31	153.10	--	--	--	--	--	--	--	--	
02/16/2006	--		5.00	15.00	4.24	155.17	--	--	--	--	--	--	--	--	
5/30/2006	--		5.00	15.00	4.45	154.96	--	--	--	--	--	--	--	--	
8/24/2006	P		5.00	15.00	5.18	154.23	<50	<0.50	<0.50	<0.50	<0.50	*12*	3.4	6.8	
11/1/2006	--		5.00	15.00	6.05	153.36	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	15.00	5.00	154.41	--	--	--	--	--	--	--	--	
5/8/2007	--		5.00	15.00	4.30	155.11	--	--	--	--	--	--	--	--	
8/8/2007	NP		5.00	15.00	5.51	153.90	<50	<0.50	<0.50	<0.50	<0.50	0.57	2.94	6.87	
11/14/2007	--		5.00	15.00	5.38	154.03	--	--	--	--	--	--	--	--	
2/22/2008	--		5.00	15.00	4.70	154.71	--	--	--	--	--	--	--	--	
5/24/2008	--		5.00	15.00	5.25	154.16	--	--	--	--	--	--	--	--	
8/21/2008	NP		5.00	15.00	6.14	153.27	<50	<0.50	<0.50	<0.50	<0.50	1.9	1.99	7.13	
11/19/2008	--		5.00	15.00	5.94	153.47	--	--	--	--	--	--	--	--	
2/23/2009	--		5.00	15.00	5.00	154.41	--	--	--	--	--	--	--	--	
5/14/2009	--		5.00	15.00	4.60	154.81	--	--	--	--	--	--	--	--	
8/20/2009	NP		5.00	15.00	5.65	153.76	<50	<0.50	<0.50	<0.50	<0.50	2.0	1.98	6.81	
2/19/2010	--		5.00	15.00	7.28	152.13	--	--	--	--	--	--	--	--	
8/10/2010	NP		5.00	15.00	5.02	154.39	<50	<0.50	<0.50	<0.50	<0.50	4.3	1.99	6.93	
12/16/2010	--		5.00	15.00	4.50	154.91	--	--	--	--	--	--	--	--	j
2/14/2011	--		5.00	15.00	4.80	154.61	--	--	--	--	--	--	--	--	
5/20/2011	--		5.00	15.00	4.29	155.12	--	--	--	--	--	--	--	--	
8/15/2011	P		5.00	15.00	4.52	154.89	<50	<0.50	<0.50	<0.50	<0.50	2.2	1.55	7.1	
2/2/2012	--		5.00	15.00	--	--	--	--	--	--	--	--	--	--	d
MW-7															
12/16/2010	P	164.80	5.00	20.00	6.52	158.28	***700***	<0.50	<0.50	15	*32*	*62*	--	7.08	j
2/14/2011	NP		5.00	20.00	6.77	158.03	***7,100***	***1,700***	*98*	***260***	***210***	*<20*	1.02	6.8	
5/20/2011	NP		5.00	20.00	5.84	158.96	***570***	<0.50	<0.50	*37*	*25*	4.6	1.66	6.7	l (GRO)
8/15/2011	P		5.00	20.00	6.96	157.84	***420***	<1.0	<1.0	***49***	6.7	*14*	0.58	6.9	

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

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
ESL - DW							100	1.0	40	30	20	5.0			
ESL - NDW							210	46	130	43	100	1,800			
MW-7 Cont.															
2/2/2012	P	164.80	5.00	20.00	7.15	157.65	<50	<0.50	<0.50	<0.50	<0.50	*6.2*	0.45	7.5	
MW-8															
12/16/2010	P	164.14	5.00	20.00	6.85	157.29	***520***	*43*	<0.50	4.1	*21*	*150*	0.46	7.12	j
2/14/2011	NP		5.00	20.00	7.30	156.84	<50	*<2.0*	<2.0	<2.0	<2.0	*110*	1.07	6.7	
5/20/2011	NP		5.00	20.00	6.88	157.26	<50	*<2.0*	<2.0	<2.0	<2.0	*88*	1.35	6.5	
8/15/2011	P		5.00	20.00	6.00	158.14	<50	*5.2*	<1.0	9.7	<1.0	*57*	0.51	6.7	
2/2/2012	P		5.00	20.00	7.57	156.57	<50	<0.50	<0.50	<0.50	<0.50	3.9	0.68	7.1	
MW-9															
12/16/2010	P	163.77	5.00	20.00	6.63	157.14	***330***	*18*	<0.50	11	*38*	*390*	0.57	6.97	j
2/14/2011	NP		5.00	20.00	6.85	156.92	<50	*<4.0*	<4.0	<4.0	<4.0	*270*	0.98	6.9	
5/20/2011	NP		5.00	20.00	6.39	157.38	66	*<4.0*	<4.0	<4.0	<4.0	*280*	1.64	6.7	l (GRO)
8/15/2011	NP		5.00	20.00	7.09	156.68	<50	*<2.0*	<2.0	<2.0	<2.0	*120*	0.88	7.1	
2/2/2012	P		5.00	20.00	7.18	156.59	<50	<0.50	<0.50	<0.50	<0.50	*34*	0.65	7.2	

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in ft below TOC
ft bgs = Feet below ground surface
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well was not purged prior to sampling
P = Well was purged prior to sampling
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
BTEX = Benzene, toluene, ethylbenzene and xylenes

ESL - DW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008).

ESL - NDW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is NOT a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008).

NE = ESL not established

Footnotes:
a = Chromatogram pattern: Gasoline C6-C10 for GRO/TPH-g
b = Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel oxygenates
c = Wells gauged with ORC sock in well
d = Well inaccessible
e = The hydrocarbon result for GRO was partly due to individual peaks in the quantitative range
f = Well resurveyed on 1/27/2004 to NAVD88
g = Upon review of survey data (1/27/2004), TOC elevation for MW-4 is actually 162.47 ft.
h = Upon review of survey data (1/27/2004), MW-5 was not surveyed from the TOC. MW-5 was surveyed from the pavement due to inaccessibility to the TOC. Therefore, survey data for MW-5 from the TOC is unavailable. Historic data prior to 5/30/2006 (change in consultant) not modified
i = Quantitation of unknown hydrocarbon(s) in sample based on gasoline
j = Surveyed 12/9/2010
k = Grab groundwater sample
l = Quantitated against gasoline

Notes:
Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported

Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12

Values for DO and pH were obtained through field measurements

The DTW's and TOC's for wells MW-5 and MW-6 were taken from Delta Environmental sampling sheets because the well logs were not available

GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-1									
3/23/2001	--	--	***2,710***	--	--	--	--	--	
3/21/2002	--	--	***2,000***	--	--	--	--	--	
5/23/2003	<20,000	*<4,000*	*1,600*	<100	<100	<100	--	--	
11/20/2003	<2,000	*<400*	*1,500*	<10	<10	<10	--	--	a
05/14/2004	<5,000	*<1,000*	*1,200*	<25	<25	<25	*<25*	*<25*	
09/02/2004	<1,000	*<200*	*660*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
11/04/2004	<2,000	*<400*	*580*	<10	<10	<10	*<10*	*<10*	
02/08/2005	<2,000	*<400*	*610*	<10	<10	<10	*<10*	*<10*	
05/09/2005	<1,000	*<200*	*620*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	a
08/11/2005	<500	*250*	*390*	<2.5	<2.5	2.6	*<2.5*	*<2.5*	a
11/18/2005	<500	*<100*	*340*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	a
02/16/2006	<1,500	*<100*	*340*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
5/30/2006	<1,500	*<100*	*420*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	a
8/24/2006	<3,000	*<200*	*180*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
11/1/2006	<3,000	*<200*	*220*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	a
2/7/2007	<3,000	*<200*	*190*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
5/8/2007	<3,000	*<200*	*420*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
8/8/2007	<300	*<20*	*110*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
11/14/2007	<1,500	*<100*	*210*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
2/22/2008	<300	<10	*250*	<0.50	<0.50	1.5	<0.50	*<0.50*	
5/24/2008	<3,000	*<100*	*380*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
8/21/2008	<1,500	*<50*	*170*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
11/19/2008	<300	<10	*30*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/23/2009	<1,500	*<50*	*240*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
5/14/2009	<300	<10	*200*	<0.50	<0.50	1.3	<0.50	*<0.50*	
8/20/2009	<1,200	*<40*	*170*	<2.0	<2.0	<2.0	*<2.0*	*<2.0*	
2/19/2010	<300	<10	*170*	<0.50	<0.50	1.2	<0.50	*<0.50*	
8/10/2010	<1,500	*<50*	*230*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
12/16/2010	<1,200	*<40*	*140*	<2.0	<2.0	<2.0	*<2.0*	*<2.0*	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-1 Cont.									
2/14/2011	<1,500	*<50*	*170*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
8/15/2011	<1,500	*<50*	*130*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
2/2/2012	<600	*<20*	*66*	<1.0	<1.0	<1.0	*<1.0*	*<1.0*	
MW-2									
3/23/2001	--	--	<2.5	--	--	--	--	--	
3/21/2002	--	--	*45*	--	--	--	--	--	
5/23/2003	<100	*<20*	*55*	<0.50	<0.50	0.53	--	--	
02/02/2004	<100	*<20*	*37*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
09/02/2004	<500	*<100*	*67*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
02/08/2005	<100	*<20*	*30*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
08/11/2005	<100	*<20*	*35*	<0.50	<0.50	<0.50	<0.50	*<0.50*	a
02/16/2006	<300	*<20*	*39*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/24/2006	<300	*<20*	*25*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/7/2007	<300	*<20*	*7.2*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/8/2007	<300	*<20*	*7.2*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/22/2008	<300	<10	*24*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/21/2008	<300	<10	4.9	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/23/2009	<300	<10	*24*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/20/2009	<300	<10	*8.4*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/19/2010	<300	<10	*22*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/10/2010	<300	<10	*23*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
12/16/2010	<300	<10	*17*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/14/2011	<300	<10	*11*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<300	<10	1.7	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/2/2012	<300	<10	1.8	<0.50	<0.50	<0.50	<0.50	*<0.50*	
MW-3									
6/20/2000	--	--	*<10*	--	--	--	--	--	
12/17/2000	--	--	<2.5	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-3 Cont.									
6/21/2001	--	--	2.5	--	--	--	--	--	
12/31/2001	--	--	4.9	--	--	--	--	--	
4/17/2002	--	--	*8.7*	--	--	--	--	--	
12/6/2002	--	--	*6.2*	--	--	--	--	--	
5/23/2003	<100	*<20*	1.6	<0.50	<0.50	<0.50	--	--	
09/02/2004	<100	*<20*	*6.5*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
08/11/2005	<100	*<20*	*11*	<0.50	<0.50	<0.50	<0.50	*<0.50*	a
8/24/2006	<300	*<20*	*7.6*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/8/2007	<300	*<20*	1.2	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/21/2008	<300	<10	3.1	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/20/2009	<300	<10	2.2	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/10/2010	<300	<10	1.6	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<300	<10	1.2	<0.50	<0.50	<0.50	<0.50	*<0.50*	
MW-4									
6/20/2000	--	--	*<250*	--	--	--	--	--	
12/17/2000	--	--	*<100*	--	--	--	--	--	
6/21/2001	--	--	*130*	--	--	--	--	--	
12/31/2001	--	--	*160*	--	--	--	--	--	
4/17/2002	--	--	*<250*	--	--	--	--	--	
12/6/2002	--	--	*43*	--	--	--	--	--	
5/23/2003	<10,000	*<2,000*	*<50*	<50	<50	<50	--	--	
02/02/2004	<500	*<100*	*29*	<2.5	<2.5	2.6	*<2.5*	*<2.5*	
09/02/2004	<200	*<40*	*28*	<1.0	<1.0	<1.0	*<1.0*	*<1.0*	
02/08/2005	<5,000	*<1,000*	*45*	<25	<25	<25	*<25*	*<25*	
08/11/2005	<2,000	*<400*	*32*	<10	<10	<10	*<10*	*<10*	
02/16/2006	<6,000	*<400*	*35*	<10	<10	<10	*<10*	*<10*	
8/24/2006	<1,500	*<100*	*39*	<2.5	<2.5	<2.5	*<2.5*	*<2.5*	
2/7/2007	<6,000	*<400*	*67*	<10	<10	<10	*<10*	*<10*	
8/8/2007	<6,000	*<400*	*72*	<10	<10	<10	*<10*	*<10*	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-4 Cont.									
2/22/2008	<6,000	*<200*	*70*	<10	<10	<10	*<10*	*<10*	
8/21/2008	<12,000	*<400*	*53*	<20	<20	<20	*<20*	*<20*	
2/23/2009	<3,000	*<100*	*39*	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
8/20/2009	<12,000	*<400*	*23*	<20	<20	<20	*<20*	*<20*	
2/19/2010	<3,000	*<100*	<5.0	<5.0	<5.0	<5.0	*<5.0*	*<5.0*	
8/10/2010	<12,000	*<400*	*<20*	<20	<20	<20	*<20*	*<20*	
12/16/2010	<15,000	*<500*	*<25*	<25	<25	<25	*<25*	*<25*	
2/14/2011	<300	<10	*13*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<7,500	*<250*	*<12*	<12	<12	<12	*<12*	*<12*	
2/2/2012	<7,500	*<250*	*<12*	<12	<12	<12	*<12*	*<12*	
MW-5									
6/20/2000	--	--	*<10*	--	--	--	--	--	
9/28/2000	--	--	<2.5	--	--	--	--	--	
12/17/2000	--	--	<2.5	--	--	--	--	--	
3/23/2001	--	--	<2.5	--	--	--	--	--	
6/21/2001	--	--	<2.5	--	--	--	--	--	
9/23/2001	--	--	<2.5	--	--	--	--	--	
12/31/2001	--	--	<2.5	--	--	--	--	--	
3/21/2002	--	--	3.2	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
8/12/2002	--	--	<2.5	--	--	--	--	--	
12/6/2002	--	--	<2.5	--	--	--	--	--	
1/29/2003	<40	*<20*	<0.50	<0.50	<0.50	<0.50	--	--	
5/23/2003	<100	*<20*	<0.50	<0.50	<0.50	<0.50	--	--	
9/4/2003	<100	*<20*	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
09/02/2004	<100	*<20*	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
08/11/2005	<100	*<20*	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/24/2006	<300	*<20*	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/8/2007	<300	*<20*	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-5 Cont.									
8/21/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/20/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/10/2010	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	
MW-6									
3/23/2001	--	--	<2.5	--	--	--	--	--	
3/21/2002	--	--	*5.2*	--	--	--	--	--	
5/23/2003	<100	*<20*	*9.4*	<0.50	<0.50	<0.50	--	--	
08/11/2005	<100	*<20*	*7.9*	<0.50	<0.50	<0.50	<0.50	*<0.50*	a
8/24/2006	<300	*<20*	*12*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/8/2007	<300	*<20*	0.57	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/21/2008	<300	<10	1.9	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/20/2009	<300	<10	2.0	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/10/2010	<300	<10	4.3	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<300	<10	2.2	<0.50	<0.50	<0.50	<0.50	*<0.50*	
MW-7									
12/16/2010	<300	<10	*62*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
2/14/2011	<1,2000	*<400*	*<20*	<20	<20	<20	*<20*	*<20*	
5/20/2011	<300	<10	4.6	<0.50	<0.50	<0.50	<0.50	*<0.50*	
8/15/2011	<600	*<20*	*14*	<1.0	<1.0	<1.0	*<1.0*	*<1.0*	
2/2/2012	<300	<10	*6.2*	<0.50	<0.50	<0.50	<0.50	*<0.50*	
MW-8									
12/16/2010	<300	<10	*150*	<0.50	<0.50	1.7	<0.50	*<0.50*	
2/14/2011	<1,200	*<40*	*110*	<2.0	<2.0	<2.0	*<2.0*	*<2.0*	
5/20/2011	<1,200	*<40*	*88*	<2.0	<2.0	<2.0	*<2.0*	*<2.0*	
8/15/2011	<600	*<20*	*57*	<1.0	<1.0	<1.0	*<1.0*	*<1.0*	
2/2/2012	<300	<10	3.9	<0.50	<0.50	<0.50	<0.50	*<0.50*	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #0374, 6407 Telegraph Ave., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
ESL - DW	NE	12	5.0	NE	NE	NE	0.5	0.05	
ESL - NDW	NE	18,000	1,800	NE	NE	NE	200	150	
MW-9									
12/16/2010	<300	*40*	*390*	<0.50	<0.50	4.1	<0.50	*<0.50*	
2/14/2011	<2,400	*<80*	*270*	<4.0	<4.0	<4.0	*<4.0*	*<4.0*	
5/20/2011	<2,400	*<80*	*280*	<4.0	<4.0	<4.0	*<4.0*	*<4.0*	
8/15/2011	<1,200	*<40*	*120*	<2.0	<2.0	<2.0	*<2.0*	*<2.0*	
2/2/2012	<300	<10	*34*	<0.50	<0.50	<0.50	<0.50	*<0.50*	

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above the laboratory reporting limi
1,2-DCA = 1,2-Dichloroethane
ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

ESL - DW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008).

ESL - NDW = Environmental Screning Levels (ESLs), shallow soils (<3 meters bgs), groundwater is NOT a current or potential source of drinking water, for residential land use. Ref. California Regional Water Quality Control Board, San Francisco Bay Region (CRWQCB-SFBR), Screening for Environmental Concerns at Sites with Contaminated Soil & Groundwater, Interim Final-November 2007 (Revised May 2008).

NE = ESL not established

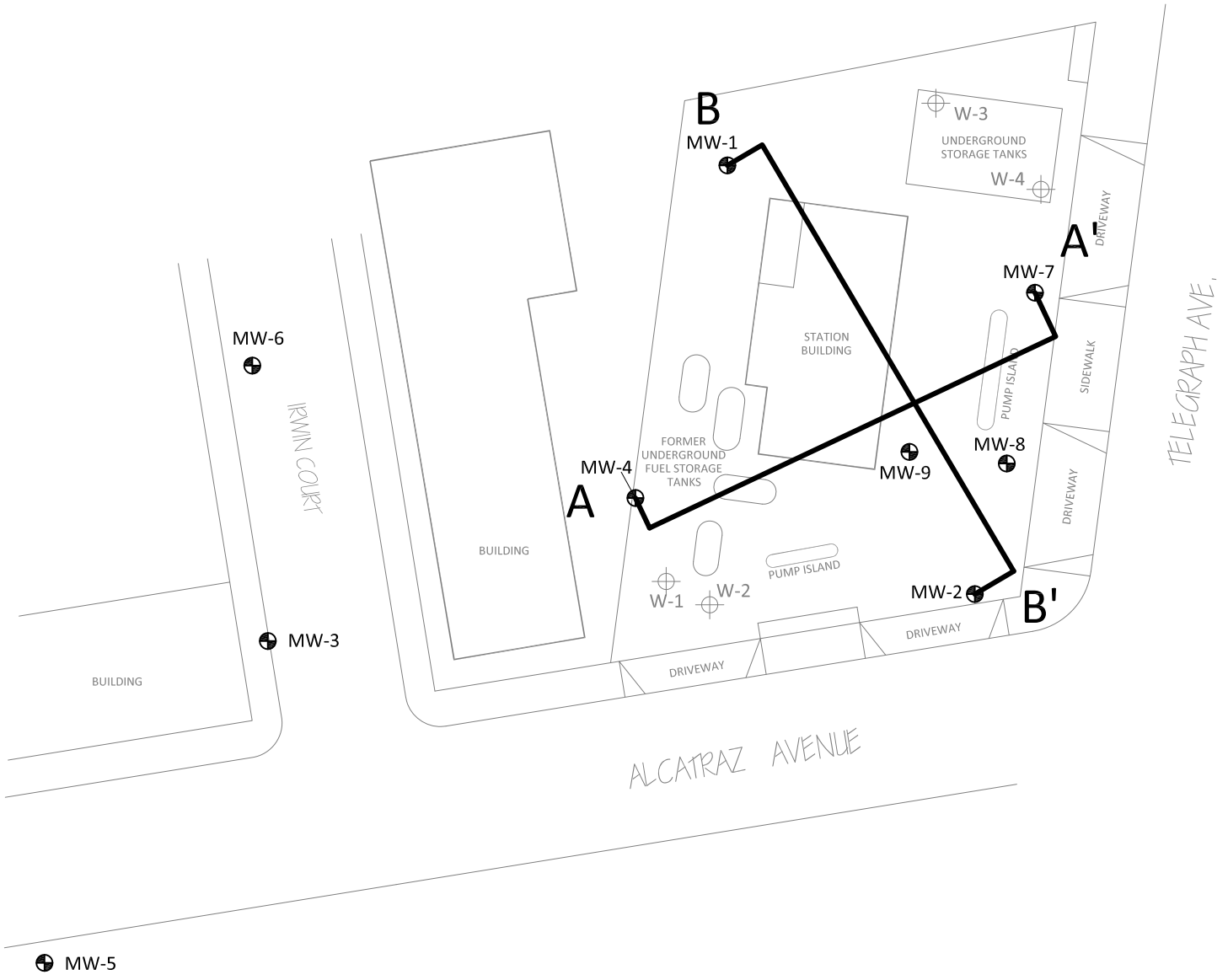
Footnotes:
a = The continuing calibration verification for ethanol was outside of client contractual limits, however, it was within method acceptance limits. The data should still be useful for its intended purpose

Notes:
All volatile organic compounds analyzed using EPA Method 8260B

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

APPENDIX B

Historic Boring Logs and Cross Sections



N

0 40 80

SCALE (ft)

LEGEND

Monitoring Well Location

Tank Pit Monitoring Well Location

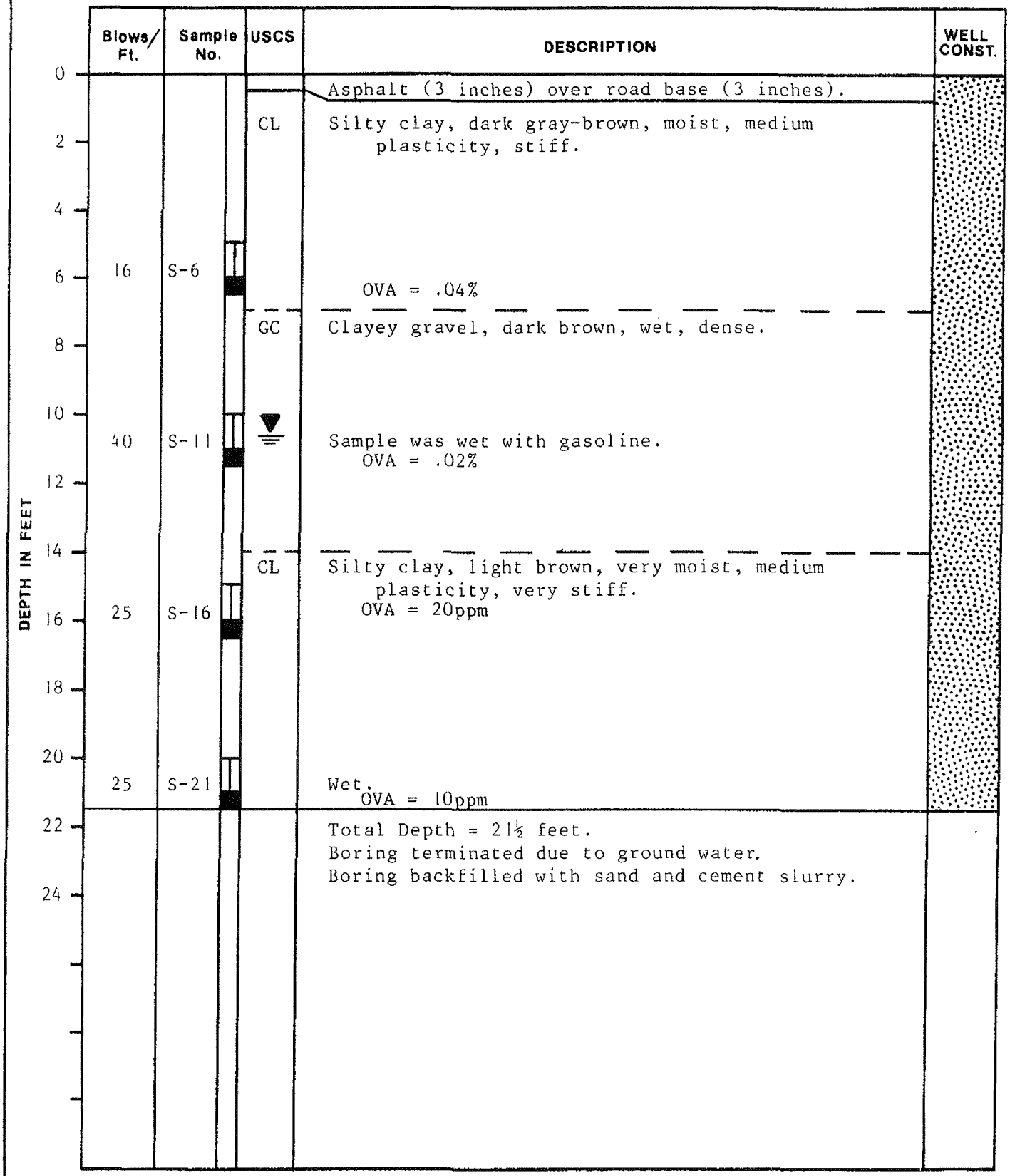
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 06-88-602 Date: 5/28/2013

Station #374
6407 Telegraph Ave.
Oakland, California

Site Map with Cross Section Locations

Drawing
8



Applied GeoSystems
41255 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906

PROJECT NO. 18039-1

LOG OF BORING B - 1

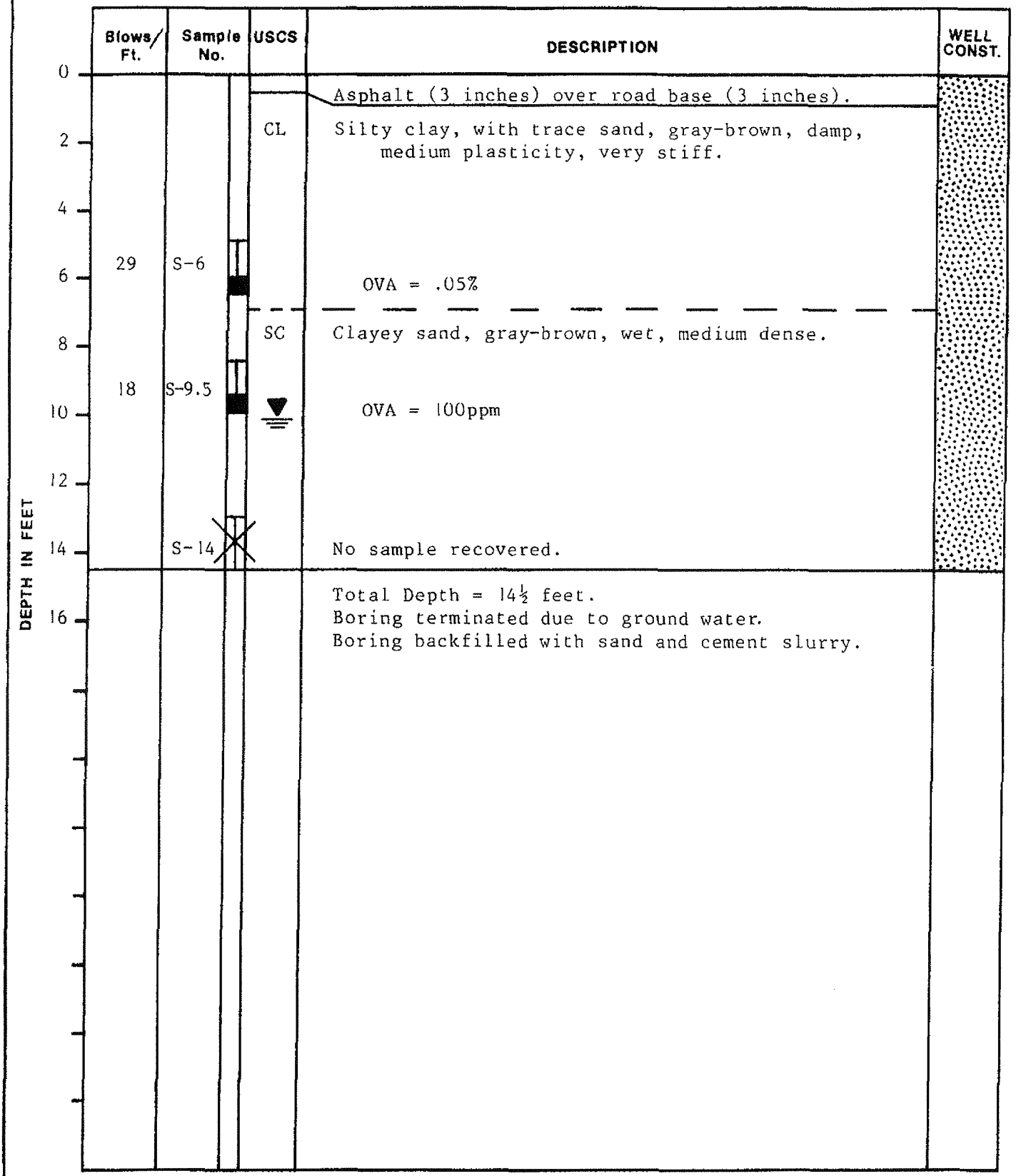
ARCO Station No. 374

Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-4



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PROJECT NO. 18039-1

LOG OF BORING B - 2

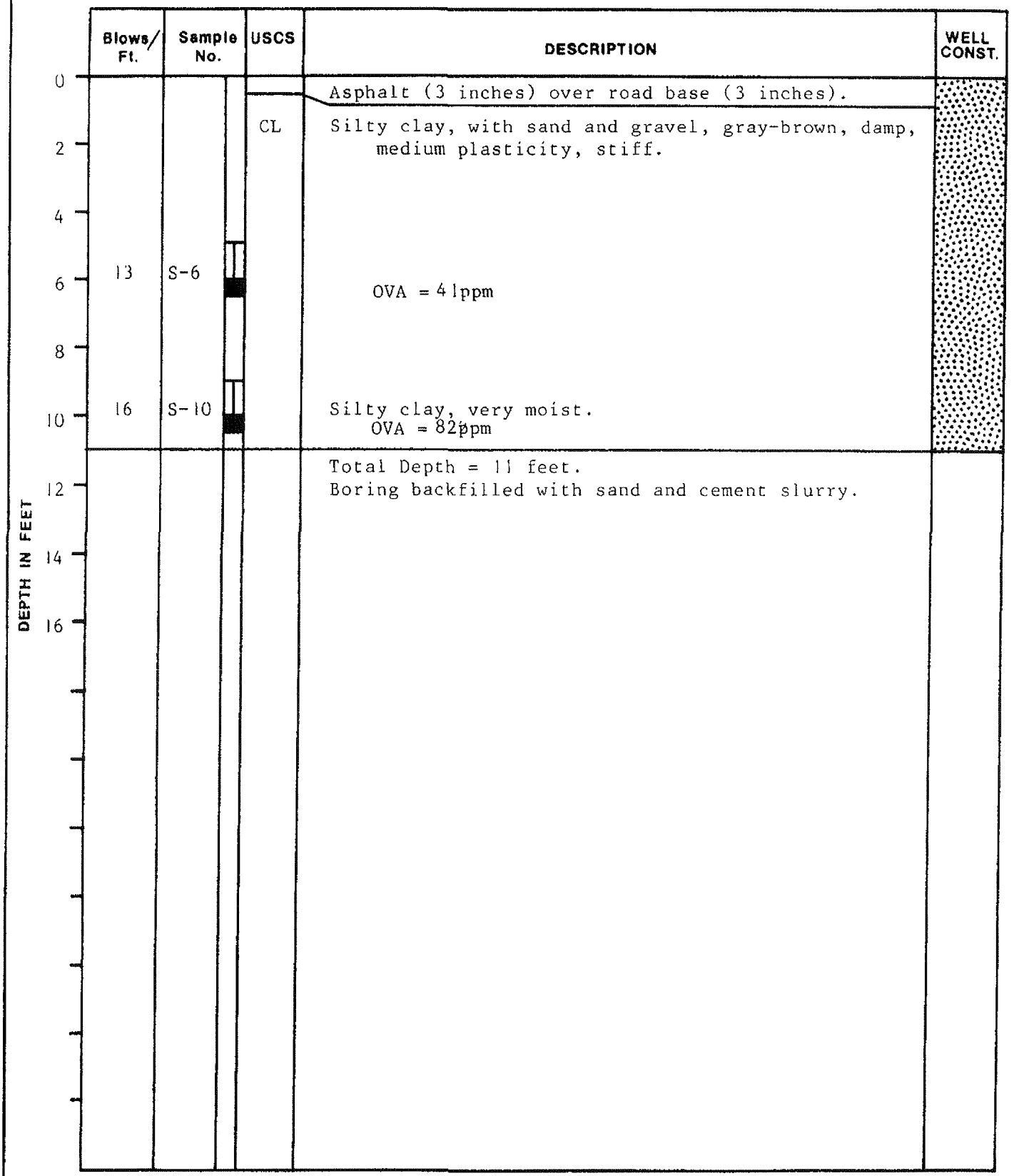
ARCO Station No. 374

Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-5



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PROJECT NO. 18039-1

LOG OF BORING B - 3

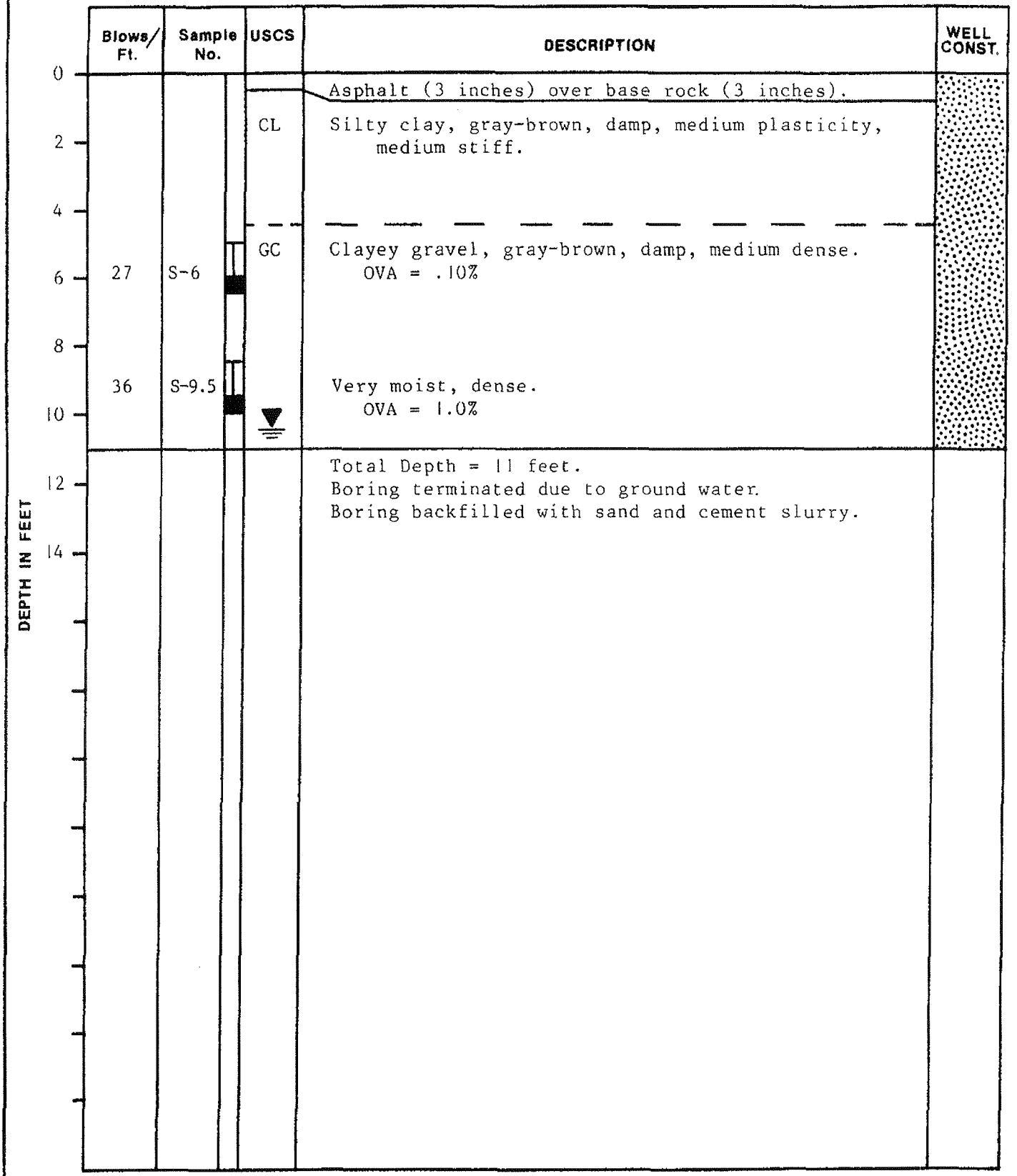
ARCO Station No. 374

Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-6



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PROJECT NO. 18039-1

LOG OF BORING B - 4

ARCO Station No. 374

Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-7

Total depth of boring: 28-1/2 feet **Diameter of boring:** 11 inches **Date drilled:** 7-6-89

Casing diameter: 4 inches **Length:** 27 feet **Slot size:** 0.020-inch

Screen diameter: 4 inches **Length:** 20 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. **Driller:** Rod and Leroy

Method Used: Hollow-Stem Auger **Field Geologist:** Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Asphalt.	
				CL	Silty clay, dark brown, slightly damp, medium plasticity, very stiff, rootlets, minor iron staining.	
2		4				
		12				
4	S-3.5	18	0			
6						
8		3		▼		
		5				
	S-8.5	12	110		Sandy clay, grading to clay with gravel, some mottling, slight plasticity, stiff, noticeable odor.	
10						
12				▽		
		15				
		18				
14	S-13.5	20	81		Slightly green, hard.	
16						
		8				
18		10				
	S-18.5	12	0		Silty clay, some sand and gravel, light brown, moist, medium plasticity, very stiff.	
20						

(Section continues downward)

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PROJECT NO. 18039-3

LOG OF BORING B-1/MW-1

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 4

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay, some sand and gravel, light brown, moist, medium plasticity, stiff.	
22		3 4				
	S-23	7	0		Trace gravel.	
24						
26						
		3 5				
28	S-27	7	0			
					Total Depth = 28-1/2 feet.	
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

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PROJECT NO. 18039-3

LOG OF BORING B-1/MW-1

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 5

Total depth of boring: 28-1/2 feet **Diameter of boring:** 11 inches **Date drilled:** 7-6-89

Casing diameter: 4 inches **Length:** 27 feet **Slot size:** 0.020-inch

Screen diameter: 4 inches **Length:** 20 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. **Driller:** Rod and Leroy

Method Used: Hollow-Stem Auger **Field Geologist:** Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
2				CL	Sandy clay, dark brown, damp, slight plasticity, very stiff.	
4	S-3.5	6 10 12	0			
6						
8	S-8.5	7 20 25	0		Silty clay, with some gravel, light brown, damp, hard.	
10						
12						
14	S-13.5	5 7 15	0		Very stiff.	
16						
18	S-18.5	7 20 25	0		Silty clay with gravel, brown, moist, hard.	
20					(Section continues downward)	

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-2/MW-2

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 6

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay with gravel, brown, moist, hard.	
22		3				
		5				
	S-23	12	0		Silty clay, some fine gravel, dark brown, stiff.	
24						
26						
		10				
		20			Silty clay with sand, medium brown, slightly damp, slight plasticity, hard.	
28	S-27	25	0			
					Total Depth = 28-1/2 feet.	
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-2/MW-2

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 7

Total depth of boring: 28-1/2 feet **Diameter of boring:** 11 inches **Date drilled:** 7-7-89

Casing diameter: 4 inches **Length:** 27 feet **Slot size:** 0.020-inch

Screen diameter: 4 inches **Length:** 20 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. **Driller:** Rod and Leroy

Method Used: Hollow-Stem Auger **Field Geologist:** Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0					Concrete (4 inches) over baserock (6 inches).	
2		3		CL	Silty clay, with sand and some gravel, medium brown, damp, slight plasticity, stiff, rootlets.	
		10				
4	S-3.5	10	0			
6						
8		2				
		4				
	S-8.5	8	0		Damp.	
10						
12		4				
		6				
14	S-13.5	10	8.5		Some mottling, moist.	
16						
18		6				
		5				
	S-18.5	12	9.1		Silty clay, minor gravel, light to medium brown, damp, medium plasticity, stiff.	
20					(Section continues downward)	

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-3/MW-3

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 8

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				CL	Silty clay, minor gravel, light to medium brown, damp, medium plasticity, stiff.	
22		6				
		8				
	S-23	12	0		Very stiff.	
24						
26						
		5				
		10				
28	S-27	12			Silty clay with sand, slight plasticity.	
					Total Depth = 28-1/2 feet.	
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-3/MW-3

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 9

Total depth of boring: 27-1/2 feet **Diameter of boring:** 11 inches **Date drilled:** 7-7-89

Casing diameter: 4 inches **Length:** 27 feet **Slot size:** 0.020-inch

Screen diameter: 4 inches **Length:** 20 feet **Material type:** Sch 40 PVC

Drilling Company: Kvilhaug Drilling Company, Inc. **Driller:** Rod and Leroy

Method Used: Hollow-Stem Auger **Field Geologist:** Becky and Keith

Signature of Registered Professional: _____

Registration No.: _____ **State:** CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
0						
2		2 3		CL	Silty clay, some sand and fine-grained gravel, very dark brown, slightly damp, slight plasticity, stiff.	
4	3.5	8	0			
6						
8		3 4				
10	8.5	10	0			
12		4				
14	S-13.5	10 25	41.6	GM	Sandy gravel, some silt, medium brown, very moist, medium dense, obvious odor.	
16						
18	S-18.5	15 15 20	0		Wet, dense.	
20					(Section continues downward)	

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-4/MW-4

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 10

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
				GM	Sandy gravel, some silt, medium brown, very moist, medium dense.	
22						
		6		CL	Silty clay, some sand and gravel, very stiff.	
		12				
	S-23.5	15	0			
24						
26		7				
		20				
	S-27	20	0		Grades more gravelly.	
28					Total Depth = 27-1/2 feet.	
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

Applied GeoSystems

PROJECT NO. 18039-3

LOG OF BORING B-4/MW-4

ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE 11

Depth of boring: 25-1/2 feet Diameter of boring: 10 inches Date drilled: 4/1/92

Well depth: 23 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 10 to 23 feet Slot size: 0.020-inch

Drilling Company: Gregg Drilling Driller: Steve Stone

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Paved street: Alcatraz Avenue	
0					Asphalt (6 inches).	
				SW	Gravelly sand, gray, damp, very dense: Fill (Baserock).	
2				CL	Silty clay with trace of coarse-grained sand, dark blue-gray, damp, medium plasticity, very stiff.	
4					Color change to light brown at 4 feet.	
6	S-5.5	7 18 22	0		Color change to light brown mottled with green, hard; caliche nodules present.	
8					Color change to green at 7-1/2 feet. (Water level - 4/9/92).	
10	S-10	5 10 20	0		Color change to dark green at 10 feet, moist.	
12						
					Color change to light brown at 13 feet.	
14	S-14.5	6 14 29	0	CL	Sandy clay with silt, light brown, very moist, medium plasticity, hard.	
16				CL	Gravelly clay with sand, light brown, very moist, low plasticity, hard.	
18				CL	Silty clay with sand, light brown, very moist, low plasticity, very stiff.	
20	S-19	8 10 12	0	SC	Clayey sand, brown, wet, medium dense.	
				CH	Silty clay, light brown, very moist, high plasticity, hard.	

(Section continues downward)

RESNA
Working to Restore Nature

PROJECT: 60025.05

LOG OF BORING B-5/MW-5
ARCO Station 374
6407 Telegraph Avenue
Oakland, California

PLATE 4

Depth	Sample No.	BLOWS	P.I.D.	USCS Code	Description	Well Const.
22				CH	Silty clay, light brown, very moist, high plasticity, hard.	
24	S-24.5	10 22 35	0	ML	Sandy silt with clay, brown, moist, low plasticity, hard.	
26					Total depth = 25-1/2 feet.	
28						
30						
32						
34						
36						
38						
40						
42						
44						
46						
48						
50						

RESNA
Working to Restore Nature

PROJECT 60025.05

LOG OF BORING B-5/MW-5
ARCO Station 374
6407 Telegraph Avenue
Oakland, California

PLATE
5

Depth of boring: 17 feet Diameter of boring: 10 inches Date drilled: 4/1/92

Well depth: 15 feet Material type: Sch 40 PVC Casing diameter: 4 inches

Screen interval: 5 to 15 feet Slot size: 0.020-inch

Drilling Company: Gregg Drilling Driller: Steve Stone

Method Used: Hollow-Stem Auger Field Geologist: Rob Campbell

Signature of Registered Professional:

Registration No.: RCE 044600 State: CA

Depth	Sample No.	Blows	P.I.D.	USCS Code	Description	Well Const.
					Paved Street: Irwin Court.	
0					Asphalt (7 inches).	
				SW	Gravelly sand, gray, damp, very dense: Fill (baserock).	
2				CL	Silty clay, dark brown mottled with green, moist, medium plasticity, stiff.	
4		4			Color change to light brown at 3-1/2 feet. (Water level - 4/9/92)	
	S-5.5	6 9	0	CL	Sandy clay with silt, light brown, moist, low plasticity, stiff; some organic fragments and root holes.	
6						
8		11		GP	Sandy gravel with some silt, light brown, wet, dense.	
10	S-10	18 25	0			
		4 8				
12		16	0			
14		6 12				
	S-15	18	0			
16		11 25		CL	Silty clay with gravel, light brown, very moist, medium plasticity, hard.	
		32	0			
18					Total depth = 17 feet.	
20						

RESNA
Working to Restore Nature

PROJECT: 60025.05

LOG OF BORING B-6/MW-6

ARCO Station 374
6407 Telegrapf Avenue
Oakland, California

PLATE 6

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	GP	GRAVEL (crushed rock fill material), fine gravel particle size, very wet	
						11			
						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.

SOIL BORING LOG — Boring No. B-13 — Sheet: 1 of 1

Client	ARCO 374	Date	September 21, 2009
Address	6407 Telegraph Avenue	Drilling Co.	RSI Drilling rig type: Powerprobe 6600
	Oakland, CA	Driller	Gilberto
Project No.	E374	Method	Geoprobe Hole Diameter: 2 inches
Logged By:	Collin Fischer	Sampler:	Continuous Core

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
					1	CL	Cleared to 6.5' bgs with air knife.	
					2			
					3		Silty clay with sand, CL, (0'-5.5'), dark gray, moist, medium plasticity 60% clay, 30% silt, 10% medium grained sand	
					4			
S	B-13 4.5'	N/A	1120	100	5			18
					6	SC		
S	B-13 6.5'	N/A	1130	100	7		Clayey sand with silt and gravel, SC, (5.5'-7.5'), dark gray, moist, HC odor 50% medium grained sand, 25% clay, 15% silt, 10% medium gravel	48
					8	ML		
S	B-13 8.5'	N/A	1515	100	9		Clayey silt, ML, (7.5'-8.5'), dark gray, moist, medium plasticity, HC odor 60% silt, 40% clay	3800
					10	SC		
					11		Clayey sand with silt and gravel, SC, (8.5'-12.5'), dark gray, moist to wet 50% coarse grained sand, 25% clay, 15% silt, 10% coarse gravel	
					12			
					13			
					14			
					15	CL	Silty clay with gravel, CL, (12.5'-18'), dark yellowish brown, moist, medium plasticity 70% clay 30% silt	
					16			
					17			
					18			
					19			
					20			

Recovery

Sample

Comments: Failed water sample from temporary screen interval from 8'-18' bgs.

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG — Boring No. B-14 — Sheet: 1 of 1

Client	ARCO 374	Date	September 21, 2009
Address	6407 Telegraph Avenue	Drilling Co.	RSI Drilling rig type: Powerprobe 6600
	Oakland, CA	Driller	Gilberto
Project No.	E374	Method	Geoprobe Hole Diameter: 2 inches
Logged By:	Collin Fischer	Sampler:	Continuous Core

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
					1	CL	Cleared to 6.5' bgs with air knife.	
					2			
					3		Silty clay with sand, CL, (0'-5.5'), dark gray, moist, medium plasticity 60% clay, 30% silt, 10% medium grained sand	
					4			
S	B-14 4.5'	N/A	0940	100	5			0
					6			
S	B-14 6.5'	N/A	0950	100	7	ML	Clayey silt, ML, (5.5'-7'), dark gray, moist, medium plasticity, HC odor 60% silt 40% clay	0
					8			
S	B-14 8.5'	N/A	1100	100	9		Clayey silt with sand and gravel, ML, (7'-11'), dark gray, moist, medium plasticity HC odor, 50% silt, 30% clay, 10% fine grained sand, 10% medium gravel	62
					10			
					11			
					12	SC		
					13			
					14			
					15		Clayey sand with silt and gravel, SC, dark yellowish brown, wet 50% coarse grained sand, 25% clay, 15% silt, 10% coarse gravel	
					16			
					17			
					18			
					19			
					20			

Recovery

Sample

Comments: Failed water sample from temporary screen intervals from 4.5'-14.5' and 8'-18' bgs.

STRATUS ENVIRONMENTAL, INC.

SOIL BORING LOG **Boring No. B-15** **Sheet: 1 of 1**

Client	ARCO 374	Date	September 21, 2009
Address	6407 Telegraph Avenue	Drilling Co.	RSI Drilling rig type: Powerprobe 6600
	Oakland, CA	Driller	Gilberto
Project No.	E374	Method	Geoprobe Hole Diameter: 2 inches
Logged By:	Collin Fischer	Sampler:	Continuous Core

Sample Type	Sample No.	Blow Count	Sample Time	Sample Recov.	Depth Scale	Lithologic Column	Descriptions of Materials and Conditions	PID (PPM)
					1	CL	Cleared to 6.5' bgs with air knife.	
					2			
					3		Silty clay with sand, CL, (0'-5.5'), dark gray, moist, medium plasticity 60% clay, 30% silt, 10% medium grained sand	
					4			
S	B-15 4.5'	N/A	1015	100	5			163
					6	ML		
S	B-15 6.5'	N/A	1025	100	7			82
					8		Clayey silt, ML, (5.5'-9.5'), dark gray, moist, medium plasticity, HC odor 60% silt, 40% clay	
S	B-15 8.5'	N/A	1210	100	9			146
					10	SC		
					11		Clayey sand with silt and gravel, SC, (9.5'-11.5'), dark gray, wet, HC odor 50% medium grained sand, 25% clay, 15% silt, 10% coarse gravel	
					12			
					13			
					14		Clayey sand with silt and gravel, SC, (11.5'-15'), dark yellowish brown, moist 50% medium to coarse grained sand, 25% clay, 15% silt, 10% coarse gravel	
					15			
					16	CL		
					17		Silty clay, CL, (15'-18'), dark yellowish brown, moist, medium plasticity 70% clay, 30% silt	
					18			
					19			
					20			

Recovery

Sample

Comments: Water sample taken from temporary screen interval (8'-18') bgs.

STRATUS ENVIRONMENTAL, INC.

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

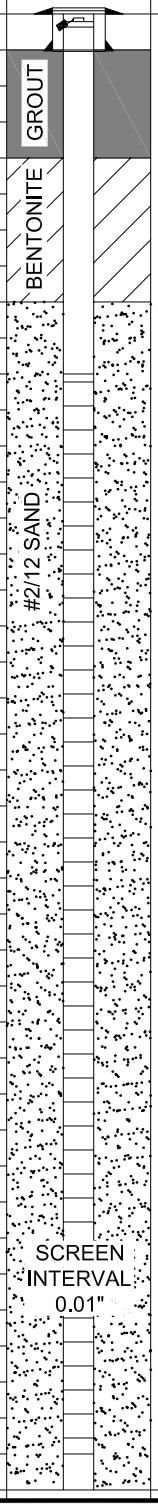
PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Aaron Sonerholm | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 11/24/2010 | START: 0745 | DRILLING COMPANY: Gregg | DRILLER: Jason

WELL ID: B-16/MW-7 | STOP: 1015 | DRILLING METHOD: Hollow Stem Auger | SAMPLE METHOD: Split Spoon



DEPTH (FEET)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
3	MW-7-3	0.0 ppm	Moist	Gray to Dk. Gray		Silty clay - clayey silt with sand	CL	
5	MW-7-5	0.0 ppm						
6	MW-7-6	8.7 ppm				Clayey silt with some sand and gravel	ML	
8	MW-7-8	385 ppm	Moist	Gray - Dk. gray	Stiff	Clayey silt with sand grading to silty sand and gravel		
9	MW-7-9.5	0.0 ppm	Moist	Brown - Reddish brown	Med. Dense	Sand, fine grained poorly graded with trace silt	SP	
11	MW-7-11	9.4 ppm		Brown Dark brown		Silty sand with gravel	SM	
12	MW-7-12.5	0.0 ppm	Very moist		Very stiff	Clayey silt and sand and gravel	CL	
14	MW-7-14	0.0 ppm						
15	MW-7-15.5	0.0 ppm				Silty sands with gravels, fine to coarse grained	SM	
17	MW-7-17	0.0 ppm						
18	MW-7-18.5	0.0 ppm	Very moist to wet		Stiff	Wet at 18 feet Silty clay with gravel	CL	
20	MW-7-20	0.0 ppm						

TOTAL BORING DEPTH: 20.0' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: 7.44'

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

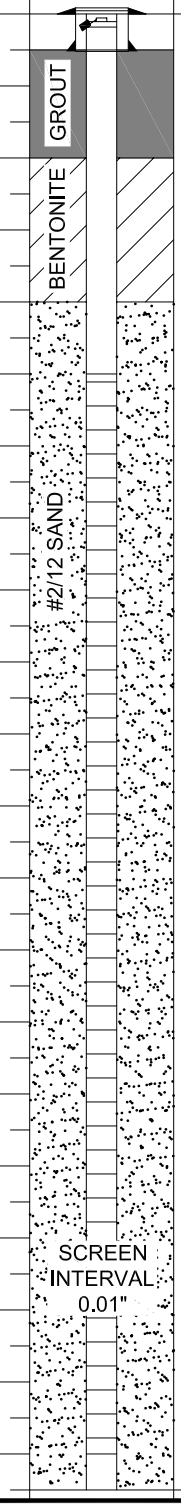
PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Aaron Sonerholm | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 11/23/2010 | START: 1300 | DRILLING COMPANY: Gregg | DRILLER: Jason

WELL ID: B-17/MW-8 | STOP: 1700 | DRILLING METHOD: Hollow Stem Auger | SAMPLE METHOD: Split Spoon



DEPTH (FEET)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
1–2				Gray to Dk. Gray				
3	MW-8-3	14.8 ppm				Silty clay with sand	CL	
4								
5	MW-8-5	26.3 ppm						
6	MW-8-6	79.0 ppm				Clayey silt with fine to coarse sand and gravel	ML	
7								
8	MW-8-8	563 ppm	▼ Moist	Greenish gray to dk. gray	Stiff			
9								
9–10	MW-8-9.5	334 ppm		Brown - Reddish brown	Med. dense	Sand, poorly graded, fine grained with trace silt	SP	
11	MW-8-11	710 ppm				Silty sand with occasional gravel	SM	
12	MW-8-12.5	8.1 ppm	Moist	Brown with greenish gray	Very stiff	Clayey silt	ML	
13								
14	MW-8-14	0.0 ppm		Brown - reddish brown				
15	MW-8-15.5	0.0 ppm	Very moist to wet	Greenish gray	Med. dense	Silty sand with gravel	SM	
16			▽			Wet at 16.5 feet		
17	MW-8-17	0.0 ppm						
18								
18–19	MW-8-18.5	0.0 ppm	Moist		Stiff	Silty Clay with fine to coarse grained sand	CL	
20	MW-8-20	0.0 ppm		Brown				

TOTAL BORING DEPTH: 20.0' | PAGE NO: 1 OF 1 | ▼ ESTIMATED GROUNDWATER DEPTH: 7.73'

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Aaron Sonerholm | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 11/23/2010 | START: 0910 | DRILLING COMPANY: Gregg | DRILLER: Jason

WELL ID: B-18/MW-9 | STOP: 1200 | DRILLING METHOD: Hollow Stem Auger | SAMPLE METHOD: Split Spoon

DEPTH (FEET)	MONITOR WELL CONSTRUCTION DIAMETER: 4"	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
1	GROUT			Moist	Gray to Dk. Gray		Silty clay		
2									
3	BENTONITE	MW-9-3	24.9 ppm					CL	
4									
5		MW-9-5	13.5 ppm				Silty clay		
6		MW-9-6	75.0 ppm				Silty clay with sand and gravel		
7	#2/12 SAND			▼					
8		MW-9-8	1386 ppm	Moist	Gray to Brown	Stiff	Clayey silt with occasional sand and gravel		
9							No recovery at 9.5'	ML	
10									
11		MW-9-11	2475 ppm		Brown - Reddish brown	Firm			
12		MW-9-12.5	3794 ppm		Dk. gray to greenish gray				
13									
14		MW-9-14	14.5 ppm	Moist	Brown	Med. dense	Silty sand with coarse gravel	SM	
15		MW-9-15.5	1.6 ppm	Very moist	Brown to Reddish brown				
16									
17	SCREEN INTERVAL 0.01"	MW-9-17	0.0 ppm	▽ Wet			Wet at 17 feet Sandy gravel with trace silt	GP	
18		MW-9-18.5	0.0 ppm			Med. dense	Silty sand with gravel	SM	
19									
20		MW-9-20	0.0 ppm			Hard	Silty clay with gravel	CL	

TOTAL BORING DEPTH: 20.0' | PAGE NO: 1 OF 1 | ▼ ESTIMATED GROUNDWATER DEPTH: 7.31'

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

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Aaron Sonerholm | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 11/23/2010 | START: 0745 | DRILLING COMPANY: Gregg | DRILLER: Jason

WELL ID: B-19 | STOP: 0843 | DRILLING METHOD: Hollow Stem Auger | SAMPLE METHOD: Split Spoon

DEPTH (FEET)	SOIL BORING	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
1	GROUT			Moist	Gray to Dk. Gray	Stiff	Silty clay with sand	CL	
2									
3		B-19-3	12.8 ppm						
4									
5		B-19-5	7.0 ppm				Silty clay or clayey silt with some and gravel		
6		B-19-6	17.5 ppm			Stiff	Clayey silt with coarse sand		
7								ML	
8		B-19-8	4602 ppm	▼	Gray to Dk. gray				
9		B-19-9.5	5896 ppm		Brown - Reddish brown				
10									
11		B-19-11	4558 ppm	Moist to very moist		Stiff	Silty clay - clayey silt with thin sand and fine gravel lenses	CL	
12		B-19-12.5	514 ppm						
13									
14		B-19-14	7.7 ppm		Brown - reddish brown		Silty clay - clayey silt with occasional coarse sand		
15		B-19-15.5	4.5 ppm			Very stiff	Silty sands, coarse sand and gravel	SM	
16									
17		B-19-17	0.0 ppm	Very moist to Wet ▽	Lt. Brown		Wet at 17.5 feet		
18		B-19-18.5	0.0 ppm			Stiff	Sandy silt to clayey silt		
19								ML	
20		B-19-20	0.0 ppm				Silt - clayey silt		

TOTAL BORING DEPTH: 20.0' | PAGE NO: 1 OF 1 | ▼ ESTIMATED GROUNDWATER DEPTH: 8.50'

A

A'

STATION BUILDING

MW-4

MW-9

MW-8

MW-7

165'

160'

155'

150'

145'

140'

135'

Elevation

TD = 27.5'

TD = 20'

TD = 20'

TD = 20'

Groundwater Elevation

ML/CL/CH - Low Permeability

SM/SC/GC/GM/SW/GP/SP - Moderate Permeability

Boring ID

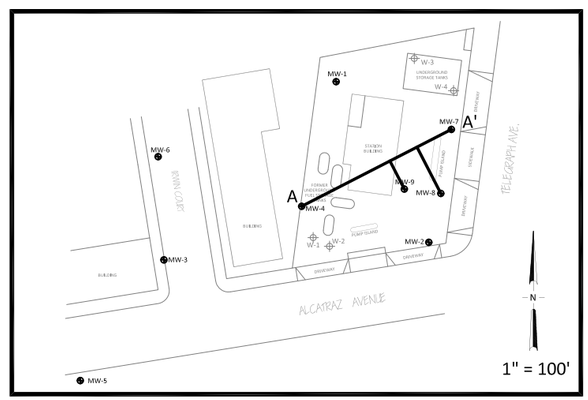
Extent of Boring

Extent of Well Screen

TD = Total Depth

0 10 20

HORIZONTAL SCALE (ft)
VERTICAL EXAGGERATION 2:1



Drawing 9

Geologic Cross Section A - A'

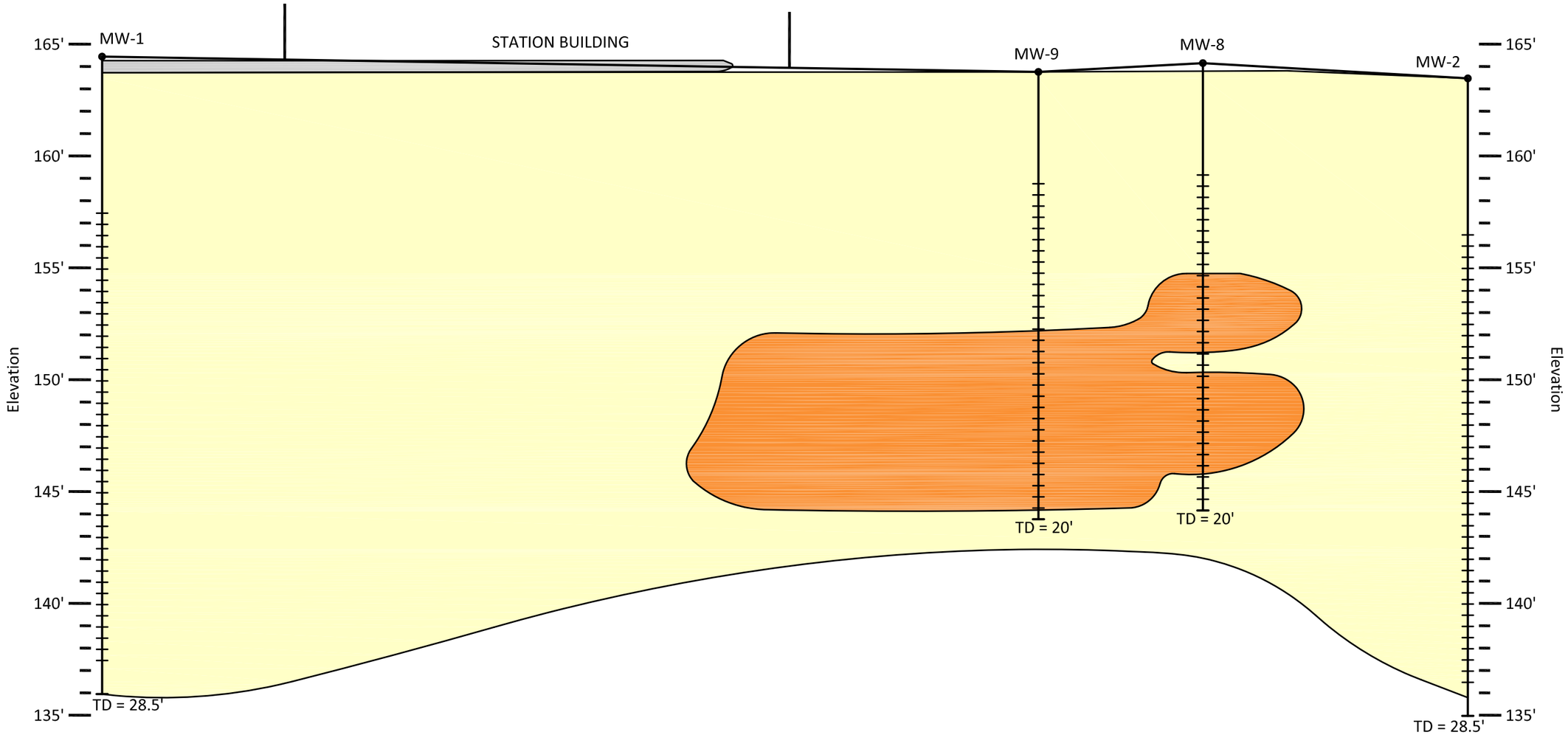
Station #374
6407 Telegraph Ave.
Oakland, California

BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688

Project No.: 06-88-602 Date: 5/28/2013

B

B'

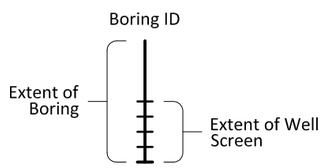


Groundwater Elevation

Asphalt/Backfill

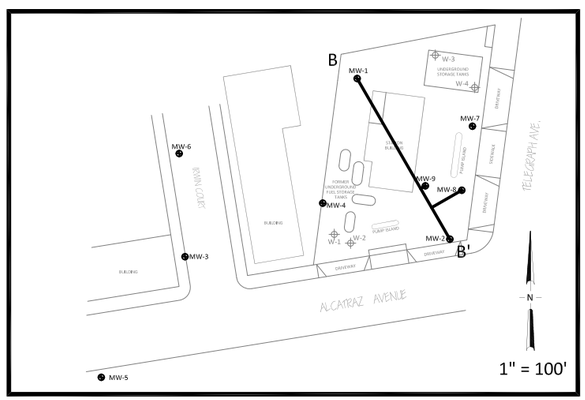
ML/CL/CH - Low Permeability

SM/SC/GC/GM/SW/GP/SP - Moderate Permeability



TD = Total Depth

HORIZONTAL SCALE (ft)
VERTICAL EXAGGERATION 2:1



Drawing 10

Geologic Cross Section B - B'

Station #374
6407 Telegraph Ave.
Oakland, California

BROADBENT
875 Cotting Lane, Suite G
Vacaville, California 95688
Project No.: 06-88-602 Date: 5/28/2013

APPENDIX C

Drilling Permits

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

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

Application Approved on: 11/26/2014 By jamesy

Permit Numbers: W2014-1136 to W2014-1137
Permits Valid from 12/04/2014 to 12/05/2014

Application Id:	1409698145824	**City of Project Site:**	Oakland
Site Location:	6407 Telegraph Ave, Oakland, California		
Project Start Date:	12/04/2014	**Completion Date:**	12/05/2014
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org		
Applicant:	Broadbent & Associates - James Ramos 4820 Business Center Drive, Suite 110, Fairfield, CA 94534	**Phone:**	707-455-7290
Property Owner:	Chuck Carmel 4 Centerpoint Drive, La Palma, CA 90623	**Phone:**	--
Client:	** same as Property Owner **		
Contact:	James Ramos	**Phone:** **Cell:**	707-342-5669

Total Due: $530.00
Receipt Number: WR2014-0489 **Total Amount Paid:** $530.00
Payer Name : Kristin Tidwell-Broadbent & Paid By: VISA **PAID IN FULL**
Associates

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 3 Boreholes
Driller: Gregg Drilling - Lic #: 485165 - Method: Hand **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2014-1136	11/26/2014	03/04/2015	3	2.00 in.	10.00 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. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

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 assigned inspector listed on the top of the permit 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. 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.

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

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.

Well Construction-Vapor monitoring well-Vapor monitoring well - 2 Wells
Driller: Gregg Drilling - Lic #: 485165 - Method: Hand **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2014-1137	11/26/2014	03/04/2015	SG-2A/B	2.00 in.	2.00 in.	1.00 ft	5.50 ft
W2014-1137	11/26/2014	03/04/2015	SG-3A/B	2.00 in.	2.00 in.	1.00 ft	5.50 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate state reporting-requirements related to well 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.

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. Permittee, 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.

5. 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.

6. No changes in construction procedures or well type shall change, as described on this permit application. This permit may be voided if it contains incorrect information.

7. Applicant shall submit the copies of the approved encroachment permit to this office within 10 days.

8. 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.

9. 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.

10. Vapor monitoring wells above water level constructed with tubing maybe be backfilled with pancake-batter consistency bentonite. Minimum surface seal thickness is two inches of cement grout around well box.

Vapor monitoring wells above water level constructed with pvc pipe shall have a minimum seal depth (Neat Cement Seal) of 2 feet below ground surface (BGS). Minimum surface seal thickness is two inches of cement grout around well box. All other conditions for monitoring well construction shall apply.

APPENDIX D

Soil Boring/Soil Vapor Logs

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/4/2014 | START: 1320 | DRILLING COMPANY: Gregg | DRILLER: John Hancock

WELL ID: B-1 | STOP: 1345 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: Hand Auger

DEPTH (FEET)	BORING DIAMETER: 3.5"	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
1	GROUT			Slightly Moist	Gray	Stiff/Firm	10.5" Asphalt Clay	CL	Mild Hydrocarbon Odor
2			4.4		Gray	Stiff/Firm	Clay with Trace Organic Material and Trace Fine Sand	CL	Mild Hydrocarbon Odor
3		B-1-141204 @3'-3.5'	25		Mottled Gray/ Dark Gray	Stiff/Firm	Clay with Trace Fine Sand and 5% 1" Diameter Gravels	CL	Mild Hydrocarbon Odor
4			32.6						
5			14.8		Green/ Gray	Stiff/Firm	Silt (85%), Sand (10%), $\frac{1}{2}$" Diameter Gravel (<5%)	ML	None
6			18.6		Green/ Gray	Stiff/Firm	Silt (85%), Sand (10%), 2" Diameter Gravel (<5%)	ML	
7			14.3						
8			32.5				Refusal at 8.5'		
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 8.5' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: NA

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/4/2014 | START: 1510 | DRILLING COMPANY: Gregg | DRILLER: John Hancock

WELL ID: B-1A | STOP: 1540 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: Hand Auger

DEPTH (FEET)	BORING DIAMETER: 3.5"	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS, ODORS & BLOW COUNT
1	GROUT			Slightly Moist	Gray	Stiff	10.5" Asphalt Clay	CL	Mild Hydrocarbon Odor
2							Clay with Trace Fine Sand	CL	
3		B-1A-141204 @3'-3.5'	78.3				Clay with Trace Fine Sand and 5% 1" Diameter Gravels	CL	Strong Hydrocarbon Odor
4					Green/ Dark Gray		Silt (85%), Sand (10%), ½" Diameter Gravel (<5%)	ML	
5					Green/ Gray		Silt (85%), Sand (10%), with Trace Masonry Brick	ML	
6							Refusal at 6'		
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 6' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: NA

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 374
SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California
PROJECT NUMBER: 06-88-602
LEGAL DESC: _____ APN: _____
LOGGED BY: Alex Martinez
FACILITY ID OR WAIVER: _____ NOI NUMBER: _____
DATE: 1/16/2015 START: 0840
DRILLING COMPANY: Gregg DRILLER: Lu Menjivar
WELL ID: B-1B STOP: 1015
DRILLING METHOD: Geoprobe SAMPLE METHOD: Geoprobe

DEPTH (FEET)	BORING DIAMETER: 3.5"	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
							12" Asphalt		
1	GROUT			Slightly Moist	Gray	Stiff	Clay, High Plasticity (100,0,0,0)	CL	None
2									
3			8.0	Moist	Gray	Stiff	Clay with Trace Gravel and Silt (95,4,<1,0)	CL	Slight Hydrocarbon Odor
4			1.9	Slightly Moist	Greenish Gray	Stiff	Silty Clay with Trace Sand and Gravel (85,10,1,<4)	CL	Moderate Hydrocarbon Odor
5									
6									
7			3.3	Slightly Moist	Greenish Brown	Stiff	Silty Clay with Trace Sand and Gravel (85,10,1,<4)		
8									
9									
10			51.6	Slightly Moist	Greenish Brown	Stiff	Silty Clay with Trace Sand and Trace Sub angular and Sub rounded Gravel (85,10,1,<4)	CL	Moderate Hydrocarbon Odor
11									
12			51.6	Slightly Moist	Greenish Brown	Stiff	Silty Clay with Trace Sand and Gravel (85,10,1,4)	CL	Moderate Hydrocarbon Odor
13			549	Moist	Light Brown	Firm	Clay, Medium to High Plasticity with Some Gravel and Sand (95,0,0,<5)	CL	None
14				Moist	Light Brown	Soft	Sandy Clay, Medium Plasticity (85,0,0,15)	CL	None
15				Moist	Light Brown	Stiff	Clay, High Plasticity (100,0,0,0)	CL	None
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 15' PAGE NO: 1 OF 1 ESTIMATED GROUNDWATER DEPTH: 13.5

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/4/2014 | START: 0900 | DRILLING COMPANY: Gregg | DRILLER: John Hancock

WELL ID: B-2 | STOP: 1130 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: Hand Auger

DEPTH (FEET)	BORING DIAMETER: 3.5"	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS, ODORS & BLOW COUNT
1	GROUT		1.3	Moist	Gray	Stiff	9" Asphalt Clay	CL	Mild Hydrocarbon Odor
2			1.3	Moist	Gray	Stiff	Clay with 15% $\frac{1}{4}$" Diameter Angular Gravel	CL	
3			2.3						
4		B-2-141204 @3'-3.5'	2.1	Moist	Gray	Stiff	33% Silt, 32% Clay, 25% $\frac{1}{4}$" Diameter, Gravel10% Sand Light Green Mottling	ML	Musty Odor
5			2.0		Greenish Gray		Clay	CL	
6			2.1		Light Greenish Gray		80% Silt with 20% Fine Sand	ML	
7			3.1				75% Silt with 20% Fine Sand and 5% Gravel 2" Diameter	ML	
8		B-2-141204 @8'-8.5'	8.2				55% Silt with 20% Fine Sand and 25% Gravel 1.5" Diameter	ML	
9			71						
10			686	Wet		Dense	80% 1.5" Diameter Gravel with 15% Sand and 5% Silt	GP	Strong Hydrocarbon Odor
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 10.5' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: 9.5

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

BROADBENT

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/10/2014 | START: 0900 | DRILLING COMPANY: Gregg | DRILLER: Rob

WELL ID: B-3 | STOP: 1100 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: Hand Auger

DEPTH (FEET)	BORING DIAMETER: 3.5"	SAMPLE ID	PID (ppm)	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE / CLASSIFICATION		REMARKS, ODORS & BLOW COUNT
1				Slightly Moist	Brown	Soft	8" Concrete 85% Silt, 15% Clay with Trace Fine Sand	ML	No Odor
			4.0						
2			5.0		Yellowish Brown	Medium Stiff	40% Fine Sand, 40% 1.5" Diameter Gravels, 15% Silt and 5% Clay	SW	No Odor
3		B-3-141210 @3'-3.5'	8.1						
4	GROUT								
			5.3	Moist		Soft			
5		B-3-141210 @5'-5.5'	10.3	Wet		Very Soft			No Odor
6 ▼									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

TOTAL BORING DEPTH: 6' | PAGE NO: 1 OF 1 | ▼ ESTIMATED GROUNDWATER DEPTH: 5'8"

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

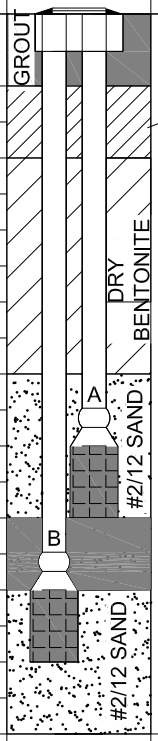
PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/10/2014 | START: 0900 | DRILLING COMPANY: Gregg | DRILLER: Rob

WELL ID: SG-2A/B | STOP: 1300 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: N/A



DEPTH (FEET)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
						3" Concrete		
1			Slightly Moist	Yellow Brown	Medium Stiff	40% Fine Sand, 40% $\frac{1}{2}$" Diameter Gravel, 15% Silt, 5% Clay	SW	None
2		5.4						
3		8.2						
4		8.9						
5		6.9						

TOTAL BORING DEPTH: 5.0' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: NA

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

LITHOLOGIC AND MONITOR WELL CONSTRUCTION LOG

BROADBENT

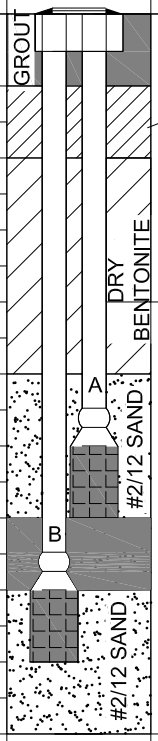
PROJECT NAME: BP 374 | SITE ADDRESS: 6407 Telegraph Avenue, Oakland, California

PROJECT NUMBER: 06-88-602 | LEGAL DESC: | APN:

LOGGED BY: Lu Damerell | FACILITY ID OR WAIVER: | NOI NUMBER:

DATE: 12/10/2014 | START: 0900 | DRILLING COMPANY: Gregg | DRILLER: Rob

WELL ID: SG-3 | STOP: 1300 | DRILLING METHOD: Hand Auger | SAMPLE METHOD: N/A



DEPTH (FEET)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
						3" Concrete		
1		11.2	Slightly Moist	Brown	Soft	Silt (85%), Clay (15%) with Trace Fine Sand	ML	None
2		12.7	Slightly Moist	Light Brown	Medium Stiff	Silt (85%), Clay (15%) with Trace Fine Sand	ML	None
3		7.4	Slightly Moist	Yellow Brown	Medium Stiff	Fine Sand (40%), 1.5" Diameter Gravel (40%) Silt (15%), Clay (5%), with Trace Roots	SW	None
4		6.4						
5		5.8	Moist					

TOTAL BORING DEPTH: 5.0' | PAGE NO: 1 OF 1 | ESTIMATED GROUNDWATER DEPTH: NA

APPENDIX E

Soil Vapor Sampler Notes

BROADBENT

DAILY REPORT

Page ____ of ____

Project: BP 374 Project No.: 010-88-602

Field Representative(s): James R / Jessica C. Day: Wednesday Date: 2/25/15

Time Onsite: From: 1230 To: 330 ; From: ____ To: ____ ; From: ____ To: ____

X Signed HASP X Safety Glasses X Hard Hat X Steel Toe Boots X Safety Vest

X UST Emergency System Shut-off Switches Located X Proper Gloves

X Proper Level of Barricading ___ Other PPE (describe) ____

Weather: Sunny

Equipment In Use: helium detector

Visitors: ____

TIME:	WORK DESCRIPTION:
1230	- Arrived onsite, reviewed safety docs, TRA
1245	- Set up at SG-3 (at apartment complex drive way)
	opened well box and noticed wet bentonite and
	dirt at top of casing instead of dry concrete.
	Started to purge SG-3B (deep) first and
	encountered water at first suction. Stopped.
	Started to purge SG-3A (shallow) tube first and encountered
	water at first pump. Stopped.
1330	- Set up at SG-2
	Well Box had wet bentonite at top of casing as well.
	Started to purge shallow casing tube first.
1345	- Sampled from shallow tube (SG-2A)
1355	- Started to purge deep casing tube and encountered
	water. (SG-2B)
1410	- measured DTW @ MW-4 on site
1420	Set up @ SG-1A on site
1450	Sampled SG-1A
330	left site

Signature: ____

Revision: 1/24/2012

BROADBENT

SOIL VAPOR SAMPLING DATA SHEET

Date: 2-25-15 Site Name: BP 374

Personnel: JR LC Project No.: 06-88-002

Weather: overcast/sunny (short)

Well ID: SG-2A

Canister #: A6081 Flow Controller #: 7445

Time	Helium Concentration (%)	Summa Canister Pressure (in.Hg)	Comments
1346	27.7	-30	- held for 5 mins w/15in Hg
1348	28.4	-24	- purged 3 casing volumes
1349	29.4	-18	
1350	27.1	-11	
1351	28.3	-5	

BROADBENT

SOIL VAPOR SAMPLING DATA SHEET

Date: 2/25/15
Personnel: JD KJC
Weather: Sunny

Site Name: BP 374
Project No.: 06-88-602

Well ID: SG-1A *onsite
Canister #: 5066

Flow Controller #: 7229

Time	Helium Concentration (%)	Summa Canister Pressure (in.Hg)	Comments
1452	20.8	-29	-held at 15 in Hg for 5 min
1453	23.2	-24	-purged 3 casing volumes
1454	23.7	-18	
1455	23.6	-11	
1456	23.1	-6	

APPENDIX F

Laboratory Analytical Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

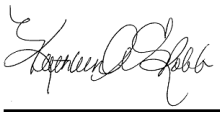
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-95772-1
Client Project/Site: ARCO 0374, Oakland

For:
Broadbent & Associates, Inc.
4820 Business Center Drive
#110
Fairfield, California 94534

Attn: Kristene Tidwell



Authorized for release by:
12/19/2014 12:01:28 PM

Kathleen Robb, Project Manager II
(949)261-1022
kathleen.robb@testamericainc.com

Table of Contents

Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-95772-3	B-2-141204@3'-3.5'	Solid	12/04/14 10:26	12/08/14 10:50
440-95772-4	B-2-141204@8'-8.5'	Solid	12/04/14 10:59	12/08/14 10:50
440-95772-5	B-2-141204	Water	12/04/14 12:15	12/08/14 10:50

Job ID: 440-95772-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-95772-1

Comments
No additional comments.

Receipt
The samples were received on 12/8/2014 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Client Sample ID: B-2-141204@3'-3.5'
Date Collected: 12/04/14 10:26
Date Received: 12/08/14 10:50

Lab Sample ID: 440-95772-3
Matrix: Solid

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/09/14 13:28	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/09/14 13:28	1
Benzene	ND		0.0010		mg/Kg			12/09/14 13:28	1
Ethanol	ND		0.20		mg/Kg			12/09/14 13:28	1
Ethylbenzene	ND		0.0010		mg/Kg			12/09/14 13:28	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/09/14 13:28	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/09/14 13:28	1
m,p-Xylene	ND		0.0020		mg/Kg			12/09/14 13:28	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/09/14 13:28	1
Naphthalene	ND		0.0020		mg/Kg			12/09/14 13:28	1
o-Xylene	ND		0.0010		mg/Kg			12/09/14 13:28	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/09/14 13:28	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/09/14 13:28	1
Toluene	ND		0.0010		mg/Kg			12/09/14 13:28	1
Xylenes, Total	ND		0.0020		mg/Kg			12/09/14 13:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*79 - 120*		*12/09/14 13:28*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 120*		*12/09/14 13:28*	*1*
Toluene-d8 (Surr)	*107*		*79 - 123*		*12/09/14 13:28*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.39		mg/Kg			12/17/14 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*65 - 140*		*12/17/14 01:55*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Client Sample ID: B-2-141204@8'-8.5'
Lab Sample ID: 440-95772-4
Date Collected: 12/04/14 10:59
Matrix: Solid
Date Received: 12/08/14 10:50

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/09/14 13:57	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/09/14 13:57	1
Benzene	ND		0.0010		mg/Kg			12/09/14 13:57	1
Ethanol	ND		0.20		mg/Kg			12/09/14 13:57	1
Ethylbenzene	ND		0.0010		mg/Kg			12/09/14 13:57	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/09/14 13:57	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/09/14 13:57	1
m,p-Xylene	ND		0.0020		mg/Kg			12/09/14 13:57	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/09/14 13:57	1
Naphthalene	ND		0.0020		mg/Kg			12/09/14 13:57	1
o-Xylene	ND		0.0010		mg/Kg			12/09/14 13:57	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/09/14 13:57	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/09/14 13:57	1
Toluene	ND		0.0010		mg/Kg			12/09/14 13:57	1
Xylenes, Total	ND		0.0020		mg/Kg			12/09/14 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*79 - 120*		*12/09/14 13:57*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 120*		*12/09/14 13:57*	*1*
Toluene-d8 (Surr)	*102*		*79 - 123*		*12/09/14 13:57*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.38		mg/Kg			12/17/14 03:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*65 - 140*		*12/17/14 03:22*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Client Sample ID: B-2-141204
Date Collected: 12/04/14 12:15
Date Received: 12/08/14 10:50

Lab Sample ID: 440-95772-5
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		50		ug/L			12/14/14 20:23	100
1,2-Dichloroethane	ND		50		ug/L			12/14/14 20:23	100
Benzene	**3900**		50		ug/L			12/14/14 20:23	100
Ethanol	ND		15000		ug/L			12/14/14 20:23	100
Ethylbenzene	**3600**		50		ug/L			12/14/14 20:23	100
Ethyl-t-butyl ether (ETBE)	ND		50		ug/L			12/14/14 20:23	100
Isopropyl Ether (DIPE)	ND		50		ug/L			12/14/14 20:23	100
m,p-Xylene	**990**		100		ug/L			12/14/14 20:23	100
Methyl-t-Butyl Ether (MTBE)	ND		50		ug/L			12/14/14 20:23	100
Naphthalene	**1900**		100		ug/L			12/14/14 20:23	100
o-Xylene	**280**		50		ug/L			12/14/14 20:23	100
Tert-amyl-methyl ether (TAME)	ND		50		ug/L			12/14/14 20:23	100
tert-Butyl alcohol (TBA)	ND		1000		ug/L			12/14/14 20:23	100
Toluene	**380**		50		ug/L			12/14/14 20:23	100
Xylenes, Total	**1300**		100		ug/L			12/14/14 20:23	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/14/14 20:23*	*100*
Dibromofluoromethane (Surr)	*91*		*76 - 132*		*12/14/14 20:23*	*100*
Toluene-d8 (Surr)	*102*		*80 - 128*		*12/14/14 20:23*	*100*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**24000**		5000		ug/L			12/15/14 17:28	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*65 - 140*		*12/15/14 17:28*	*100*

Method Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Method	Method Description	Protocol	Laboratory
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Client Sample ID: B-2-141204@3'-3.5'

Lab Sample ID: 440-95772-3

Date Collected: 12/04/14 10:26

Matrix: Solid

Date Received: 12/08/14 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	4.97 g	10 mL	223344	12/09/14 13:28	YK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5.17 g	10 mL	225092	12/17/14 01:55	IM	TAL IRV

Client Sample ID: B-2-141204@8'-8.5'

Lab Sample ID: 440-95772-4

Date Collected: 12/04/14 10:59

Matrix: Solid

Date Received: 12/08/14 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	4.96 g	10 mL	223344	12/09/14 13:57	YK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5.2 g	10 mL	225092	12/17/14 03:22	IM	TAL IRV

Client Sample ID: B-2-141204

Lab Sample ID: 440-95772-5

Date Collected: 12/04/14 12:15

Matrix: Water

Date Received: 12/08/14 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		100	10 mL	10 mL	224567	12/14/14 20:23	TN	TAL IRV
Total/NA	Analysis	8015B/5030B		100	10 mL	10 mL	224635	12/15/14 17:28	IM	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-223344/3
Matrix: Solid
Analysis Batch: 223344

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/09/14 07:58	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/09/14 07:58	1
Benzene	ND		0.0010		mg/Kg			12/09/14 07:58	1
Ethanol	ND		0.20		mg/Kg			12/09/14 07:58	1
Ethylbenzene	ND		0.0010		mg/Kg			12/09/14 07:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/09/14 07:58	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/09/14 07:58	1
m,p-Xylene	ND		0.0020		mg/Kg			12/09/14 07:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/09/14 07:58	1
Naphthalene	ND		0.0020		mg/Kg			12/09/14 07:58	1
o-Xylene	ND		0.0010		mg/Kg			12/09/14 07:58	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/09/14 07:58	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/09/14 07:58	1
Toluene	ND		0.0010		mg/Kg			12/09/14 07:58	1
Xylenes, Total	ND		0.0020		mg/Kg			12/09/14 07:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*79 - 120*		*12/09/14 07:58*	*1*
Dibromofluoromethane (Surr)	*95*		*60 - 120*		*12/09/14 07:58*	*1*
Toluene-d8 (Surr)	*102*		*79 - 123*		*12/09/14 07:58*	*1*

Lab Sample ID: LCS 440-223344/4
Matrix: Solid
Analysis Batch: 223344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			0.0500	0.0492		mg/Kg		98	70 - 130		
1,2-Dichloroethane			0.0500	0.0454		mg/Kg		91	60 - 140		
Benzene			0.0500	0.0449		mg/Kg		90	65 - 120		
Ethanol			2.50	2.26		mg/Kg		90	35 - 160		
Ethylbenzene			0.0500	0.0461		mg/Kg		92	70 - 125		
Ethyl-t-butyl ether (ETBE)			0.0500	0.0480		mg/Kg		96	60 - 140		
Isopropyl Ether (DIPE)			0.0500	0.0460		mg/Kg		92	60 - 140		
m,p-Xylene			0.0500	0.0494		mg/Kg		99	70 - 125		
Methyl-t-Butyl Ether (MTBE)			0.0500	0.0479		mg/Kg		96	60 - 140		
Naphthalene			0.0500	0.0500		mg/Kg		100	55 - 135		
o-Xylene			0.0500	0.0477		mg/Kg		95	70 - 125		
Tert-amyl-methyl ether (TAME)			0.0500	0.0488		mg/Kg		98	60 - 145		
tert-Butyl alcohol (TBA)			0.500	0.481		mg/Kg		96	70 - 135		
Toluene			0.0500	0.0451		mg/Kg		90	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*79 - 120*
Dibromofluoromethane (Surr)	*94*		*60 - 120*
Toluene-d8 (Surr)	*99*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-95478-A-4 MS
Matrix: Solid
Analysis Batch: 223344

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		0.0497	0.0481		mg/Kg		97	65 - 140
1,2-Dichloroethane	ND		0.0497	0.0442		mg/Kg		89	60 - 150
Benzene	ND		0.0497	0.0454		mg/Kg		90	65 - 130
Ethanol	ND		2.49	2.23		mg/Kg		90	30 - 165
Ethylbenzene	ND		0.0497	0.0453		mg/Kg		91	70 - 135
Ethyl-t-butyl ether (ETBE)	ND		0.0497	0.0491		mg/Kg		99	60 - 145
Isopropyl Ether (DIPE)	ND		0.0497	0.0472		mg/Kg		95	60 - 150
m,p-Xylene	ND		0.0497	0.0474		mg/Kg		95	70 - 130
Methyl-t-Butyl Ether (MTBE)	ND		0.0497	0.0480		mg/Kg		94	55 - 155
Naphthalene	ND		0.0497	0.0393		mg/Kg		79	40 - 150
o-Xylene	ND		0.0497	0.0456		mg/Kg		92	65 - 130
Tert-amyl-methyl ether (TAME)	ND		0.0497	0.0487		mg/Kg		98	60 - 150
tert-Butyl alcohol (TBA)	ND		0.497	0.461		mg/Kg		93	65 - 145
Toluene	ND		0.0497	0.0455		mg/Kg		92	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*79 - 120*
Dibromofluoromethane (Surr)	*95*		*60 - 120*
Toluene-d8 (Surr)	*104*		*79 - 123*

Lab Sample ID: 440-95478-A-4 MSD
Matrix: Solid
Analysis Batch: 223344

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		0.0499	0.0523		mg/Kg		105	65 - 140	8	25
1,2-Dichloroethane	ND		0.0499	0.0463		mg/Kg		93	60 - 150	5	25
Benzene	ND		0.0499	0.0463		mg/Kg		92	65 - 130	2	20
Ethanol	ND		2.50	2.32		mg/Kg		93	30 - 165	4	40
Ethylbenzene	ND		0.0499	0.0462		mg/Kg		93	70 - 135	2	25
Ethyl-t-butyl ether (ETBE)	ND		0.0499	0.0510		mg/Kg		102	60 - 145	4	30
Isopropyl Ether (DIPE)	ND		0.0499	0.0495		mg/Kg		99	60 - 150	5	25
m,p-Xylene	ND		0.0499	0.0491		mg/Kg		98	70 - 130	3	25
Methyl-t-Butyl Ether (MTBE)	ND		0.0499	0.0511		mg/Kg		100	55 - 155	6	35
Naphthalene	ND		0.0499	0.0408		mg/Kg		82	40 - 150	4	40
o-Xylene	ND		0.0499	0.0472		mg/Kg		95	65 - 130	3	25
Tert-amyl-methyl ether (TAME)	ND		0.0499	0.0517		mg/Kg		104	60 - 150	6	25
tert-Butyl alcohol (TBA)	ND		0.499	0.475		mg/Kg		95	65 - 145	3	30
Toluene	ND		0.0499	0.0477		mg/Kg		96	70 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*79 - 120*
Dibromofluoromethane (Surr)	*94*		*60 - 120*
Toluene-d8 (Surr)	*108*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-224567/4
Matrix: Water
Analysis Batch: 224567

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/14/14 11:58	1
1,2-Dichloroethane	ND		0.50		ug/L			12/14/14 11:58	1
Benzene	ND		0.50		ug/L			12/14/14 11:58	1
Ethanol	ND		150		ug/L			12/14/14 11:58	1
Ethylbenzene	ND		0.50		ug/L			12/14/14 11:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			12/14/14 11:58	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			12/14/14 11:58	1
m,p-Xylene	ND		1.0		ug/L			12/14/14 11:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			12/14/14 11:58	1
Naphthalene	ND		1.0		ug/L			12/14/14 11:58	1
o-Xylene	ND		0.50		ug/L			12/14/14 11:58	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			12/14/14 11:58	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			12/14/14 11:58	1
Toluene	ND		0.50		ug/L			12/14/14 11:58	1
Xylenes, Total	ND		1.0		ug/L			12/14/14 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/14/14 11:58*	*1*
Dibromofluoromethane (Surr)	*90*		*76 - 132*		*12/14/14 11:58*	*1*
Toluene-d8 (Surr)	*101*		*80 - 128*		*12/14/14 11:58*	*1*

Lab Sample ID: LCS 440-224567/5
Matrix: Water
Analysis Batch: 224567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	21.5		ug/L		86	70 - 130		
1,2-Dichloroethane			25.0	19.9		ug/L		80	57 - 138		
Benzene			25.0	21.6		ug/L		86	68 - 130		
Ethanol			1250	1140		ug/L		91	50 - 149		
Ethylbenzene			25.0	20.6		ug/L		82	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	22.9		ug/L		91	60 - 136		
Isopropyl Ether (DIPE)			25.0	23.1		ug/L		93	58 - 139		
m,p-Xylene			25.0	21.8		ug/L		87	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	21.0		ug/L		84	63 - 131		
Naphthalene			25.0	21.2		ug/L		85	60 - 140		
o-Xylene			25.0	21.4		ug/L		86	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	22.2		ug/L		89	57 - 139		
tert-Butyl alcohol (TBA)			250	224		ug/L		90	70 - 130		
Toluene			25.0	20.4		ug/L		82	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*90*		*76 - 132*
Toluene-d8 (Surr)	*97*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96534-C-3 MS
Matrix: Water
Analysis Batch: 224567

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	2.7		25.0	27.6		ug/L		99	70 - 131
1,2-Dichloroethane	0.65		25.0	23.4		ug/L		91	56 - 146
Benzene	ND		25.0	24.6		ug/L		99	66 - 130
Ethanol	ND		1250	1310		ug/L		105	54 - 150
Ethylbenzene	ND		25.0	24.5		ug/L		98	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.8		ug/L		103	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	26.1		ug/L		104	64 - 138
m,p-Xylene	ND		25.0	26.4		ug/L		106	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	24.1		ug/L		96	70 - 130
Naphthalene	ND		25.0	25.0		ug/L		100	60 - 140
o-Xylene	ND		25.0	25.1		ug/L		100	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	24.9		ug/L		100	68 - 133
tert-Butyl alcohol (TBA)	22		250	282		ug/L		104	70 - 130
Toluene	ND		25.0	24.5		ug/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Dibromofluoromethane (Surr)	*87*		*76 - 132*
Toluene-d8 (Surr)	*100*		*80 - 128*

Lab Sample ID: 440-96534-C-3 MSD
Matrix: Water
Analysis Batch: 224567

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	2.7		25.0	28.8		ug/L		104	70 - 131	4	25
1,2-Dichloroethane	0.65		25.0	23.4		ug/L		91	56 - 146	0	20
Benzene	ND		25.0	24.9		ug/L		99	66 - 130	1	20
Ethanol	ND		1250	1300		ug/L		104	54 - 150	0	30
Ethylbenzene	ND		25.0	25.4		ug/L		102	70 - 130	4	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.8		ug/L		103	70 - 130	0	25
Isopropyl Ether (DIPE)	ND		25.0	26.6		ug/L		106	64 - 138	2	25
m,p-Xylene	ND		25.0	27.0		ug/L		108	70 - 133	2	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	23.9		ug/L		96	70 - 130	1	25
Naphthalene	ND		25.0	25.3		ug/L		101	60 - 140	1	30
o-Xylene	ND		25.0	25.1		ug/L		100	70 - 133	0	20
Tert-amyl-methyl ether (TAME)	ND		25.0	25.4		ug/L		102	68 - 133	2	30
tert-Butyl alcohol (TBA)	22		250	286		ug/L		105	70 - 130	1	25
Toluene	ND		25.0	24.8		ug/L		99	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*88*		*76 - 132*
Toluene-d8 (Surr)	*101*		*80 - 128*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-224635/5
Matrix: Water
Analysis Batch: 224635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			12/15/14 09:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*65 - 140*		*12/15/14 09:58*	*1*

Lab Sample ID: LCS 440-224635/4
Matrix: Water
Analysis Batch: 224635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	825		ug/L		103	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*65 - 140*

Lab Sample ID: 440-96208-B-3 MS
Matrix: Water
Analysis Batch: 224635

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	160		800	905		ug/L		93	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*65 - 140*

Lab Sample ID: 440-96208-B-3 MSD
Matrix: Water
Analysis Batch: 224635

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	160		800	927		ug/L		95	65 - 140	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*

Lab Sample ID: MB 440-225092/35
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.40		mg/Kg			12/17/14 01:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*65 - 140*		*12/17/14 01:26*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: LCS 440-225092/33
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			1.60	1.53		mg/Kg		96	70 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*65 - 140*

Lab Sample ID: LCSD 440-225092/34
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)			1.60	1.55		mg/Kg		97	70 - 135	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*65 - 140*

Lab Sample ID: 440-95772-3 MS
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: B-2-141204@3'-3.5'
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		1.58	1.41		mg/Kg		89	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*65 - 140*

Lab Sample ID: 440-95772-3 MSD
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: B-2-141204@3'-3.5'
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		1.60	1.41		mg/Kg		88	60 - 140	0	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*65 - 140*

GC/MS VOA

Analysis Batch: 223344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95478-A-4 MS	Matrix Spike	Total/NA	Solid	8260B/5030B	
440-95478-A-4 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B/5030B	
440-95772-3	B-2-141204@3'-3.5'	Total/NA	Solid	8260B/5030B	
440-95772-4	B-2-141204@8'-8.5'	Total/NA	Solid	8260B/5030B	
LCS 440-223344/4	Lab Control Sample	Total/NA	Solid	8260B/5030B	
MB 440-223344/3	Method Blank	Total/NA	Solid	8260B/5030B	

Analysis Batch: 224567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95772-5	B-2-141204	Total/NA	Water	8260B/5030B	
440-96534-C-3 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-96534-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-224567/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-224567/4	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 224635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95772-5	B-2-141204	Total/NA	Water	8015B/5030B	
440-96208-B-3 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-96208-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
LCS 440-224635/4	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-224635/5	Method Blank	Total/NA	Water	8015B/5030B	

Analysis Batch: 225092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95772-3	B-2-141204@3'-3.5'	Total/NA	Solid	8015B/5030B	
440-95772-3 MS	B-2-141204@3'-3.5'	Total/NA	Solid	8015B/5030B	
440-95772-3 MSD	B-2-141204@3'-3.5'	Total/NA	Solid	8015B/5030B	
440-95772-4	B-2-141204@8'-8.5'	Total/NA	Solid	8015B/5030B	
LCS 440-225092/33	Lab Control Sample	Total/NA	Solid	8015B/5030B	
LCSD 440-225092/34	Lab Control Sample Dup	Total/NA	Solid	8015B/5030B	
MB 440-225092/35	Method Blank	Total/NA	Solid	8015B/5030B	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-95772-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-29-15
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

bp rm — Laboratory Management Program LaMP Chain of Custody Record

BP Site Node Path: 06-88-602 | Req Due Date (mm/dd/yy): | Rush TAT: Yes ___ No ___

BP Facility No: 374 | Lab Work Order Number:

Lab Name: Test America	Facility Address: 6407 Telegraph Avenue	Consultant/Contractor: Broadbent and Associates, Inc.
Lab Address: 17461 Derian Avenue Suite #100, Irvine, CA 92641	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No: 06-88-602
Lab PM: Kathleen Robb	Lead Regulatory Agency: ACEH	Address: 4820 Business Center Drive, Suite 110, Fairfield, CA 94534
Lab Phone: 949-261-1022	California Global ID No: T0600100106	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: 1103-6633-7	Enfos Proposal No.	Phone: 707-455-7290 Fax: 707-455-7295
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab.enfosdoc@bp.com
Other Info.	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP X Contractor ___
BP Project Manager (PM): Chuck Carmel		
BP PM Phone: 925-275-3804		
BP PM Email: chuck.carmel@bp.com		

440-95772 Chain of Custody

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	No. Containers / Preservative: Total Number of Container	Unpreserved	H2SO4	HNO3	HCl	Methanol	TICE	Requested Analyses: GRO by 8015M	BTEX/5 FO & EDB by 8260B	1,2-DCA & Ethanol by 8260B	NAPHTHALENE BY 8260B	Comments
	B-1-H1204@3'-3.5'	12-4-14	1328	X					X					X	X	X	X	X	HOLD
	B-1A-H1204@3'-3.5'	12-4-14	1515	X					X					X	X	X	X	X	HOLD
	B2-H1204@3'-3.5'	12-4-14	1026	X					X					X	X	X	X	X	
	B-2-H1204@8'-8.5'	12-4-14	1059	X					X					X	X	X	X	X	
	B-2-H1204	12-4-14	1215		X							X			X	X	X	X	
																			On Hold

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Lu DAMERELL						
Sampler's Company: Broadbent and Associates	Damerell/BAI	12/5/14	800	Jessica Collado/BAI	12/5/14	1100
Shipment Method: Fed Ex/SAT Ship Date:	EK-12/6/14			TAI	12/6/14	0750
Shipment Tracking No: 803788050367						

Special Instructions:

THIS LINE - LAB USE ONLY. Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 3.6 °F/C | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

IR63 = 4.3/3.6

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-95772-1

Login Number: 95772

List Source: TestAmerica Irvine

List Number: 1

Creator: Kim, Will

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	Missing Enfos Proposal No.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

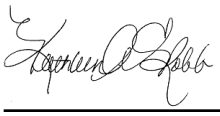
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-96461-1
Client Project/Site: ARCO 0374, Oakland

For:
Broadbent & Associates, Inc.
4820 Business Center Drive
#110
Fairfield, California 94534

Attn: Kristene Tidwell



Authorized for release by:
12/19/2014 12:41:24 PM

Kathleen Robb, Project Manager II
(949)261-1022
kathleen.robb@testamericainc.com

Table of Contents

Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-96461-1	B-3-141210@3'-3.5'	Solid	12/10/14 10:00	12/11/14 10:30
440-96461-2	B-3-141210@5'-5.5'	Solid	12/10/14 10:25	12/11/14 10:30
440-96461-3	B-3-141210	Water	12/10/14 10:45	12/11/14 10:30

Job ID: 440-96461-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-96461-1

Comments
No additional comments.

Receipt
The samples were received on 12/11/2014 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9º C.

GC/MS VOA
Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 224809 recovered above the outside control limit for Ethanol, Tert-butyl ethyl ether and Tert-amyl methyl ether. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 440-224809/2), B-3-141210 (440-96461-3). Calibration verification recovery for this analyte is outside of limits as stated in BP-LaMP Technical Requirements.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method(s) 8015B: Sample contained 25% soil and 75% water. Only the water portion was used for testing. B-3-141210 (440-96461-3)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Client Sample ID: B-3-141210@3'-3.5'
Date Collected: 12/10/14 10:00
Date Received: 12/11/14 10:30

Lab Sample ID: 440-96461-1
Matrix: Solid

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/15/14 17:05	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/15/14 17:05	1
Benzene	ND		0.0010		mg/Kg			12/15/14 17:05	1
Ethanol	ND		0.20		mg/Kg			12/15/14 17:05	1
Ethylbenzene	ND		0.0010		mg/Kg			12/15/14 17:05	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/15/14 17:05	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/15/14 17:05	1
m,p-Xylene	ND		0.0020		mg/Kg			12/15/14 17:05	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/15/14 17:05	1
Naphthalene	ND		0.0020		mg/Kg			12/15/14 17:05	1
o-Xylene	ND		0.0010		mg/Kg			12/15/14 17:05	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/15/14 17:05	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/15/14 17:05	1
Toluene	ND		0.0010		mg/Kg			12/15/14 17:05	1
Xylenes, Total	ND		0.0020		mg/Kg			12/15/14 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*79 - 120*		*12/15/14 17:05*	*1*
Dibromofluoromethane (Surr)	*103*		*60 - 120*		*12/15/14 17:05*	*1*
Toluene-d8 (Surr)	*104*		*79 - 123*		*12/15/14 17:05*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.40		mg/Kg			12/17/14 12:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*65 - 140*		*12/17/14 12:41*	*1*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Client Sample ID: B-3-141210@5'-5.5'
Date Collected: 12/10/14 10:25
Date Received: 12/11/14 10:30

Lab Sample ID: 440-96461-2
Matrix: Solid

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/15/14 17:34	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/15/14 17:34	1
Benzene	ND		0.0010		mg/Kg			12/15/14 17:34	1
Ethanol	ND		0.20		mg/Kg			12/15/14 17:34	1
Ethylbenzene	ND		0.0010		mg/Kg			12/15/14 17:34	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/15/14 17:34	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/15/14 17:34	1
m,p-Xylene	ND		0.0020		mg/Kg			12/15/14 17:34	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/15/14 17:34	1
Naphthalene	ND		0.0020		mg/Kg			12/15/14 17:34	1
o-Xylene	ND		0.0010		mg/Kg			12/15/14 17:34	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/15/14 17:34	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/15/14 17:34	1
Toluene	ND		0.0010		mg/Kg			12/15/14 17:34	1
Xylenes, Total	ND		0.0020		mg/Kg			12/15/14 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*79 - 120*		*12/15/14 17:34*	*1*
Dibromofluoromethane (Surr)	*106*		*60 - 120*		*12/15/14 17:34*	*1*
Toluene-d8 (Surr)	*106*		*79 - 123*		*12/15/14 17:34*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.40		mg/Kg			12/17/14 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*65 - 140*		*12/17/14 13:11*	*1*

Client Sample ID: B-3-141210
Date Collected: 12/10/14 10:45
Date Received: 12/11/14 10:30

Lab Sample ID: 440-96461-3
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/16/14 01:46	1
1,2-Dichloroethane	ND		0.50		ug/L			12/16/14 01:46	1
Benzene	ND		0.50		ug/L			12/16/14 01:46	1
Ethanol	ND		150		ug/L			12/16/14 01:46	1
Ethylbenzene	ND		0.50		ug/L			12/16/14 01:46	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			12/16/14 01:46	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			12/16/14 01:46	1
m,p-Xylene	ND		1.0		ug/L			12/16/14 01:46	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			12/16/14 01:46	1
Naphthalene	ND		1.0		ug/L			12/16/14 01:46	1
o-Xylene	ND		0.50		ug/L			12/16/14 01:46	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			12/16/14 01:46	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			12/16/14 01:46	1
Toluene	ND		0.50		ug/L			12/16/14 01:46	1
Xylenes, Total	ND		1.0		ug/L			12/16/14 01:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*12/16/14 01:46*	*1*
Dibromofluoromethane (Surr)	*104*		*76 - 132*		*12/16/14 01:46*	*1*
Toluene-d8 (Surr)	*102*		*80 - 128*		*12/16/14 01:46*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			12/14/14 07:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*65 - 140*		*12/14/14 07:46*	*1*

Method Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Method	Method Description	Protocol	Laboratory
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Client Sample ID: B-3-141210@3'-3.5'

Lab Sample ID: 440-96461-1

Date Collected: 12/10/14 10:00

Matrix: Solid

Date Received: 12/11/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	5.02 g	10 mL	224612	12/15/14 17:05	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5.04 g	10 mL	225092	12/17/14 12:41	IM	TAL IRV

Client Sample ID: B-3-141210@5'-5.5'

Lab Sample ID: 440-96461-2

Date Collected: 12/10/14 10:25

Matrix: Solid

Date Received: 12/11/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	5.02 g	10 mL	224612	12/15/14 17:34	HR	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5.06 g	10 mL	225092	12/17/14 13:11	IM	TAL IRV

Client Sample ID: B-3-141210

Lab Sample ID: 440-96461-3

Date Collected: 12/10/14 10:45

Matrix: Water

Date Received: 12/11/14 10:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	10 mL	10 mL	224809	12/16/14 01:46	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	10 mL	10 mL	224543	12/14/14 07:46	TL	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-224612/4
Matrix: Solid
Analysis Batch: 224612

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			12/15/14 08:38	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			12/15/14 08:38	1
Benzene	ND		0.0010		mg/Kg			12/15/14 08:38	1
Ethanol	ND		0.20		mg/Kg			12/15/14 08:38	1
Ethylbenzene	ND		0.0010		mg/Kg			12/15/14 08:38	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			12/15/14 08:38	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			12/15/14 08:38	1
m,p-Xylene	ND		0.0020		mg/Kg			12/15/14 08:38	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			12/15/14 08:38	1
Naphthalene	ND		0.0020		mg/Kg			12/15/14 08:38	1
o-Xylene	ND		0.0010		mg/Kg			12/15/14 08:38	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			12/15/14 08:38	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			12/15/14 08:38	1
Toluene	ND		0.0010		mg/Kg			12/15/14 08:38	1
Xylenes, Total	ND		0.0020		mg/Kg			12/15/14 08:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*79 - 120*		*12/15/14 08:38*	*1*
Dibromofluoromethane (Surr)	*102*		*60 - 120*		*12/15/14 08:38*	*1*
Toluene-d8 (Surr)	*106*		*79 - 123*		*12/15/14 08:38*	*1*

Lab Sample ID: LCS 440-224612/5
Matrix: Solid
Analysis Batch: 224612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			0.0500	0.0515		mg/Kg		103	70 - 130		
1,2-Dichloroethane			0.0500	0.0547		mg/Kg		109	60 - 140		
Benzene			0.0500	0.0512		mg/Kg		102	65 - 120		
Ethanol			2.50	3.08		mg/Kg		123	35 - 160		
Ethylbenzene			0.0500	0.0518		mg/Kg		104	70 - 125		
Ethyl-t-butyl ether (ETBE)			0.0500	0.0524		mg/Kg		105	60 - 140		
Isopropyl Ether (DIPE)			0.0500	0.0592		mg/Kg		118	60 - 140		
m,p-Xylene			0.0500	0.0531		mg/Kg		106	70 - 125		
Methyl-t-Butyl Ether (MTBE)			0.0500	0.0525		mg/Kg		105	60 - 140		
Naphthalene			0.0500	0.0472		mg/Kg		94	55 - 135		
o-Xylene			0.0500	0.0559		mg/Kg		112	70 - 125		
Tert-amyl-methyl ether (TAME)			0.0500	0.0497		mg/Kg		99	60 - 145		
tert-Butyl alcohol (TBA)			0.500	0.556		mg/Kg		111	70 - 135		
Toluene			0.0500	0.0511		mg/Kg		102	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*79 - 120*
Dibromofluoromethane (Surr)	*103*		*60 - 120*
Toluene-d8 (Surr)	*99*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96339-A-1 MS
Matrix: Solid
Analysis Batch: 224612

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		0.0497	0.0529		mg/Kg		107	65 - 140
1,2-Dichloroethane	ND		0.0497	0.0550		mg/Kg		111	60 - 150
Benzene	ND		0.0497	0.0510		mg/Kg		103	65 - 130
Ethanol	ND		2.49	2.68		mg/Kg		108	30 - 165
Ethylbenzene	ND		0.0497	0.0520		mg/Kg		105	70 - 135
Ethyl-t-butyl ether (ETBE)	ND		0.0497	0.0539		mg/Kg		109	60 - 145
Isopropyl Ether (DIPE)	ND		0.0497	0.0577		mg/Kg		116	60 - 150
m,p-Xylene	ND		0.0497	0.0537		mg/Kg		108	70 - 130
Methyl-t-Butyl Ether (MTBE)	ND		0.0497	0.0540		mg/Kg		109	55 - 155
Naphthalene	ND		0.0497	0.0511		mg/Kg		103	40 - 150
o-Xylene	ND		0.0497	0.0564		mg/Kg		113	65 - 130
Tert-amyl-methyl ether (TAME)	ND		0.0497	0.0510		mg/Kg		103	60 - 150
tert-Butyl alcohol (TBA)	ND		0.497	0.525		mg/Kg		106	65 - 145
Toluene	ND		0.0497	0.0513		mg/Kg		103	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*79 - 120*
Dibromofluoromethane (Surr)	*105*		*60 - 120*
Toluene-d8 (Surr)	*99*		*79 - 123*

Lab Sample ID: 440-96339-A-1 MSD
Matrix: Solid
Analysis Batch: 224612

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		0.0498	0.0558		mg/Kg		112	65 - 140	5	25
1,2-Dichloroethane	ND		0.0498	0.0532		mg/Kg		107	60 - 150	3	25
Benzene	ND		0.0498	0.0511		mg/Kg		103	65 - 130	0	20
Ethanol	ND		2.49	2.76		mg/Kg		111	30 - 165	3	40
Ethylbenzene	ND		0.0498	0.0551		mg/Kg		111	70 - 135	6	25
Ethyl-t-butyl ether (ETBE)	ND		0.0498	0.0535		mg/Kg		107	60 - 145	1	30
Isopropyl Ether (DIPE)	ND		0.0498	0.0588		mg/Kg		118	60 - 150	2	25
m,p-Xylene	ND		0.0498	0.0567		mg/Kg		114	70 - 130	5	25
Methyl-t-Butyl Ether (MTBE)	ND		0.0498	0.0537		mg/Kg		108	55 - 155	1	35
Naphthalene	ND		0.0498	0.0509		mg/Kg		102	40 - 150	0	40
o-Xylene	ND		0.0498	0.0596		mg/Kg		120	65 - 130	6	25
Tert-amyl-methyl ether (TAME)	ND		0.0498	0.0513		mg/Kg		103	60 - 150	1	25
tert-Butyl alcohol (TBA)	ND		0.498	0.532		mg/Kg		107	65 - 145	1	30
Toluene	ND		0.0498	0.0547		mg/Kg		110	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*79 - 120*
Dibromofluoromethane (Surr)	*103*		*60 - 120*
Toluene-d8 (Surr)	*106*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-224809/4
Matrix: Water
Analysis Batch: 224809

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			12/15/14 19:35	1
1,2-Dichloroethane	ND		0.50		ug/L			12/15/14 19:35	1
Benzene	ND		0.50		ug/L			12/15/14 19:35	1
Ethanol	ND		150		ug/L			12/15/14 19:35	1
Ethylbenzene	ND		0.50		ug/L			12/15/14 19:35	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			12/15/14 19:35	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			12/15/14 19:35	1
m,p-Xylene	ND		1.0		ug/L			12/15/14 19:35	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			12/15/14 19:35	1
Naphthalene	ND		1.0		ug/L			12/15/14 19:35	1
o-Xylene	ND		0.50		ug/L			12/15/14 19:35	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			12/15/14 19:35	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			12/15/14 19:35	1
Toluene	ND		0.50		ug/L			12/15/14 19:35	1
Xylenes, Total	ND		1.0		ug/L			12/15/14 19:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*80 - 120*		*12/15/14 19:35*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*12/15/14 19:35*	*1*
Toluene-d8 (Surr)	*101*		*80 - 128*		*12/15/14 19:35*	*1*

Lab Sample ID: LCS 440-224809/5
Matrix: Water
Analysis Batch: 224809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	27.4		ug/L		110	70 - 130		
1,2-Dichloroethane			25.0	30.8		ug/L		123	57 - 138		
Benzene			25.0	23.3		ug/L		93	68 - 130		
Ethanol			1250	945		ug/L		76	50 - 149		
Ethylbenzene			25.0	27.4		ug/L		110	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	32.9		ug/L		132	60 - 136		
Isopropyl Ether (DIPE)			25.0	27.2		ug/L		109	58 - 139		
m,p-Xylene			25.0	27.3		ug/L		109	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	32.1		ug/L		128	63 - 131		
Naphthalene			25.0	25.1		ug/L		100	60 - 140		
o-Xylene			25.0	27.2		ug/L		109	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	32.6		ug/L		130	57 - 139		
tert-Butyl alcohol (TBA)			250	284		ug/L		114	70 - 130		
Toluene			25.0	25.8		ug/L		103	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*76 - 132*
Toluene-d8 (Surr)	*100*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-96214-F-5 MS
Matrix: Water
Analysis Batch: 224809

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	28.3		ug/L		113	70 - 131
1,2-Dichloroethane	ND		25.0	30.7		ug/L		123	56 - 146
Benzene	9.9		25.0	32.9		ug/L		92	66 - 130
Ethanol	ND		1250	1010		ug/L		81	54 - 150
Ethylbenzene	ND		25.0	27.4		ug/L		109	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	33.2	LM	ug/L		133	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	27.0		ug/L		107	64 - 138
m,p-Xylene	ND		25.0	27.4		ug/L		110	70 - 133
Methyl-t-Butyl Ether (MTBE)	5.7		25.0	39.5	LM	ug/L		135	70 - 130
Naphthalene	4.6		25.0	33.9		ug/L		117	60 - 140
o-Xylene	ND		25.0	26.5		ug/L		106	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	32.9		ug/L		132	68 - 133
tert-Butyl alcohol (TBA)	32		250	313		ug/L		112	70 - 130
Toluene	ND		25.0	25.2		ug/L		101	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*76 - 132*
Toluene-d8 (Surr)	*97*		*80 - 128*

Lab Sample ID: 440-96214-F-5 MSD
Matrix: Water
Analysis Batch: 224809

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	27.1		ug/L		108	70 - 131	4	25
1,2-Dichloroethane	ND		25.0	28.9		ug/L		116	56 - 146	6	20
Benzene	9.9		25.0	32.6		ug/L		91	66 - 130	1	20
Ethanol	ND		1250	973		ug/L		78	54 - 150	4	30
Ethylbenzene	ND		25.0	26.8		ug/L		107	70 - 130	2	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	32.9	LM	ug/L		132	70 - 130	1	25
Isopropyl Ether (DIPE)	ND		25.0	27.3		ug/L		108	64 - 138	1	25
m,p-Xylene	ND		25.0	27.0		ug/L		108	70 - 133	2	25
Methyl-t-Butyl Ether (MTBE)	5.7		25.0	38.6	LM	ug/L		131	70 - 130	2	25
Naphthalene	4.6		25.0	34.7		ug/L		120	60 - 140	2	30
o-Xylene	ND		25.0	26.0		ug/L		104	70 - 133	2	20
Tert-amyl-methyl ether (TAME)	ND		25.0	32.4		ug/L		130	68 - 133	2	30
tert-Butyl alcohol (TBA)	32		250	318		ug/L		114	70 - 130	2	25
Toluene	ND		25.0	25.0		ug/L		100	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*76 - 132*
Toluene-d8 (Surr)	*96*		*80 - 128*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-224543/31
Matrix: Water
Analysis Batch: 224543

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			12/14/14 04:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*65 - 140*		*12/14/14 04:52*	*1*

Lab Sample ID: LCS 440-224543/30
Matrix: Water
Analysis Batch: 224543

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	801		ug/L		100	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*

Lab Sample ID: 440-96455-A-2 MS
Matrix: Water
Analysis Batch: 224543

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		800	618		ug/L		74	65 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*71*		*65 - 140*

Lab Sample ID: 440-96455-A-2 MSD
Matrix: Water
Analysis Batch: 224543

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	639		ug/L		77	65 - 140	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*76*		*65 - 140*

Lab Sample ID: MB 440-225092/35
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.40		mg/Kg			12/17/14 01:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*65 - 140*		*12/17/14 01:26*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: LCS 440-225092/33
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			1.60	1.53		mg/Kg		96	70 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*65 - 140*

Lab Sample ID: LCSD 440-225092/34
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)			1.60	1.55		mg/Kg		97	70 - 135	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*65 - 140*

Lab Sample ID: 440-95772-A-3 MS
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)	ND		1.58	1.41		mg/Kg		89	60 - 140		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*65 - 140*

Lab Sample ID: 440-95772-A-3 MSD
Matrix: Solid
Analysis Batch: 225092

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		1.60	1.41		mg/Kg		88	60 - 140	0	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*65 - 140*

GC/MS VOA

Analysis Batch: 224612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96339-A-1 MS	Matrix Spike	Total/NA	Solid	8260B/5030B	
440-96339-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B/5030B	
440-96461-1	B-3-141210@3'-3.5'	Total/NA	Solid	8260B/5030B	
440-96461-2	B-3-141210@5'-5.5'	Total/NA	Solid	8260B/5030B	
LCS 440-224612/5	Lab Control Sample	Total/NA	Solid	8260B/5030B	
MB 440-224612/4	Method Blank	Total/NA	Solid	8260B/5030B	

Analysis Batch: 224809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96214-F-5 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-96214-F-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
440-96461-3	B-3-141210	Total/NA	Water	8260B/5030B	
LCS 440-224809/5	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-224809/4	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 224543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-96455-A-2 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-96455-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-96461-3	B-3-141210	Total/NA	Water	8015B/5030B	
LCS 440-224543/30	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-224543/31	Method Blank	Total/NA	Water	8015B/5030B	

Analysis Batch: 225092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-95772-A-3 MS	Matrix Spike	Total/NA	Solid	8015B/5030B	
440-95772-A-3 MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B/5030B	
440-96461-1	B-3-141210@3'-3.5'	Total/NA	Solid	8015B/5030B	
440-96461-2	B-3-141210@5'-5.5'	Total/NA	Solid	8015B/5030B	
LCS 440-225092/33	Lab Control Sample	Total/NA	Solid	8015B/5030B	
LCSD 440-225092/34	Lab Control Sample Dup	Total/NA	Solid	8015B/5030B	
MB 440-225092/35	Method Blank	Total/NA	Solid	8015B/5030B	

Qualifiers

GC/MS VOA

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-96461-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-29-15
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

bp rm — Laboratory Management Program LaMP Chain of Custody Record

Page ____ of ____

BP Site Node Path: 06-88-602 **Req Due Date (mm/dd/yy):** _____ **Rush TAT:** Yes ___ No ___

BP Facility No: 374 **Lab Work Order Number:** _____

Lab Name: Test America	Facility Address: 6407 Telegraph Avenue	Consultant/Contractor: Broadbent and Associates, Inc.
Lab Address: 17461 Derian Avenue Suite #100, Irvine, CA 92641	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No: 06-88-602
Lab PM: Kathleen Robb	Lead Regulatory Agency: ACEH	Address: 4820 Business Center Drive, Suite 110, Fairfield, CA 94534
Lab Phone: 949-261-1022	California Global ID No.: T0600100106	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: 1103-6633-7	Enfos Proposal No:	Phone 707-455-7290 Fax. 707-455-7295
Lab Bottle Order No:	Accounting Mode: Provision _X_ OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab enfosdoc@bp.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP _x_ Contractor ___

BP Project Manager (PM): Chuck Carmel
BP PM Phone: 925-275-3804
BP PM Email: chuck.carmel@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix: Is this location a well?	No. Containers / Preservative: Total Number of Containers	Unpreserved	H2SO4	HNO3	HCl	Methanol	ICE	Requested Analyses: GRO by EPA 8015M	BTEX/5 FO & EDB by EPA 8260B	1,2-DCA & Ethanol by EPA 8260B	NAPHTHALENE by EPA 8260B
	B3-141210@3'-3.5'	12-10-14	1025	X					X					X	X	X	X	X
	B-3-141210@5-5.5'	12-10-14	1025	X					X					X	X	X	X	X
	B3-141210	121014	1045		X							X		X	X	X	X	X

Report Type & QC Level: Standard _x_ / Full Data Package ___

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

440-96461 Chain of Custody

On Hold

Sampler's Name	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Broadbent and Associates	L Damerell / BROADBENT	12-10-14	1530	Vn Bandi TAI	12/11/10	10:30
Shipment Method: Fed Ex Ship Date: 12-10-14						
Shipment Tracking No: 8007 0583 4080						

Special Instructions: Fed: 8007 0583 4080

THIS LINE - LAB USE ONLY. Custody Seals In Place. Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: 4.7/3.9 °F/C Trip Blank: Yes / No MS/MSD Sample Submitted. Yes / No

IR-64

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-96461-1

Login Number: 96461

List Source: TestAmerica Irvine

List Number: 1

Creator: Freitag, Kevin R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

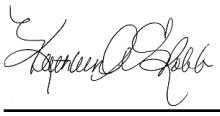
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-99248-1
Client Project/Site: ARCO 0374, Oakland

For:
Broadbent & Associates, Inc.
4820 Business Center Drive
#110
Fairfield, California 94534

Attn: Kristene Tidwell



Authorized for release by:
1/30/2015 9:32:05 AM

Kathleen Robb, Project Manager II
(949)261-1022
kathleen.robb@testamericainc.com

Table of Contents

Sample Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-99248-1	B-1b	Water	01/16/15 11:20	01/17/15 16:31
440-99248-2	B-1b-3	Solid	01/16/15 08:55	01/17/15 16:31
440-99248-3	B-1-B-7	Solid	01/16/15 09:45	01/17/15 16:31

Job ID: 440-99248-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-99248-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2015 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
Method(s) 8015B: No results were reported for the MS/MSD associated with batch 231451. The samples were not spiked with TPH standard. The batch was accepted based on LCS recovery. LCS was performed in duplicate to provide precision data for this batch. (LCS 440-231451/4)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Client Sample ID: B-1b
Date Collected: 01/16/15 11:20
Date Received: 01/17/15 16:31

Lab Sample ID: 440-99248-1
Matrix: Water

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		10		ug/L			01/22/15 06:11	20
1,2-Dichloroethane	ND		10		ug/L			01/22/15 06:11	20
Benzene	**690**		10		ug/L			01/22/15 06:11	20
Ethanol	ND		3000		ug/L			01/22/15 06:11	20
Ethylbenzene	**630**		10		ug/L			01/22/15 06:11	20
Ethyl-t-butyl ether (ETBE)	ND		10		ug/L			01/22/15 06:11	20
Isopropyl Ether (DIPE)	ND		10		ug/L			01/22/15 06:11	20
m,p-Xylene	**970**		20		ug/L			01/22/15 06:11	20
Methyl-t-Butyl Ether (MTBE)	ND		10		ug/L			01/22/15 06:11	20
Naphthalene	**52**		20		ug/L			01/22/15 06:11	20
o-Xylene	**250**		10		ug/L			01/22/15 06:11	20
Tert-amyl-methyl ether (TAME)	ND		10		ug/L			01/22/15 06:11	20
tert-Butyl alcohol (TBA)	ND		200		ug/L			01/22/15 06:11	20
Toluene	**170**		10		ug/L			01/22/15 06:11	20
Xylenes, Total	**1200**		20		ug/L			01/22/15 06:11	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/22/15 06:11*	*20*
Dibromofluoromethane (Surr)	*92*		*76 - 132*		*01/22/15 06:11*	*20*
Toluene-d8 (Surr)	*103*		*80 - 128*		*01/22/15 06:11*	*20*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**8800**		1000		ug/L			01/27/15 14:49	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*65 - 140*		*01/27/15 14:49*	*20*

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Client Sample ID: B-1b-3
Date Collected: 01/16/15 08:55
Date Received: 01/17/15 16:31

Lab Sample ID: 440-99248-2
Matrix: Solid

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			01/19/15 21:06	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			01/19/15 21:06	1
Benzene	**0.0043**		0.0010		mg/Kg			01/19/15 21:06	1
Ethanol	ND		0.20		mg/Kg			01/19/15 21:06	1
Ethylbenzene	**0.0020**		0.0010		mg/Kg			01/19/15 21:06	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			01/19/15 21:06	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			01/19/15 21:06	1
m,p-Xylene	**0.0038**		0.0020		mg/Kg			01/19/15 21:06	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			01/19/15 21:06	1
Naphthalene	**0.050**		0.0020		mg/Kg			01/19/15 21:06	1
o-Xylene	**0.0012**		0.0010		mg/Kg			01/19/15 21:06	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			01/19/15 21:06	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			01/19/15 21:06	1
Toluene	ND		0.0010		mg/Kg			01/19/15 21:06	1
Xylenes, Total	**0.0050**		0.0020		mg/Kg			01/19/15 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*79 - 120*		*01/19/15 21:06*	*1*
Dibromofluoromethane (Surr)	*104*		*60 - 120*		*01/19/15 21:06*	*1*
Toluene-d8 (Surr)	*107*		*79 - 123*		*01/19/15 21:06*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**1.6**		0.40		mg/Kg			01/23/15 08:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*65 - 140*		*01/23/15 08:31*	*1*

Client Sample ID: B-1-B-7
Date Collected: 01/16/15 09:45
Date Received: 01/17/15 16:31

Lab Sample ID: 440-99248-3
Matrix: Solid

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			01/19/15 22:37	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			01/19/15 22:37	1
Benzene	ND		0.0010		mg/Kg			01/19/15 22:37	1
Ethanol	ND		0.20		mg/Kg			01/19/15 22:37	1
Ethylbenzene	ND		0.0010		mg/Kg			01/19/15 22:37	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			01/19/15 22:37	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			01/19/15 22:37	1
m,p-Xylene	ND		0.0020		mg/Kg			01/19/15 22:37	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			01/19/15 22:37	1
Naphthalene	ND		0.0020		mg/Kg			01/19/15 22:37	1
o-Xylene	ND		0.0010		mg/Kg			01/19/15 22:37	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			01/19/15 22:37	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			01/19/15 22:37	1
Toluene	ND		0.0010		mg/Kg			01/19/15 22:37	1
Xylenes, Total	ND		0.0020		mg/Kg			01/19/15 22:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*79 - 120*		*01/19/15 22:37*	*1*
Dibromofluoromethane (Surr)	*105*		*60 - 120*		*01/19/15 22:37*	*1*
Toluene-d8 (Surr)	*113*		*79 - 123*		*01/19/15 22:37*	*1*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	**0.95**		0.40		mg/Kg			01/23/15 09:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*65 - 140*		*01/23/15 09:00*	*1*

Method Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Method	Method Description	Protocol	Laboratory
8260B/5030B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B/5030B	Gasoline Range Organics (GC)	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Client Sample ID: B-1b

Lab Sample ID: 440-99248-1

Date Collected: 01/16/15 11:20

Matrix: Water

Date Received: 01/17/15 16:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		20	10 mL	10 mL	231144	01/22/15 06:11	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		20	10 mL	10 mL	232213	01/27/15 14:49	IM	TAL IRV

Client Sample ID: B-1b-3

Lab Sample ID: 440-99248-2

Date Collected: 01/16/15 08:55

Matrix: Solid

Date Received: 01/17/15 16:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	5 g	10 mL	230645	01/19/15 21:06	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5.02 g	10 mL	231451	01/23/15 08:31	AK	TAL IRV

Client Sample ID: B-1-B-7

Lab Sample ID: 440-99248-3

Date Collected: 01/16/15 09:45

Matrix: Solid

Date Received: 01/17/15 16:31

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/5030B		1	4.96 g	10 mL	230645	01/19/15 22:37	WK	TAL IRV
Total/NA	Analysis	8015B/5030B		1	5 g	10 mL	231451	01/23/15 09:00	AK	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-230645/4
Matrix: Solid
Analysis Batch: 230645

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.0010		mg/Kg			01/19/15 19:36	1
1,2-Dichloroethane	ND		0.0010		mg/Kg			01/19/15 19:36	1
Benzene	ND		0.0010		mg/Kg			01/19/15 19:36	1
Ethanol	ND		0.20		mg/Kg			01/19/15 19:36	1
Ethylbenzene	ND		0.0010		mg/Kg			01/19/15 19:36	1
Ethyl-t-butyl ether (ETBE)	ND		0.0020		mg/Kg			01/19/15 19:36	1
Isopropyl Ether (DIPE)	ND		0.0020		mg/Kg			01/19/15 19:36	1
m,p-Xylene	ND		0.0020		mg/Kg			01/19/15 19:36	1
Methyl-t-Butyl Ether (MTBE)	ND		0.0020		mg/Kg			01/19/15 19:36	1
Naphthalene	ND		0.0020		mg/Kg			01/19/15 19:36	1
o-Xylene	ND		0.0010		mg/Kg			01/19/15 19:36	1
Tert-amyl-methyl ether (TAME)	ND		0.0020		mg/Kg			01/19/15 19:36	1
tert-Butyl alcohol (TBA)	ND		0.050		mg/Kg			01/19/15 19:36	1
Toluene	ND		0.0010		mg/Kg			01/19/15 19:36	1
Xylenes, Total	ND		0.0020		mg/Kg			01/19/15 19:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*79 - 120*		*01/19/15 19:36*	*1*
Dibromofluoromethane (Surr)	*102*		*60 - 120*		*01/19/15 19:36*	*1*
Toluene-d8 (Surr)	*106*		*79 - 123*		*01/19/15 19:36*	*1*

Lab Sample ID: LCS 440-230645/5
Matrix: Solid
Analysis Batch: 230645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			0.0500	0.0558		mg/Kg		112	70 - 130		
1,2-Dichloroethane			0.0500	0.0466		mg/Kg		93	60 - 140		
Benzene			0.0500	0.0498		mg/Kg		100	65 - 120		
Ethanol			2.50	2.44		mg/Kg		97	35 - 160		
Ethylbenzene			0.0500	0.0517		mg/Kg		103	70 - 125		
Ethyl-t-butyl ether (ETBE)			0.0500	0.0509		mg/Kg		102	60 - 140		
Isopropyl Ether (DIPE)			0.0500	0.0505		mg/Kg		101	60 - 140		
m,p-Xylene			0.0500	0.0560		mg/Kg		112	70 - 125		
Methyl-t-Butyl Ether (MTBE)			0.0500	0.0521		mg/Kg		104	60 - 140		
Naphthalene			0.0500	0.0530		mg/Kg		106	55 - 135		
o-Xylene			0.0500	0.0552		mg/Kg		110	70 - 125		
Tert-amyl-methyl ether (TAME)			0.0500	0.0538		mg/Kg		108	60 - 145		
tert-Butyl alcohol (TBA)			0.500	0.515		mg/Kg		103	70 - 135		
Toluene			0.0500	0.0518		mg/Kg		104	70 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*79 - 120*
Dibromofluoromethane (Surr)	*104*		*60 - 120*
Toluene-d8 (Surr)	*105*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-99248-2 MS
Matrix: Solid
Analysis Batch: 230645

Client Sample ID: B-1b-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		0.0498	0.0608		mg/Kg		122	65 - 140
1,2-Dichloroethane	ND		0.0498	0.0469		mg/Kg		94	60 - 150
Benzene	0.0043		0.0498	0.0548		mg/Kg		101	65 - 130
Ethanol	ND		2.49	2.44		mg/Kg		98	30 - 165
Ethylbenzene	0.0020		0.0498	0.0548		mg/Kg		106	70 - 135
Ethyl-t-butyl ether (ETBE)	ND		0.0498	0.0526		mg/Kg		106	60 - 145
Isopropyl Ether (DIPE)	ND		0.0498	0.0513		mg/Kg		103	60 - 150
m,p-Xylene	0.0038		0.0498	0.0619		mg/Kg		117	70 - 130
Methyl-t-Butyl Ether (MTBE)	ND		0.0498	0.0558		mg/Kg		112	55 - 155
Naphthalene	0.050		0.0498	0.113	EY	mg/Kg		127	40 - 150
o-Xylene	0.0012		0.0498	0.0565		mg/Kg		111	65 - 130
Tert-amyl-methyl ether (TAME)	ND		0.0498	0.0576		mg/Kg		116	60 - 150
tert-Butyl alcohol (TBA)	ND		0.498	0.535		mg/Kg		107	65 - 145
Toluene	ND		0.0498	0.0530		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*79 - 120*
Dibromofluoromethane (Surr)	*105*		*60 - 120*
Toluene-d8 (Surr)	*104*		*79 - 123*

Lab Sample ID: 440-99248-2 MSD
Matrix: Solid
Analysis Batch: 230645

Client Sample ID: B-1b-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		0.0503	0.0623		mg/Kg		124	65 - 140	3	25
1,2-Dichloroethane	ND		0.0503	0.0484		mg/Kg		96	60 - 150	3	25
Benzene	0.0043		0.0503	0.0561		mg/Kg		103	65 - 130	2	20
Ethanol	ND		2.52	2.30		mg/Kg		92	30 - 165	6	40
Ethylbenzene	0.0020		0.0503	0.0545		mg/Kg		104	70 - 135	1	25
Ethyl-t-butyl ether (ETBE)	ND		0.0503	0.0556		mg/Kg		111	60 - 145	6	30
Isopropyl Ether (DIPE)	ND		0.0503	0.0532		mg/Kg		106	60 - 150	4	25
m,p-Xylene	0.0038		0.0503	0.0624		mg/Kg		116	70 - 130	1	25
Methyl-t-Butyl Ether (MTBE)	ND		0.0503	0.0594		mg/Kg		118	55 - 155	6	35
Naphthalene	0.050		0.0503	0.118	EY	mg/Kg		135	40 - 150	4	40
o-Xylene	0.0012		0.0503	0.0572		mg/Kg		111	65 - 130	1	25
Tert-amyl-methyl ether (TAME)	ND		0.0503	0.0611		mg/Kg		122	60 - 150	6	25
tert-Butyl alcohol (TBA)	ND		0.503	0.522		mg/Kg		104	65 - 145	2	30
Toluene	ND		0.0503	0.0533		mg/Kg		104	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*79 - 120*
Dibromofluoromethane (Surr)	*104*		*60 - 120*
Toluene-d8 (Surr)	*104*		*79 - 123*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-231144/5
Matrix: Water
Analysis Batch: 231144

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		0.50		ug/L			01/21/15 20:22	1
1,2-Dichloroethane	ND		0.50		ug/L			01/21/15 20:22	1
Benzene	ND		0.50		ug/L			01/21/15 20:22	1
Ethanol	ND		150		ug/L			01/21/15 20:22	1
Ethylbenzene	ND		0.50		ug/L			01/21/15 20:22	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			01/21/15 20:22	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			01/21/15 20:22	1
m,p-Xylene	ND		1.0		ug/L			01/21/15 20:22	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			01/21/15 20:22	1
Naphthalene	ND		1.0		ug/L			01/21/15 20:22	1
o-Xylene	ND		0.50		ug/L			01/21/15 20:22	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			01/21/15 20:22	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			01/21/15 20:22	1
Toluene	ND		0.50		ug/L			01/21/15 20:22	1
Xylenes, Total	ND		1.0		ug/L			01/21/15 20:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*01/21/15 20:22*	*1*
Dibromofluoromethane (Surr)	*98*		*76 - 132*		*01/21/15 20:22*	*1*
Toluene-d8 (Surr)	*103*		*80 - 128*		*01/21/15 20:22*	*1*

Lab Sample ID: LCS 440-231144/4
Matrix: Water
Analysis Batch: 231144

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,2-Dibromoethane (EDB)			25.0	25.7		ug/L		103	70 - 130		
1,2-Dichloroethane			25.0	24.8		ug/L		99	57 - 138		
Benzene			25.0	25.3		ug/L		101	68 - 130		
Ethanol			1250	1150		ug/L		92	50 - 149		
Ethylbenzene			25.0	24.1		ug/L		96	70 - 130		
Ethyl-t-butyl ether (ETBE)			25.0	26.8		ug/L		107	60 - 136		
Isopropyl Ether (DIPE)			25.0	25.9		ug/L		104	58 - 139		
m,p-Xylene			25.0	25.2		ug/L		101	70 - 130		
Methyl-t-Butyl Ether (MTBE)			25.0	28.2		ug/L		113	63 - 131		
Naphthalene			25.0	25.9		ug/L		104	60 - 140		
o-Xylene			25.0	24.9		ug/L		100	70 - 130		
Tert-amyl-methyl ether (TAME)			25.0	27.0		ug/L		108	57 - 139		
tert-Butyl alcohol (TBA)			250	259		ug/L		103	70 - 130		
Toluene			25.0	24.3		ug/L		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*76 - 132*
Toluene-d8 (Surr)	*98*		*80 - 128*

Method: 8260B/5030B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-99401-B-6 MS
Matrix: Water
Analysis Batch: 231144

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane (EDB)	ND		25.0	26.4		ug/L		106	70 - 131
1,2-Dichloroethane	ND		25.0	25.4		ug/L		102	56 - 146
Benzene	ND		25.0	24.2		ug/L		97	66 - 130
Ethanol	ND		1250	1210		ug/L		97	54 - 150
Ethylbenzene	ND		25.0	25.8		ug/L		103	70 - 130
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.6		ug/L		102	70 - 130
Isopropyl Ether (DIPE)	ND		25.0	25.0		ug/L		100	64 - 138
m,p-Xylene	ND		25.0	26.1		ug/L		104	70 - 133
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.1		ug/L		105	70 - 130
Naphthalene	ND		25.0	26.8		ug/L		107	60 - 140
o-Xylene	ND		25.0	26.3		ug/L		105	70 - 133
Tert-amyl-methyl ether (TAME)	ND		25.0	26.5		ug/L		106	68 - 133
tert-Butyl alcohol (TBA)	35		250	281		ug/L		98	70 - 130
Toluene	ND		25.0	24.8		ug/L		99	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*76 - 132*
Toluene-d8 (Surr)	*99*		*80 - 128*

Lab Sample ID: 440-99401-B-6 MSD
Matrix: Water
Analysis Batch: 231144

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane (EDB)	ND		25.0	25.5		ug/L		102	70 - 131	3	25
1,2-Dichloroethane	ND		25.0	25.2		ug/L		101	56 - 146	1	20
Benzene	ND		25.0	23.9		ug/L		96	66 - 130	1	20
Ethanol	ND		1250	1220		ug/L		97	54 - 150	0	30
Ethylbenzene	ND		25.0	25.0		ug/L		100	70 - 130	3	20
Ethyl-t-butyl ether (ETBE)	ND		25.0	25.9		ug/L		104	70 - 130	1	25
Isopropyl Ether (DIPE)	ND		25.0	25.1		ug/L		100	64 - 138	1	25
m,p-Xylene	ND		25.0	25.2		ug/L		101	70 - 133	4	25
Methyl-t-Butyl Ether (MTBE)	ND		25.0	26.6		ug/L		106	70 - 130	2	25
Naphthalene	ND		25.0	25.9		ug/L		104	60 - 140	3	30
o-Xylene	ND		25.0	25.1		ug/L		101	70 - 133	4	20
Tert-amyl-methyl ether (TAME)	ND		25.0	26.2		ug/L		105	68 - 133	1	30
tert-Butyl alcohol (TBA)	35		250	273		ug/L		95	70 - 130	3	25
Toluene	ND		25.0	24.0		ug/L		96	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*101*		*76 - 132*
Toluene-d8 (Surr)	*98*		*80 - 128*

Method: 8015B/5030B - Gasoline Range Organics (GC)

Lab Sample ID: MB 440-231451/6
Matrix: Solid
Analysis Batch: 231451

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		0.40		mg/Kg			01/23/15 01:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*65 - 140*		*01/23/15 01:52*	*1*

Lab Sample ID: LCS 440-231451/4
Matrix: Solid
Analysis Batch: 231451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			1.60	1.70		mg/Kg		106	70 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*81*		*65 - 140*

Lab Sample ID: LCSD 440-231451/5
Matrix: Solid
Analysis Batch: 231451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)			1.60	1.70		mg/Kg		106	70 - 135	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*65 - 140*

Lab Sample ID: MB 440-232213/7
Matrix: Water
Analysis Batch: 232213

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
GRO (C6-C12)	ND		50		ug/L			01/27/15 12:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*65 - 140*		*01/27/15 12:40*	*1*

Lab Sample ID: LCS 440-232213/6
Matrix: Water
Analysis Batch: 232213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
GRO (C4-C12)			800	781		ug/L		98	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*65 - 140*

Method: 8015B/5030B - Gasoline Range Organics (GC) (Continued)

Lab Sample ID: 440-99160-E-3 MS
Matrix: Water
Analysis Batch: 232213

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
GRO (C4-C12)	ND		800	758		ug/L		95	65 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*65 - 140*

Lab Sample ID: 440-99160-E-3 MSD
Matrix: Water
Analysis Batch: 232213

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
GRO (C4-C12)	ND		800	792		ug/L		99	65 - 140	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*65 - 140*

GC/MS VOA

Analysis Batch: 230645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-99248-2	B-1b-3	Total/NA	Solid	8260B/5030B	
440-99248-2 MS	B-1b-3	Total/NA	Solid	8260B/5030B	
440-99248-2 MSD	B-1b-3	Total/NA	Solid	8260B/5030B	
440-99248-3	B-1-B-7	Total/NA	Solid	8260B/5030B	
LCS 440-230645/5	Lab Control Sample	Total/NA	Solid	8260B/5030B	
MB 440-230645/4	Method Blank	Total/NA	Solid	8260B/5030B	

Analysis Batch: 231144

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-99248-1	B-1b	Total/NA	Water	8260B/5030B	
440-99401-B-6 MS	Matrix Spike	Total/NA	Water	8260B/5030B	
440-99401-B-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/5030B	
LCS 440-231144/4	Lab Control Sample	Total/NA	Water	8260B/5030B	
MB 440-231144/5	Method Blank	Total/NA	Water	8260B/5030B	

GC VOA

Analysis Batch: 231451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-99248-2	B-1b-3	Total/NA	Solid	8015B/5030B	
440-99248-3	B-1-B-7	Total/NA	Solid	8015B/5030B	
LCS 440-231451/4	Lab Control Sample	Total/NA	Solid	8015B/5030B	
LCSD 440-231451/5	Lab Control Sample Dup	Total/NA	Solid	8015B/5030B	
MB 440-231451/6	Method Blank	Total/NA	Solid	8015B/5030B	

Analysis Batch: 232213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-99160-E-3 MS	Matrix Spike	Total/NA	Water	8015B/5030B	
440-99160-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8015B/5030B	
440-99248-1	B-1b	Total/NA	Water	8015B/5030B	
LCS 440-232213/6	Lab Control Sample	Total/NA	Water	8015B/5030B	
MB 440-232213/7	Method Blank	Total/NA	Water	8015B/5030B	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: Broadbent & Associates, Inc.
Project/Site: ARCO 0374, Oakland

TestAmerica Job ID: 440-99248-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-15 *
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15
USEPA UCMR	Federal	1	CA01531	01-31-15

* Certification renewal pending - certification considered valid.

Laboratory Management Program LaMP Chain of Custody Record

BP Site Node Path: 06-88-602 | Req Due Date (mm/dd/yy): | Rush TAT: Yes ___ No X

BP Facility No: 374 | Lab Work Order Number:

Lab Name: Test America	Facility Address: 6407 Telegraph Avenue	Consultant/Contractor: Broadbent and Associates, Inc.
Lab Address: 17461 Derian Avenue Suite #100, Irvine, CA 92614	City, State, ZIP Code: Oakland, CA	Consultant/Contractor Project No: 06-88-602
Lab PM: Kathleen Robb	Lead Regulatory Agency: Alameda County Public Works Agency	Address: 4820 Business Center Drive, Suite 110, Fairfield, CA 94534
Lab Phone: 949-261-1022	California Global ID No.: T0600100106	Consultant/Contractor PM: Kristene Tidwell
Lab Shipping Accnt: 1103-6633-7	Enfos Proposal No: 0085L-0010 / WR286509	Phone: 707-455-7290 Fax: 707-863-9046
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU ___ OOC-RM ___	Email EDD To: ktidwell@broadbentinc.com and to lab.enfosdoc@bp.com
Other Info:	Stage: Execute (40) Activity: Project Spend (80)	Invoice To: BP x Contractor ___

BP Project Manager (PM): Chuck Carmel

BP PM Phone: 925-275-3804

BP PM Email: charles.carmel@bp.com

Lab No.	Sample Description	Date	Time	Matrix: Soil / Solid	Matrix: Water / Liquid	Matrix: Air / Vapor	Matrix: Is this location a well?	No. Containers / Preservative: Total Number of Containers	Unpreserved	H2SO4	HNO3	HCl	Methanol	Requested Analyses: GRO by 8015M	BTEX, MTBE & ETBE by 8260B	TAME, DIPE & TBA by 8260B	1,2-DCA, EDB & Ethanol by 8260B	Naphthalene by 8260B	Report Type & QC Level
	B-1b	1/16/2015	1120		x		n	6				x		x	x	x	x	x	
	B-1b-3	1/16/2015	0855	x			n	1	x					x	x	x	x	x	
	B-1-B-7	1/16/2015	0945	x			n	1	x					x	x	x	x	x	
	TB-374-01162015	--	--		x		n	1				1							On Hold

Report Type & QC Level: Standard x / Full Data Package ___

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

440-99248 Chain of Custody

Sampler's Name: Alex Martinez	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Broadbent & Associates, Inc.	Alex Martinez BAI	1/16/15	1700	Guenyha TAIrvine	1/17/0	~~1700~~ 10:40 1-17-15
Shipment Method: FedEx Ship Date: 1/16/2015						
Shipment Tracking No: 8037 8050 3044						

Special Instructions: FedEx Sat: 8037 8050 3044

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 1.8/1.0 °F/C IR(F3) | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Login Sample Receipt Checklist

Client: Broadbent & Associates, Inc.

Job Number: 440-99248-1

Login Number: 99248

List Source: TestAmerica Irvine

List Number: 1

Creator: Kim, Guerry

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX G

Soil Vapor Analytical Results – December 18, 2013

Table 2
Soil Vapor Analytical Results
December 18, 2013
ARC Station No. 374
6407 Telegraph Avenue, Oakland, California

Soil Vapor Probe Identification	Probe Sample Depth (feet bgs)	Date Collected	GRO ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m3$)	Total Xylenes* ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
SG-1A	2.5-3.0	12/18/2013	ND<8,500	ND<13	ND<15	ND<17	ND<17	ND<14	ND<21	3.1	<0.00021	18.0
ESLs			**2,500,000**	**420.0**	**1,300,000**	**4,900**	**440,000**	**47,000**	**360**	NA	NA	NA

Notes:

feet bgs = feet below ground surface
$\mu g/m^3$= micrograms per cubic meter
GRO = gasoline range organics (C6-C12)
MTBE = methyl tert-butyl ether

ND<X.XX = not detected above reporting limit of X.XX $\mu g/m^3$
NA = not analyzed
ESLs - Tier 1 Environmental Screening Levels, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater,* California Regional Water Quality Control Board (CRWQCB), Interim Final, December 2013. Commercial/Industrical exposure scenario; Table E-2