Atlantic Richfield Company

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RECEIVED

8:22 am, Feb 28, 2012

Alameda County
Environmental Health

January 25, 2012

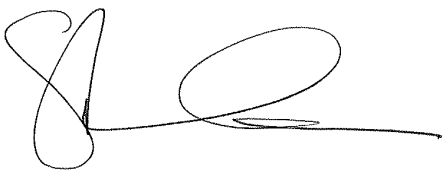
Mr. Paresh Khatri
Alameda County Environmental Health Department
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Re: Conceptual Site Model
ARCO Station No. 0374
6407 Telegraph Avenue
Oakland, California 94609
Alameda County Environmental Health Case No. RO0000078

Dear Mr. Khatri,

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.

Regards,



Shannon Couch
Remediation Management Project Manager
Atlantic Richfield Company, a BP-affiliated company

Enclosure: Conceptual Site Model

cc: Mr. John Skance, ARC (electronic copy uploaded to ENFOS)
Mr. Thomas Sparrowe, Broadbent & Associates, Inc. (electronic copy)

January 25, 2012

Mr. Paresh Khatri
Alameda County
Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502-6577

RE: CONCEPTUAL SITE MODEL
ARCO Station No. 0347
6407 Telegraph Avenue
Oakland, California
ACEH Case No. RO0000078

Dear Mr. Khatri:

Closure Solutions, Incorporated (Closure Solutions) is submitting this *Conceptual Site Model* (CSM) for ARCO Station No. 0347, located at 6407 Telegraph Avenue in Oakland, California (the Site, Figures 1 and 2 in Attachment A) for the purpose of documenting soil and groundwater conditions at the Site based on available environmental data prepared by Atlantic Richfield Company's (ARC's) current and former consultants.

1.0 INTRODUCTION

The Site 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 16-1424-22-5.

A former Mobile Oil Service Station located at 6398 Telegraph Avenue, across the intersection of Telegraph and Alcatraz Avenues (cross-gradient), was identified as a site with a listed leaking underground storage tank (UST)[1]. The leak was reported in March 1986 and the case was reportedly last reviewed in June 1990. Based on a review of the GeoTracker database and Alameda County Environmental Health Services (ACEH) website, no action has been taken by the responsible party since the initial report of the leak, although recommendations included

[1] Report on Releases of Hazardous Substances from Underground Storage Tanks (State Water Resources Control Board, January 1992).

removal of free product and excavation and treatment of contaminated soil. A July 15, 2011 directive to perform site assessment activities is listed on the GeoTracker website.

1.1 Current Use

The Site is currently an active ARCO station and AM/PM™ Mini-Mart. Site facilities include three 12,000-gallon USTs, two dispenser islands, and associated product lines. The majority of the subject property is covered by the station building, asphalt, concrete, and planter areas (Figure 2 in Attachment A).

1.2 Regional Hydrogeology

The Site is located within the Berkeley Sub-Area (Zone B) of the East Bay Plain of the San Francisco Basin[2]. The Berkeley Sub-Area contains a series of alluvial fans deposited on a west sloping bedrock surface. The alluvial deposits range from 10 to 300 feet deep, averaging 100 to 200 feet deep[3]. There is no historical evidence that groundwater supplies are sufficient for municipal use, primarily due to the low hydraulic conductivities of the alluvial deposits. There are no reported clay units that function as major aquitards within the Sub-Area. However, in the Berkeley Sub-Area, the first encountered groundwater is frequently semi-confined, particularly in West Berkeley.

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 are typically oriented in an east-west direction.

1.3 Site Hydrogeology

Based on boring logs and the USGS[4], the Site is underlain Holocene and Pleistocene alluvial fan and fluvial sediments consisting of beds and lenses of medium dense to dense, sandy or silty clay, and clayey or silty sands and gravels to the total explored depth of 28 feet bgs.

Groundwater under confined conditions is typically encountered at depths greater than ten to twelve feet bgs. Since groundwater monitoring began at the Site in 1989, depth-to-water measurements have ranged from approximately 4.5 to 9.5 feet below ground surface (bgs).

[2] East Bay Plain Groundwater Basin Beneficial Use Evaluation Report. California Regional Water Quality Control Board – San Francisco Bay Region (SFRWQCB), June 1999)
[3] ibid.
[4] USGS 1997. Quaternary Geology of Alameda County, and parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin Counties, California: a digital database
By E.J. Helley and R.W. Graymer

Groundwater flow direction has been consistently to the southwest at an average gradient of approximately 0.03 feet per foot. Current and Historical Groundwater Data are presented in Attachment B. Selected Soil Boring/Well Logs are presented in Attachment C.

1.4 Sensitive Receptors

A Sensitive Receptor Survey was performed by Closure Solutions in February 2011 to identify the presence of water wells within a ½-mile radius of the Site. Based on a review of well completion reports furnished by the California Department of Water Resources, two wells were installed in 1935 approximately 1,590 feet south (cross-gradient) of the Site. The well reports did not have identified uses. No other water supply wells were identified within a ½-radius of the Site.

The nearest surface water body identified is an unnamed creek that terminates approximately 3,400 feet east (up-gradient) of the Site. Claremont Creek, the nearest down-gradient natural drainage is 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.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS

Based on available environmental documents prepared by ARC's current and former consultants, Closure Solutions has prepared the following summary of previous environmental corrective actions at the Site. While Closure Solutions does not have reason to believe that the information is incorrect, Closure Solutions has not independently verified this information for accuracy. It is our understanding that:

- In February 1988, a leak was detected in the vapor/vent line of the unleaded system during annual tank testing. In April 1988, a UST Unauthorized Release Report was filed with the Alameda County Public Health Service by Brown and Caldwell.

- In April 1988, Applied Geosystems (AGS) advanced soil borings B-1 through B-4 near the USTs. Total petroleum hydrocarbons as gasoline (TPHg) concentrations in soil samples ranged from 48 to 930 milligrams per kilogram (mg/kg). Groundwater was encountered at approximately 10 feet bgs. One inch of floating product was observed in a "grab" groundwater sample collected from boring B-1. Product sheen was also observed in "grab" groundwater samples from borings B-2 and B-4.

- In June 1988, four gasoline USTs were removed from the Site. No holes were observed in the removed tanks; however, some of the protective asphaltic coating had dissolved

around the fill ports of the tanks. Laboratory analyses of the soil samples collected beneath former tank T4 (identified on Plate P-2 in Attachment A) indicated TPHg concentrations ranging from 3 mg/kg to 1,097 mg/kg. The excavation was extended north of tank T4; a soil sample (S-12-T4A2) collected after this excavation indicated a TPHg concentration of 795 mg/kg. A soil sample collected beneath the north end of tank T1 (S-11-T1A) indicated a TPHg concentration of 399 mg/kg. Groundwater was observed seeping into the northwestern portion of the UST pit at a depth of approximately 12 feet. Observation wells W-1 and W-2 were installed in the former UST pit and observation wells W-3 and W-4 were installed in the new UST pit. Subjective analyses of the water from these wells indicated the presence of sheen in wells W-1 and W-2 in the former UST pit.

- In December 1988, AGS collected a groundwater sample from well W-4 and analyzed for TPHg and the volatile gasoline constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX). No detectable concentrations of TPHg or BTEX were reported (AGS, January 5, 1989).

- In July 1989, AGS installed groundwater monitor wells MW-1 through MW-4. Well MW-3 was installed offsite on the west side of Irwin Court. Eight of the nine soil samples collected from the monitor well borings had reported non-detect concentrations of gasoline constituents. A TPHg concentration of 60 mg/kg was reported for the sample obtained from a depth of 8.5 feet in the MW-1 boring.

- In April 1991, RESNA performed step-drawdown and constant discharge tests using tank backfill well W-2. Using the test results, the hydraulic conductivity of the aquifer outside of the backfill material was calculated at approximately 0.37 feet per day.

- In April 1992, RESNA advanced offsite soil borings B-5 and B-6 and converted the borings into wells MW-5 and MW-6, southwest and west of the Site. No TPHg or BTEX were reported in the soil samples collected from the borings.

- Between October and December 1993, RESNA oversaw installation of a groundwater extraction (GWE) remediation system at the Site. System operation commenced on December 21, 1993. Water was extracted from well W-2 and treated using liquid-phase activated carbon before being discharged to the sanitary sewer. The system was shut down on October 13, 1995 following verbal approval from the ACEH. A total of 93,989 gallons of water were reportedly extracted during system operation and an estimated 2.61 pounds of TPHg were removed from groundwater.

- In September 1995, dispensers and associated underground product lines were removed from the Site. Pacific Environmental Group (PEG), Inc. collected soil samples beneath both the dispenser islands and product lines. Total purgeable petroleum hydrocarbons as gasoline (TPPHg) were reported for soil samples collected from beneath the product lines at concentrations ranging between 1.9 mg/kg and 65 mg/kg; benzene was detected in soil sample TR-A-13 at 0.30 mg/kg. Beneath the product dispensers, TPPHg was detected at concentrations ranging between 19 mg/kg and 140 mg/kg; benzene was detected in two soil samples at 2.1 mg/kg (TR-A-14) and 0.0089 mg/kg (TR-A-15).

- In November 1995, PEG installed oxygen releasing compound (ORC) socks in well MW-3 to enhance bioremediation. In September 1998, Pinnacle Environmental Solutions installed ORC socks in well MW-4. The bioremediation enhancement program was terminated during the Second Quarter of 2000.

- In November 2008, Stratus Environmental, Inc. (Stratus) conducted an onsite soil investigation in order to characterize residual hydrocarbon contamination within soils at the former UST area. Soil borings B-11 and B-12 were advanced in the vicinity of historical soil samples S-12-T4A1 and S-12-T4A2, respectively. Soil samples collected from 15 feet (B-11) and 15.5 feet (B-12) were analyzed for GRO, BTEX, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), di-isopropyl ether (DIPE), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), tertiary butyl alcohol (TBA), and ethanol. All analytes were non-detect with the exception of trace concentrations of MTBE (0.0072 mg/kg and 0.014 mg/kg) at 15 feet bgs and TBA (0.011 mg/kg) at 15.5 feet bgs. The boring locations are depicted on Drawing 2 in Attachment D.

- In December 2008, Stratus collected compliance soil samples during dispenser and product piping upgrades. Soil samples were collected beneath the fuel dispensers and short pipeline stubs into the main product lines, which were not removed/replaced. Based on initial soil sample analytical results, limited excavation was attempted to remove soil from sampling locations D4-2.5' and PL3-3' due to their elevated hydrocarbon concentrations. Additional soil samples (D-4 5' and PL-3 5') were collected on December 9, 2008 from approximately 5 feet bgs in an attempt to delineate the vertical extent of contamination at the two previous locations with elevated hydrocarbon concentrations. Additional soil sample PL-3 5' contained lower hydrocarbon concentrations than the original sample, while sample D-4 5' contained higher hydrocarbons concentrations than the original sample. Maximum GRO and

benzene concentrations reported in the soil samples were 6,500 mg/kg and 19 mg/kg, respectively. A total of approximately 84 cubic yards of soil was transported by Belshire Environmental Services to the Forward Incorporated Allied Waste Services disposal facility in Manteca California.

- In September 2009, Stratus oversaw advancement of four direct-push borings (B-13, B-14, B-14A, and B-15) in the vicinity of the south end of the eastern pump island. The borings were advanced near the December 2008 pipeline and dispenser samples PL-3 and D-4, to a maximum depth of 18 feet bgs; soil samples for laboratory analyses were obtained from 4.5 feet, 6.5 feet, and 8.5 feet bgs from each boring. Soil samples from B-13 and B-15 contained GRO up to 1,800 mg/kg, benzene up to 8.2 mg/kg, and MTBE up to 0.024 mg/kg. Soil samples from boring B-14 to the south of the pump island contained GRO up to 390 mg/kg, benzene up to 0.56 mg/kg, and MTBE up to 0.025 mg/kg. A "grab" groundwater sample collected from boring B-15 contained 19,000 micrograms per liter (ug/L) of GRO, 3,700 ug/L of benzene, and 250 ug/L of MTBE[5].

- In November 2010, BAI advanced four soil borings (B-16 through B-19) and converted three borings (B-16 through B-18) to groundwater monitor wells (MW-7, MW-8, and MW-9).

Groundwater monitoring has been conducted at the Site since July 1989. Current and historical groundwater monitoring results, including intrinsic bioremediation data, are presented in Attachment B. Selected soil boring/well logs are presented in Attachment C and historical soil sample results are presented in Attachment D. Geologic Cross-Sections are presented as Attachment E and GWE system performance data is presented as Attachment F.

3.0 ENVIRONMENTAL CONDITIONS

3.1 Extent of Soil Impact

Elevated concentrations of gasoline hydrocarbons have been encountered in soil samples beneath the former UST complex located in the southwestern portion of the Site and beneath the dispenser island and product piping located in the eastern portion of the Site. The southwest source area was over-excavated in 1988 to remove affected soil near tank T4. Post-excavation soil samples indicate the absence of any remaining residual gasoline saturation to about 12 feet

[5] Because the sample was "grabbed" from the highly disturbed, suspended-sediment-rich environment, it should not be relied upon as a quantitative indicator of ambient groundwater quality. At best, such a "grab" sample should be used to provide evidence of the absence of constituents (either dissolved or adsorbed to suspended sediments) or a qualitative indicator that constituents are present in the sample, although not necessarily dissolved in ambient groundwater.

bgs. The dispenser island source area has been assessed and characterized by four soil borings (B13, B14, B15, and B19) and three monitor wells (MW- 7, MW-8, and MW-9). Based on soil sample analytical data and the distance between the pump islands and select borings, the release appears to have significantly impacted soil to a depth of about ten feet bgs within a 25 foot radius. Soil samples collected below ten feet bgs indicate the source attenuates to low to non-detect concentrations for all constituents by 15 feet bgs.

3.2 Extent of Groundwater Impact

Dissolved-phase gasoline constituents remain in groundwater at the Site. Elevated concentrations of GRO and BTEX are reported in groundwater samples obtained from well MW-4 at the T-4 UST source area and low to non-detect for groundwater samples from the dispenser island source area monitor wells MW-2, MW-7, MW-8, and MW-9. The high concentrations of gasoline constituents detected in groundwater samples from well MW-4 appear to be a consequence of the confined groundwater conditions at the Site and the well's construction. With the well's screen extending into the zone of contaminated soil at about eight to ten feet bgs, the deeper groundwater under confined conditions is permitted to rise within the well casing and come into contact with affected soil, thus the groundwater analytical data for well MW-4 appear to be positively skewed and over state actual groundwater impacts.

The dissolved MTBE plume is adequately delineated in the down-gradient direction with the highest concentrations typically observed in well MW-1 in the northwest portion of the Site and in recently installed well MW-9 in the southeast (down-gradient/cross-gradient) portion of the Site. Declining MTBE concentrations in source area well MW-4 versus stable concentrations in MW-1 suggests a possible up-gradient source. Over the past four quarters, the highest MTBE concentration at the Site was 390 ug/L in well MW-9 (12/16/2010). MTBE is also typically detected in down-gradient wells MW-3 and MW-6 at very low concentrations and has not been detected in the furthest down-gradient well MW-5 since 2002. Although the data suggest a source apart from the two already discussed, i.e. up-gradient of monitor well MW-1, the data indicate that the plume is stable and concentrations are declining.

Current and historical groundwater monitoring results, including intrinsic bioremediation data, are presented in Attachment B.

4.0 EXPOSURE PATHWAY EVALUATION

Closure Solutions has prepared the following table to outline the potential human health exposure pathways, and evaluate whether such pathways are complete or significant.

Potential Exposure Medium	Potential Exposure Pathway	Pathway Evaluation
Water	Ingestion	***Pathway Incomplete:*** Impacted groundwater not reasonably expected to affect existing drinking water wells or surface waters.
	Dermal Contact	
Subsurface Soil	Ingestion	***Pathway Incomplete:*** Site is currently paved and current land use is not expected to change in foreseeable future.
	Dermal Contact	
Soil Vapor	Intrusion into Indoor Air	***Comparatively Insignificant:*** Potential exposure to soil vapor likely insignificant when compared with exposure associated with current Site use as a retail gasoline service station.

4.1 Groundwater

The groundwater exposure pathway is considered incomplete. A recent well survey identified two wells with unknown usage located approximately 1,590 feet cross-gradient of the Site. The nearest surface body water is an unnamed creek that terminates approximately 3,400 feet east of the Site.

Dissolved-phase gasoline constituents have been delineated to near or below laboratory detection limits. No fuel hydrocarbon concentrations are detected in monitoring wells that surround the source areas onsite. Although MTBE is typically reported in samples from most of the onsite wells, concentrations are relatively low and MTBE has only been detected once (March 2002 at 3.2 ug/L) in the furthest down-gradient well (MW-5). It is noted that the release occurred over 23 years ago, and if the plume has not migrated significantly beyond the extent of the property since that time, it is unlikely to do so in the future. Additionally, a GWE system operated onsite from late 1993 to 1995 drawing 93,989 gallons of impacted groundwater and removing an estimate 2.61 pounds of hydrocarbon. The minimal amount of hydrocarbon recovery suggests that the confined groundwater was not significantly affected by the release. Free product has not

been observed at the Site since 1988. The groundwater analytical data indicate that plume of dissolved-phase gasoline hydrocarbons and fuel additives are stable and naturally attenuating.

Given the distance to the closest surface water, the absence of known nearby drinking water wells in the vicinity of the Site, and the fact that the plume is stable, dissolved-phase compounds are unlikely to threaten public health and safety. Additionally, based on the East Bay Plains Report, it is unlikely that water supply wells will be installed in the vicinity of the Site in the foreseeable future. Lastly, dermal contact with impacted groundwater is also unlikely given the depth to groundwater is approximately 7.5 feet bgs and the Site surface is paved.

4.2 Subsurface Soil

The subsurface soil exposure pathway is considered incomplete based on soil concentrations, Site use, and the presence of asphalt or concrete covering impacted soil. Additionally, land use is not expected to change in the foreseeable future. All known leaking facilities have been removed from the Site and there is no evidence of an ongoing release. To reduce residual impacts, heavily impacted soil was excavated and removed from the Site during the 1988 UST replacement activities and 2008 dispenser and piping upgrades.

4.3 Soil Vapor

Benzene is the constituent most likely to cause potential health risks to onsite workers at the Site. According to the San Francisco Regional Water Quality Control Board Environmental Screening Levels (Regional Board ESLs) Table E-1 (Attachment G), the ESL for Vapor Concerns for benzene in groundwater is 1,800 ug/L for commercial/industrial land use.

The recent maximum benzene concentration in groundwater is 2,100 ug/L in well MW-4 (Third Quarter 2011). As explained previously, concentrations of petroleum hydrocarbons reported for groundwater samples from this well are positively skewed due to the well's long screen interval that allows groundwater under confined condition to come in contact with residual soil contamination. Further, the Regional Board ESLs presume water table conditions. Because the water bearing zone at the Site is under confined conditions and the water quality data for well MW-4 are not representative of ambient groundwater it is highly unlikely that existing contaminants in Site groundwater pose a vapor intrusion threat. Closure Solutions considerers this pathway to be insignificant when compared with exposure associated with current Site use as a retail gasoline service station.

5.0 CONTENTIONS AND OBSERVATIONS

Based on soil and groundwater analytical data from Site investigations, remediation activities groundwater monitoring, and other corrective actions performed at the Site, several key observations and contentions may be supported. The observations and contentions are presented below, along with the justification supporting each observation or contention.

Site conditions do not represent a substantial threat to public health, safety or the environment. The release has been stopped and a substantial volume of affected soil to a depth of about 12 feet bgs has been excavated. Shallow groundwater under confining conditions at and in the vicinity of the Site is not used as a source of drinking water or other beneficial use. The source of contamination has been remediated to the extent practicable; minimal benefit will be achieved by requiring additional corrective actions.

Although residual gasoline constituents remain sorbed to fine-grained soil in a localized area and will cause the exceedance of Water Quality Objectives in shallow groundwater within the source area for a considerable period of time, the plume appears stable and the dissolved-phase constituents to be naturally attenuating. The manner in which Site wells have been constructed (typically screened across zones of contaminated soil and into deeper water bearing zones under confined conditions) has resulted in a skewed concept of actual impacts. Based on these facts, an understanding of the Site's hydrology and geology, and the unlikelihood that the shallow affected groundwater will be used as a source of drinking water or other beneficial use, Site conditions do not represent a threat to public health and safety.

No practicable benefit will be gained by expending additional money in efforts to extract the diminishing mass of residual petroleum hydrocarbons remaining in Site soil and groundwater and routinely report on the Site's status. Releases at the dispenser islands and the former UST source area have impacted soils with low hydraulic conductivities and effective porosities in a limited area to a depth of about ten feet bgs. To remove all traces of residual petroleum constituents at the Site would require significant effort and cost. If complete removal of detectable traces of petroleum constituents becomes the standard for UST corrective actions, the statewide technical and economic implications will be enormous.

6.0 LIMITATIONS

This report is based on Site conditions, data, and other information available as of the date of the report, and the conclusions and recommendations herein are only applicable to the time frame in which the report was prepared. Background information used to prepare this report including, but not limited to, previous field measurements, analytical results, Site plans and other data have been furnished to Closure Solutions by ARC and their previous consultants. Closure Solutions has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information.

If you have any questions regarding this submission, please feel free to contact Mr. Dennis Parfitt at (916) 760-7579 (dparfitt@closuresolutions.com) or Ms. Kathleen Waldo at (916) 760-7025 (kwaldo@closuresolutions.com).

Sincerely,
Closure Solutions, Inc.

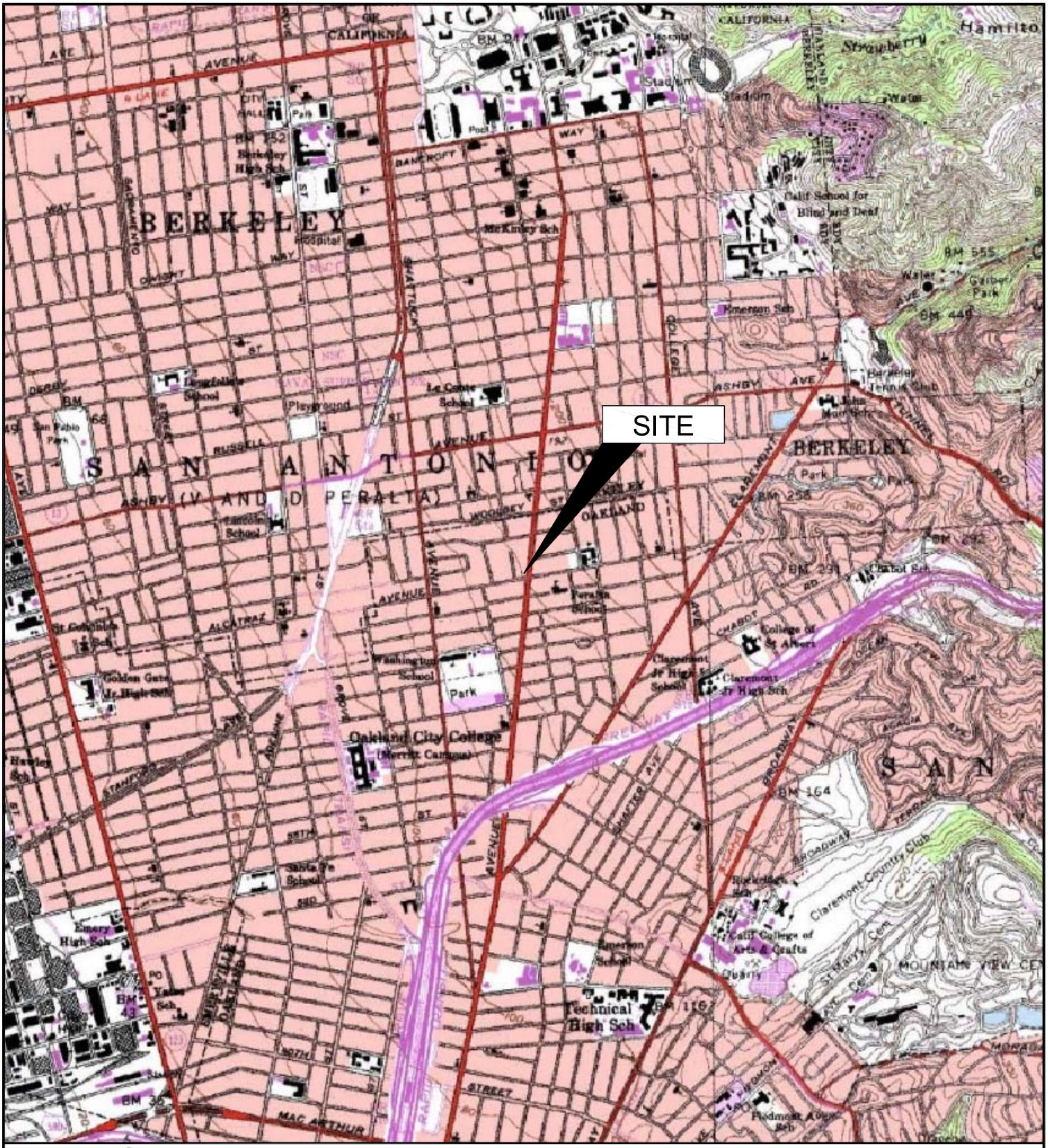
Dennis Parfitt, CEG
Principal Geologist

Attachments:

Attachment A	Figures
Attachment B	Historical Groundwater Monitoring Data
Attachment C	Soil Boring Logs and Well Construction Details
Attachment D	Historical Soil Analytical Data
Attachment E	Cross-Sections
Attachment F	Groundwater Extraction Performance Data
Attachment G	San Francisco Regional Water Quality Control Board Environmental Screening Levels

ATTACHMENT A

Figures



N

0 2000 4000

APPROXIMATE SCALE (ft)

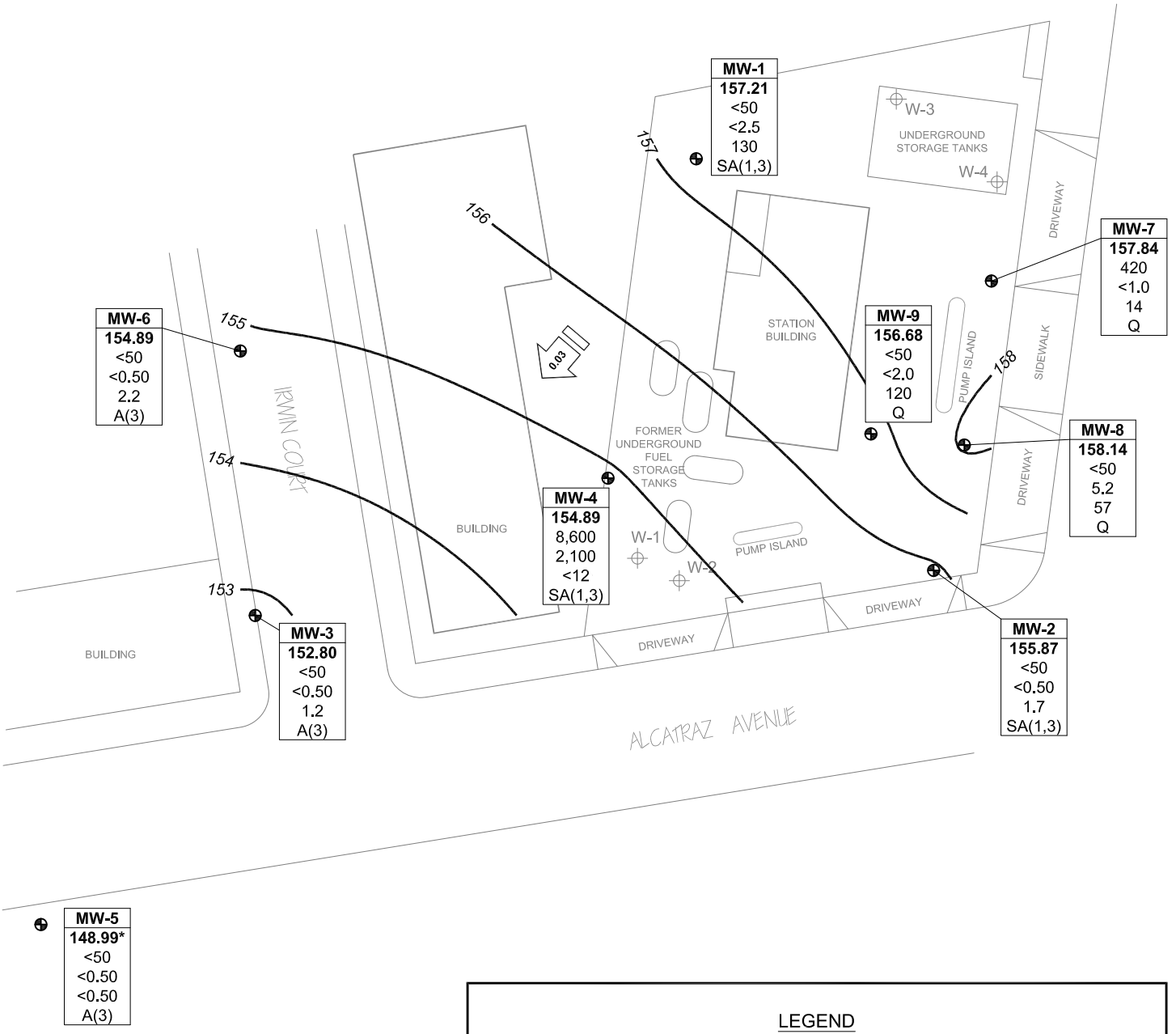
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-602 Date: 10/30/09

Station #374
6407 Telegraph Ave.
Oakland, California

Site Location Map

Drawing
1



LEGEND

⊕	Monitor Well Location	A(3)	Sampled Annually - Third Quarter
⊕	Tank Pit Monitor Well Location	SA(1,3)	Sampled Semi-Annually - First and Third Quarter
——	Groundwater Elevation Contour (Feet Above Site Datum)	Q	Sampled Quarterly
0.03	Groundwater Gradient (ft/ft)	NM	Not Monitored
		NS	Not Sampled
		*	Not used in contouring

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

N

0 40 80

SCALE (ft)

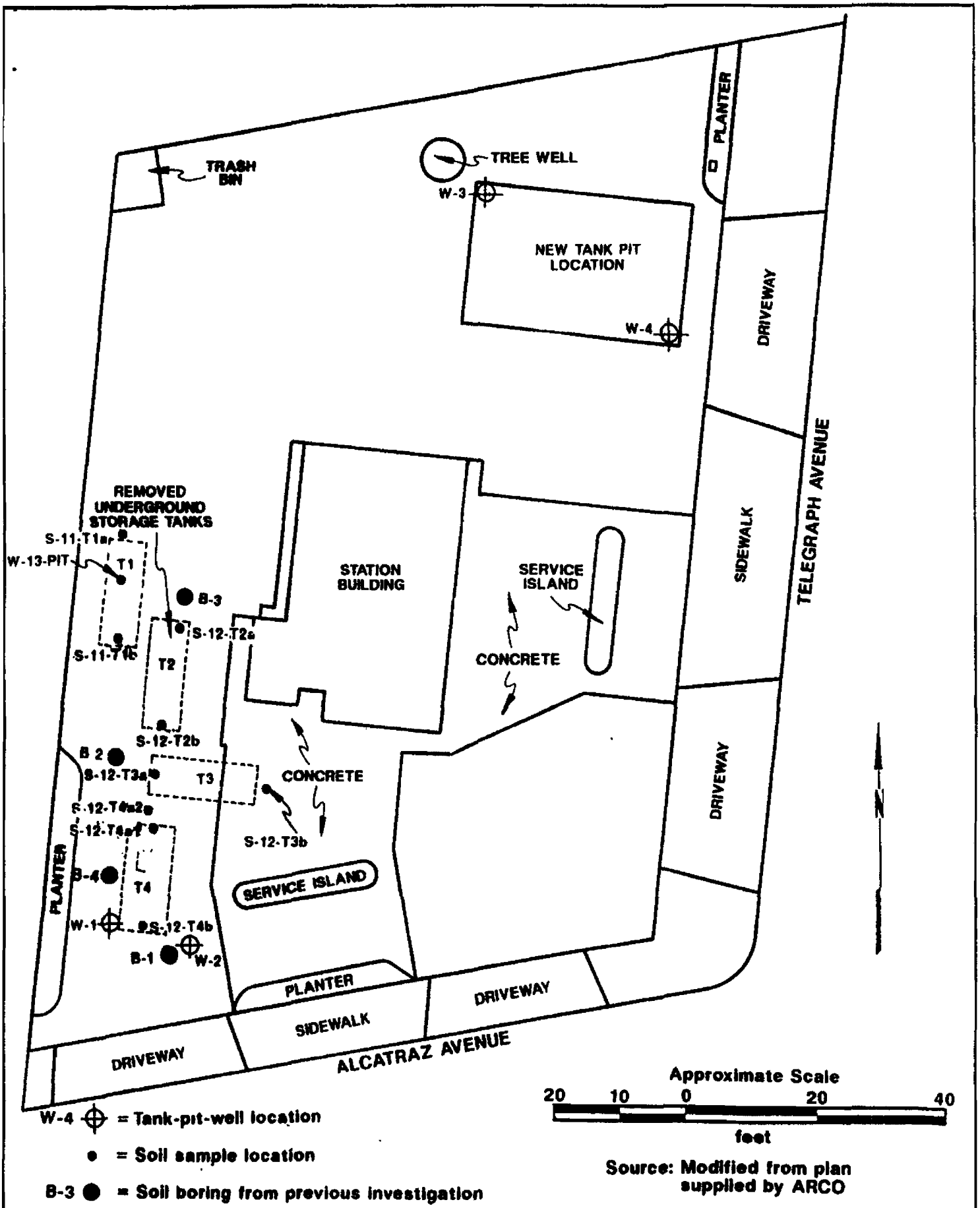
NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
875 Cotting Lane Suite G, Vacaville, California
Project No.: 06-88-602 Date: 8/31/2011

Station #374
6407 Telegraph Ave.
Oakland, California

Groundwater Elevation Contours
and Analytical Summary Map
August 15, 2011

Drawing
2



Applied GeoSystems

PROJECT NO. 18039-2

GENERALIZED SITE PLAN
ARCO Station No. 374
Telegraph and Alcatraz Avenues
Oakland, California

PLATE
P - 2

LEGEND

- Monitor Well Location
- Tank Pit Monitor Well Location
- Soil Boring Location
- MW-9 330 — Well ID with GRO Concentration (µg/L)
- GRO Isoconcentration Contour (µg/L)
- NS — Not Sampled
- ** — Grab Groundwater Sample

N

0 40 80

SCALE (ft)

NOTE: SITE MAP ADAPTED FROM STANTEC FIGURES.
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926

Project No.: 06-88-602 Date: 12/30/2010

Station #374
6407 Telegraph Ave.
Oakland, California

GRO Isoconcentration Contours
December 16, 2010

Drawing
4

LEGEND

- Monitor Well Location
- Tank Pit Monitor Well Location
- Soil Boring Location
- MW-9 18 — Well ID with Benzene Concentration (µg/L)
- Benzene Isoconcentration Contour (µg/L)
- NS — Not Sampled
- ** — Grab Groundwater Sample

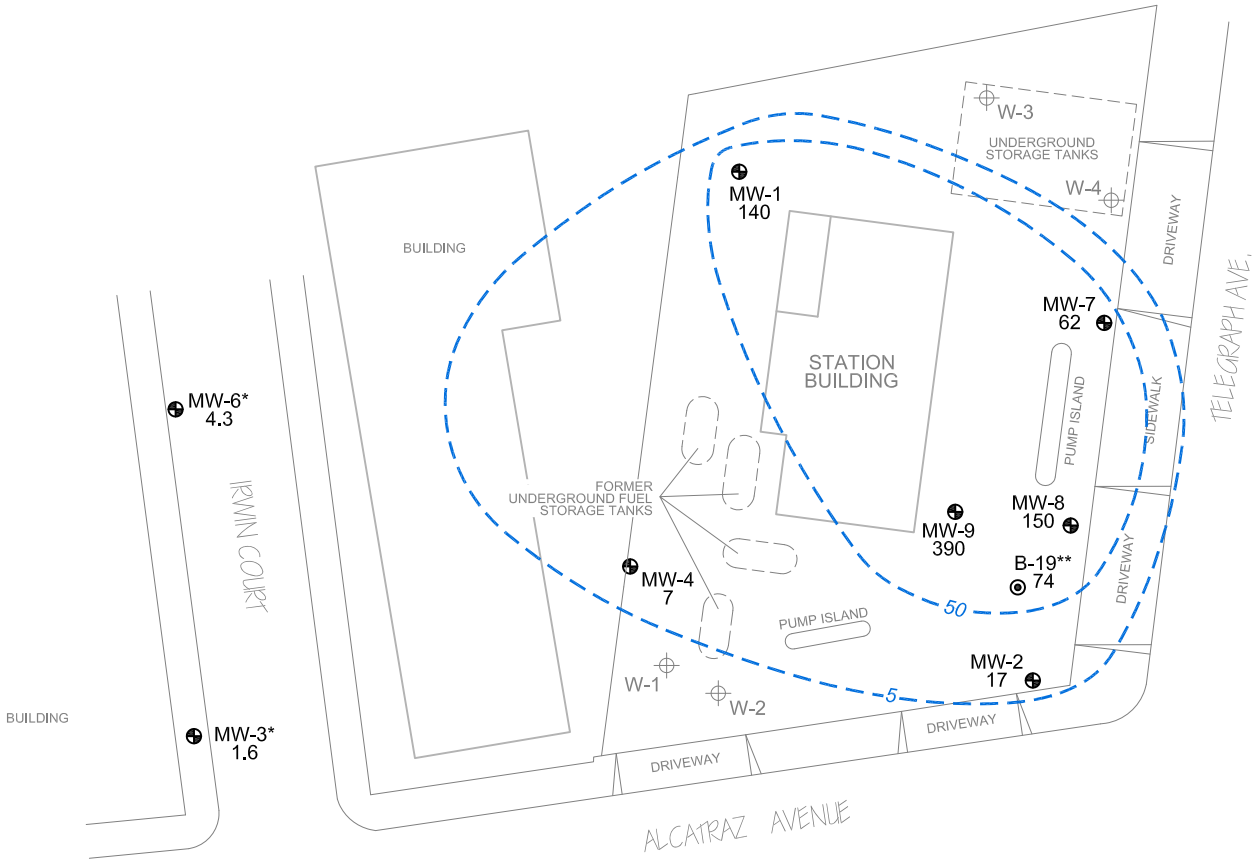
NOTE: SITE MAP ADAPTED FROM STANTEC FIGURES.
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-88-602 Date: 12/30/2010

Station #374
6407 Telegraph Ave.
Oakland, California

Benzene Isoconcentration Contours
December 16, 2010

Drawing
5



MW-5*
<0.50

N

0 40 80

SCALE (ft)

LEGEND

- Monitor Well Location
- Tank Pit Monitor Well Location
- Soil Boring Location
- MW-9 390 — Well ID with MTBE Concentration (µg/L)
- MTBE Isoconcentration Contour (µg/L)
- NS — Not Sampled
- * — Well Sampled 8/10/2010
- ** — Grab Groundwater Sample

NOTE: SITE MAP ADAPTED FROM STANTEC FIGURES.
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 06-88-602 Date: 12/31/2010

Station #374
6407 Telegraph Ave.
Oakland, California

MTBE Isoconcentration Contours
December 16, 2010

Drawing
6

ATTACHMENT B

Historical Groundwater Monitoring 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. 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	
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	--	--	--	--	--	--	--	--	
12/6/2002	--		7.00	27.00	8.29	149.63	--	--	--	--	--	--	--	--	

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.															
1/29/2003	--	157.92	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	
2/19/2010	NP		7.00	27.00	7.36	156.10	<50	<0.50	<0.50	<0.50	<0.50	*22*	0.81	6.90	

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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-2 Cont.															
8/10/2010	NP	163.46	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	
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	--	--	--	--	--	--	--	--	
05/09/2005	--		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	

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							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.															
11/18/2005	--	159.21	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	
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	--	--	--	--	--	--	--	--	
12/17/2000	--		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*	--	--	

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.															
9/23/2001	--	156.53	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	
11/14/2007	--		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

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.															
8/21/2008	NP	162.47	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
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
5/23/2003	--		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

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-5 Cont.															
05/14/2004	--	151.33	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	
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	

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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-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	
11/18/2005	--		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	--	--	--	--	--	--	--	--	

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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.															
5/8/2007	--	159.41	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	
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	
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	

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-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	

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*	
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*	
MW-3									
6/20/2000	--	--	*<10*	--	--	--	--	--	
12/17/2000	--	--	<2.5	--	--	--	--	--	
6/21/2001	--	--	2.5	--	--	--	--	--	
12/31/2001	--	--	4.9	--	--	--	--	--	

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.									
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*	
2/22/2008	<6,000	*<200*	*70*	<10	<10	<10	*<10*	*<10*	
8/21/2008	<12,000	*<400*	*53*	<20	<20	<20	*<20*	*<20*	

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.									
2/23/2009	<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*	
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*	
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*	

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.									
8/15/2011	<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*	
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*	
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*	

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

Table 3
Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Oil and Grease)

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

Well Number	Date Sampled		TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Oil and Grease (ppb)
MW-1	07/21/89		33	0.77	1.6	15	5	NA	NA
	08/30/89		<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	10/04/89		<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	01/10/90		<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	08/07/90		<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	12/06/90		<50	3.6	2.7	0.60	5.8	NA	NA
	02/20/91		<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	07/08/91		<30	<0.30	<0.30	<0.30	<0.30	NA	NA
	09/25/91		<30	57	57	54	1.7	NA	NA
	11/20/91		57	9.2	3.7	0.63	25	NA	NA
	03/09/92		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/15/92		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	07/14/92		<50	<0.5	0.7	<0.5	1.3	NA	NA
	10/12/92		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	01/21/93		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/27/93		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/04/93		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/13/93		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/03/94		<50	1.4	2.1	<0.5	2	NA	NA
	04/29/94		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/02/94		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/23/95		<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	05/09/95		<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	08/07/95	a	<500	<5.0	<5.0	<5.0	<5.0	NA	NA
	11/02/95		<50	3.6	<0.50	<0.50	<0.50	NA	NA
MW-2	07/21/89		4,200	280	210	38	24	NA	NA
	08/30/89		4,200	160	260	45	240	NA	NA
	10/04/89		4,300	860	300	29	330	NA	NA
	01/10/90		8,000	890	710	120	760	NA	NA
	08/07/90		6,000	880	76	25	80	NA	NA
	12/06/90		1,600	330	69	18	63	NA	NA
	02/20/91		1,300	160	46	13	48	NA	NA
	07/08/91		310	76	18	7.7	24	NA	NA
	09/25/91		83	17	0.69	2.2	4.1	NA	NA
	11/20/91		180	46	6.1	3	8.7	NA	NA
	03/09/92		690	170	25	21	58	NA	NA
	04/15/92		86	20	2.3	3.8	85	NA	NA
	07/14/92		160	46	1.4	1.2	35	NA	NA
	10/12/92		230	59	7	55	11	NA	NA
	01/21/93		450	70	6.6	22	54	NA	NA
	04/27/93		<50	6.6	<0.5	0.7	1.1	NA	NA
	08/04/93		<50	2.1	<0.5	<0.5	<0.5	NA	NA
	10/13/93		<50	14	<0.5	<0.5	<0.5	NA	NA
	02/03/94		<50	4.4	<0.5	<0.5	0.8	NA	NA
	04/29/94		150	38	0.7	4.3	4.8	NA	NA
	08/02/94		<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94		95	28	0.7	2.5	7.5	NA	NA

Table 3 (continued)
Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Oil and Grease)

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

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Oil and Grease (ppb)
MW-2	02/23/95	<50	1.8	<0.50	<0.50	<0.50	NA	NA
(cont.)	05/09/95	<50	1.9	<0.50	<0.50	<0.50	NA	NA
	08/07/95	<50	0.66	<0.50	<0.50	<0.50	NA	NA
	11/02/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-3	07/21/89	430	9	4.8	<0.50	50	NA	NA
	08/30/89	1,200	85	46	84	55	NA	NA
	10/04/89	7,000	580	900	120	670	NA	NA
	01/10/90	940	130	59	21	73	NA	NA
	08/07/90	2,300	180	64	59	120	NA	NA
	12/06/90	460	52	55	14	39	350	NA
	02/20/91	470	36	30	9.3	31	<100	<5,000
	07/08/91	2500	240	470	74	320	NA	NA
	09/25/91	1,100	120	110	34	120	NA	NA
	11/20/91	1,000	180	140	43	140	NA	NA
	03/10/92	1,200	200	110	53	130	NA	NA
	04/15/92	1,600	200	13	110	81	NA	NA
	07/14/92	5,200	620	44	310	250	NA	NA
	10/12/92	850	150	5.2	55	46	NA	NA
	01/21/93	620	100	12	35	35	NA	NA
	04/27/93	1,700	180	83	64	100	NA	NA
	08/04/93	380	70	12	29	41	NA	NA
	10/13/93	780	90	6	40	31	NA	NA
	02/03/94	340	42	8.7	9.2	28	NA	NA
	04/29/94	830	150	38	27	48	NA	NA
	08/02/94	220	25	1.7	7.6	8.3	NA	NA
	11/12/94	160	6.0	<0.5	3.2	4.1	NA	NA
	02/23/95	120	1.3	<0.50	1.1	1.6	NA	NA
	05/09/95	190	20	6.6	8.9	20	NA	NA
	08/07/95	<50	2.3	0.51	0.51	0.57	NA	NA
	11/02/95	<50	2.3	<0.50	<0.50	0.94	NA	NA
MW-4	07/21/89	8,700	720	360	120	640	NA	NA
	08/30/89	7,300	630	220	N/A	320	NA	NA
	10/04/89	21,000	2,300	1,300	280	1,300	NA	NA
	01/10/90	4,300	470	250	63	430	NA	NA
	08/07/90	69,000	8,700	4,200	540	4,600	28,000	<5,000
	12/06/90	---------- Separate-Phase Hydrocarbon Sheen ----------						
	02/20/91	5,200	690	200	95	580	<100	<5,000
	07/08/91	1,700	280	68	37	170	NA	NA
	09/25/91	6,300	2,100	290	210	590	NA	NA
	11/20/91	2,700	1,200	200	110	320	NA	NA
	03/10/92	690	180	80	18	43	NA	NA
	04/15/92	8,500	2,100	750	280	1,000	NA	NA
	07/14/92	10,000	2,900	530	290	930	NA	NA
	10/12/92	19,000	5,200	1,600	490	1,800	690	NA
	01/21/93	22,000	4,400	1,300	580	2,200	1,400	NA
	04/27/93	21,000	4,800	1,200	630	2,400	1,100	NA
	08/04/93	23,000	6,600	1,700	770	2,600	1500	NA

Table 3 (continued)
Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Oil and Grease)

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

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Oil and Grease (ppb)
MW-4	10/13/93	16,000	3,500	800	470	1,800	670	NA
(cont.)	02/03/94	850	140	84	7.9	59	59	NA
	04/29/94	68	1.1	<0.5	<0.5	1.7	<50	NA
	08/02/94	52	5.7	<0.5	1.2	1.9	<50	NA
	11/12/94	1,600	230	51	81	190	90	NA
	02/23/95	1,700	340	81	52	130	NA	NA
	05/09/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	08/07/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	11/02/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-5	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	07/14/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/27/93	<50	0.5	1	<0.5	0.8	NA	NA
	08/05/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/03/94	<50	0.8	1.7	<0.5	15	NA	NA
	04/29/94	Well inaccessible						
	08/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/23/95	<50	<0.50	0.56	<0.50	0.50	NA	NA
	05/09/95	<50	<0.50	0.56	<0.50	0.50	NA	NA
	08/07/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	11/02/95	<50	<0.50	1.8	<0.50	<0.50	NA	NA
MW-6	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	07/15/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/27/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/05/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/13/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/29/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/23/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	05/09/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	08/07/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	11/02/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA

TEPH = Total extractable petroleum hydrocarbons
ppb = Parts per billion
NA = Not analyzed
a. Detection limits were raised due to analysis for MTBE
Prior to June 1995, TPPH as gasoline and TEPH as diesel were reported as TPH as gasoline and diesel, respectively.

Table 4
Groundwater Analytical Data
Total Methyl t-Butyl Ether

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

Well Number	Date Sampled	Methyl t-Butyl Ether (ppb)
MW-1	08/07/95	510
MW-2	08/07/95	37
MW-3	08/07/95	<2.5
MW-4	08/07/95	<2.5
MW-5	08/07/95	<2.5
MW-6	08/07/95	160

ppb = Parts per billion
See certified analytical report for detection limit.

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	01/31/96	158.91	6.34	152.57	Not Sampled: Well Sampled Annually							
MW-1	04/10/96	158.91	5.82	153.09	Not Sampled: Well Sampled Annually							
MW-1	07/16/96	158.91	7.23	151.68	<50	<0.5	<0.5	<0.5	<0.5	340	NM	
MW-1	10/14/96	158.91	8.34	150.57	Not Sampled: Well Sampled Annually							
MW-1	03/27/97	158.91	6.37	152.54	Not Sampled: Well Sampled Annually							
MW-1	05/27/97	158.91	7.30	151.61	Not Sampled: Well Sampled Annually							
MW-1	08/12/97	158.91	8.22	150.69	<50	<0.5	<0.5	<0.5	<0.5	620	NM	
MW-1	11/17/97	158.91	7.98	150.93	Not Sampled: Well Sampled Annually							
MW-1	03/16/98	158.91	4.94	153.97	Not Sampled: Well Sampled Annually							
MW-1	05/12/98	158.91	5.28	153.63	Not Sampled: Well Sampled Annually							
MW-1	07/27/98	158.91	6.84	152.07	<500	<5	<5	<5	<5	580	0.6	P
MW-1	10/15/98	158.91	7.32	151.59	Not Sampled: Well Sampled Annually							
MW-1	02/18/99	158.91	6.28	152.63	Not Sampled: Well Sampled Annually							
MW-1	05/24/99	158.91	6.45	152.46	<50	<0.5	<0.5	<0.5	<0.5	1,300	2.0	NP
MW-1	08/27/99	158.91	7.86	151.05	<50	<0.5	<0.5	<0.5	<0.5	1,500	1.65	NP
MW-1	10/26/99	158.91	8.43	150.48	Not Sampled: Well Sampled Annually						2.16	
MW-1	02/03/00	158.91	7.28	151.63	<50	<0.5	<0.5	<0.5	<1	4,000	1.0	NP
MW-2	01/31/96	157.92	6.51	151.41	Not Sampled: Well Sampled Annually							
MW-2	04/10/96	157.92	6.94	150.98	Not Sampled: Well Sampled Annually							
MW-2	07/16/96	157.92	7.73	150.19	<50	1.2	<0.5	<0.5	<0.5	33	NM	
MW-2	10/14/96	157.92	8.35	149.57	Not Sampled: Well Sampled Annually							
MW-2	03/27/97	157.92	7.40	150.52	Not Sampled: Well Sampled Annually							
MW-2	05/27/97	157.92	7.82	150.10	Not Sampled: Well Sampled Annually							
MW-2	08/12/97	157.92	8.29	149.63	<50	<0.5	<0.5	<0.5	<0.5	23	NM	
MW-2	11/17/97	157.92	8.05	149.87	Not Sampled: Well Sampled Annually							
MW-2	03/16/98	157.92	6.45	151.47	Not Sampled: Well Sampled Annually							

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-2	05/12/98	157.92	6.93	150.99	Not Sampled: Well Sampled Annually							
MW-2	07/27/98	157.92	7.39	150.53	<50	<0.5	<0.5	<0.5	<0.5	<3	0.85	NP
MW-2	10/15/98	157.92	7.67	150.25	Not Sampled: Well Sampled Annually							
MW-2	02/18/99	157.92	6.63	151.29	Not Sampled: Well Sampled Annually							
MW-2	05/24/99	157.92	7.43	150.49	<50	6.3	<0.5	0.7	<0.5	29	3.0	P
MW-2	08/27/99	157.92	8.22	149.70	<50	<0.5	<0.5	<0.5	<0.5	<3	0.95	NP
MW-2	10/26/99	157.92	8.46	149.46	Not Sampled: Well Sampled Annually						1.71	
MW-2	02/03/00	157.92	7.75	150.17	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP
MW-3 *	01/31/96	153.64	7.02	146.62	140	20	0.87	11	14	NA	NM	
MW-3 *	04/10/96	153.64	7.82	145.82	84	2.4	<0.5	1.9	1.1	NA	NM	
MW-3 *	07/16/96	153.64	6.80	146.84	<50	2.2	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	10/14/96	153.64	7.67	145.97	<50	1.2	<0.5	<0.5	0.81	2.9	NM	
MW-3 *	03/27/97	153.64	7.62	146.02	<50	0.94	<0.5	0.9	0.63	<2.5	NM	
MW-3 *	05/27/97	153.64	6.72	146.92	Not Sampled: Well Sampled Semiannually							
MW-3 *	08/12/97	153.64	8.20	145.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	11/17/97	153.64	7.64	146.00	Not Sampled: Well Sampled Semiannually						12.0	
MW-3 *	03/18/98	153.64	5.14	148.50	<50	<0.5	<0.5	<0.5	<0.5	<3	4.0	P
MW-3 *	05/12/98	153.64	5.53	148.11	Not Sampled: Well Sampled Semiannually							
MW-3 *	07/27/98	153.64	7.63	146.01	74	<0.5	<0.5	<0.5	<0.5	<3	1.7	NP
MW-3 *	10/15/98	153.64	7.46	146.18	Not Sampled: Well Sampled Semiannually							
MW-3 *	02/18/99	153.64	5.85	147.79	Not Sampled							
MW-3 *	05/24/99	153.64	7.00	146.64	<50	<0.5	<0.5	<0.5	<0.5	4	6.0	NP
MW-3 *	08/27/99	153.64	7.16	146.48	<50	<0.5	<0.5	<0.5	<0.5	<3	16.57	NP
MW-3 *	10/26/99	153.64	7.79	145.85	<50	<0.5	<0.5	<0.5	<1	<3	14.86	NP
MW-3 *	02/03/00	153.64	7.11	146.53	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-4	01/31/96	156.53	5.64	150.89	230	23	2.2	3.7	32	NA	NM	
MW-4	04/10/96	156.53	6.66	149.87	7,300	1,600	350	350	830	NA	NM	
MW-4	07/16/96	156.53	7.73	148.80	5,600	1,100	160	240	520	150	NM	
MW-4	10/14/96	156.53	8.55	147.98	4,500	860	72	160	340	<62	NM	
MW-4	03/27/97	156.53	7.15	149.38	25,000	5,200	760	850	2,600	<250	NM	
MW-4	05/27/97	156.53	7.75	148.78	Not Sampled: Well Sampled Semiannually							
MW-4	08/12/97	156.53	8.46	148.07	4,800	950	40	140	210	170	NM	
MW-4	11/17/97	156.53	8.24	148.29	Not Sampled: Well Sampled Semiannually							
MW-4	03/16/98	156.53	5.32	151.21	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P
MW-4	05/12/98	156.53	6.38	150.15	Not Sampled: Well Sampled Semiannually							
MW-4	07/27/98	156.53	7.36	149.17	21,000	6,100	390	810	1,600	<300	0.5	NP
MW-4 *	10/15/98	156.53	8.30	148.23	Not Sampled: Well Sampled Semiannually							
MW-4 *	02/18/99	156.53	4.39	152.14	Not Sampled							
MW-4 *	05/24/99	156.53	7.45	149.08	18,000	5,600	350	410	1,300	<300	1.0	NP
MW-4 *	08/27/99	156.53	8.07	148.46	12,000	3,200	170	490	810	65	1.32	NP
MW-4 *	10/26/99	156.53	8.72	147.81	12,000	3,100	130	450	680	12	1.39	NP
MW-4 *	02/03/00	156.53	7.41	149.12	9,300	2,800	96	330	400	73	1.0	NP
MW-5	01/31/96	151.33	8.64	142.69	<50	<0.5	<0.5	<0.5	<0.5	NA	NM	
MW-5	04/10/96	151.33	N/A	--	<50	<0.5	<0.5	<0.5	<0.5	NA	NM	
MW-5	07/16/96	151.33	8.15	143.18	<50	0.79	1.3	<0.5	<0.5	<2.5	NM	
MW-5	10/14/96	151.33	7.92	143.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5	03/27/97	151.33	7.75	143.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5	05/27/97	151.33	8.16	143.17	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5	08/12/97	151.33	---------- Well Inaccessible ----------									
MW-5	11/17/97	151.33	8.75	142.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.0	NP
MW-5	03/16/98	151.33	6.90	144.43	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-5	05/12/98	151.33	7.24	144.09	<50	<0.5	<0.5	<0.5	<0.5	<3	2.2	P
MW-5	07/27/98	151.33	7.91	143.42	<50	<0.5	<0.5	<0.5	<0.5	<3	1.3	P
MW-5	10/15/98	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	0.6	<3	3.0	P
MW-5	02/18/99	151.33	7.25	144.08	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	P
MW-5	05/24/99	151.33	7.52	143.81	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	NP
MW-5	08/27/99	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	<0.5	<3	2.28	P
MW-5	10/26/99	151.33	8.61	142.72	<50	<0.5	<0.5	<0.5	<1	<3	1.99	P
MW-5	02/03/00	151.33	10.09	141.24	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP
MW-6	01/31/96	153.84	5.15	148.69	Not Sampled: Well Sampled Annually							
MW-6	04/10/96	153.84	4.58	149.26	Not Sampled: Well Sampled Annually							
MW-6	07/16/96	153.84	4.96	148.88	<50	<0.5	<0.5	<0.5	<0.5	150	NM	
MW-6	10/14/96	153.84	6.15	147.69	Not Sampled: Well Sampled Annually							
MW-6	03/27/97	153.84	4.40	149.44	Not Sampled: Well Sampled Annually							
MW-6	05/27/97	153.84	4.90	148.94	Not Sampled: Well Sampled Annually							
MW-6	08/12/97	153.84	5.43	148.41	<50	<0.5	<0.5	<0.5	<0.5	39	NM	
MW-6	11/17/97	153.84	5.87	147.97	Not Sampled: Well Sampled Annually							
MW-6	03/16/98	153.84	4.52	149.32	Not Sampled: Well Sampled Annually							
MW-6	05/12/98	153.84	4.42	149.42	Not Sampled: Well Sampled Annually							
MW-6	07/27/98	153.84	4.75	149.09	<50	<0.5	<0.5	<0.5	<0.5	18	0.9	P
MW-6	10/15/98	153.84	5.75	148.09	Not Sampled: Well Sampled Annually							
MW-6	02/18/99	153.84	3.93	149.91	Not Sampled: Well Sampled Annually							
MW-6	05/24/99	153.84	4.32	149.52	<50	<0.5	<0.5	<0.5	<0.5	6	2.0	NP
MW-6	08/27/99	153.84	5.72	148.12	<50	<0.5	<0.5	<0.5	<0.5	8	1.02	NP
MW-6	10/26/99	153.84	5.94	147.90	Not Sampled: Well Sampled Annually						2.51	
MW-6	02/03/00	153.84	5.44	148.40	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)

MSL = Mean sea level.
TOC = Top of casing.
TPPH = Total purgeable petroleum hydrocarbons by modified EPA method 8015.
BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/26/99).
MTBE = Methyl tert -Butyl Ether by EPA method 8021B (EPA method 8020 prior to 10/26/99).
ppb = Parts per billion.
ppm = Parts per million.
< = Less than laboratory detection limit stated to the right.
NA = Not analyzed.
NM = Not measured.
N/A = Not available.
* = ORCs installed in well MW-3 beginning 11/14/95 and in well MW-4 beginning 09/29/98. Please refer to Appendix D for details.

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

			Field Analyses					Laboratory Analyses									
Well	Date Sampled		Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)
MW-3	11/14/95	**	65.5*	6.76*	508*	7.17	N/A	NS	NS	NS	NS	NS	6.6	<1.0	NS	140	46
MW-3	06/06/96	**	66.2	7.38	700	12.28	N/A	NS	NS	NS	NS	NS	NS	NS	NS	84†	5.4†
MW-3	07/16/96		67.8	7.08	1,010	8.73	0.0	280	1.8	270	44	<0.020	<1.0	NS	78	<50	2.2
MW-3	01/21/97	**	59	N/A	N/A	11.15	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	08/12/97	**	74.4	6.65	600	6.7	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	11/17/97		N/A	N/A	N/A	12.0	0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	03/16/98		68.5	7.75	806	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	05/12/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	07/27/98		68.1	6.81	904	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	74	ND
MW-3	09/29/98	**	ORC installed														
MW-3	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	05/24/99		66.2	7.24	799	6.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	07/26/99	**	ORC installed														
MW-3	08/27/99		69.0	7.97	782	16.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	10/26/99		66.5	5.93	794	14.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	02/03/00		62.0	7.42	7,877	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-4	07/16/96		69.5	6.72	1,370	3.20	4.20	420	NS	470	NS	0.11	<1.0	NS	18	5,600	2,020
MW-4	03/16/98		66.2	6.89	1,411	1.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-4	05/12/98		NM	NM	NM	NM	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	07/27/98		70.5	6.34	1,434	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21,000	8,900
MW-4	09/29/98	**	ORC installed														
MW-4	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	05/24/99		67.6	6.72	1,509	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18,000	7,660
MW-4	07/26/99	**	ORC installed														

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

		Field Analyses					Laboratory Analyses									
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)
MW-4	08/27/99	70.5	7.09	1,469	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,670
MW-4	10/26/99	66.8	7.05	1,565	1.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,360
MW-4	02/03/00	64.1	7.27	1,506	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,300	3,626
MW-5	07/16/96	70.4	6.85	690	6.80	0.0	170	NS	180	NS	<0.020	<1.0	NS	35	<50	1.1
MW-5	03/16/98	69.5	7.19	584	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/12/98	65.9	7.04	619	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	07/27/98	73.6	7.39	569	1.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/15/98	65.8	6.88	626	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	0.6
MW-5	02/18/99	63.4	6.98	616	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/24/99	66.7	6.70	591	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	08/27/99	72.6	7.10	624	2.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/26/99	70.4	5.95	601	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	02/03/00	62.1	7.31	6,072	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	06/06/96	N/A	N/A	N/A	3.47	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	03/16/98	N/A	N/A	N/A	N/A	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/12/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	07/27/98	70.3	6.67	638	0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/15/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/18/99	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/24/99	65.5	6.62	713	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	08/27/99	73.0	7.12	589	1.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/26/99	NM	NM	NM	2.51	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/03/00	61.7	7.32	5,091	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

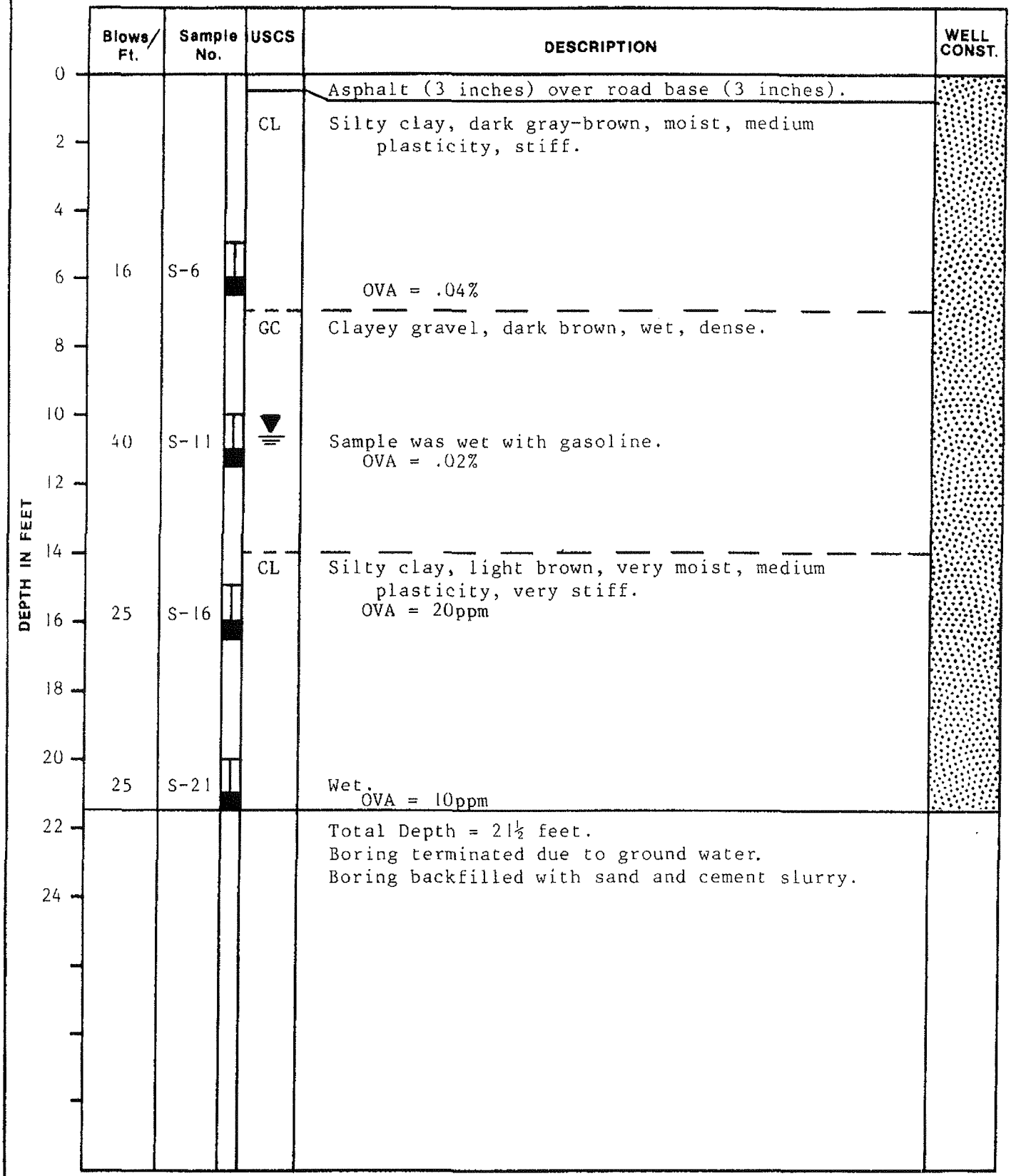
		Field Analyses					Laboratory Analyses									
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)

D.O. = Dissolved oxygen
B.O.D = Biochemical oxygen demand
C.O.D = Chemical oxygen demand
TPPH = Total purgeable petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, and xylenes
deg F = Degrees Fahrenheit
µmhos = Micromhos
mg/L = Milligrams per liter

µg/L = Micrograms per liter
NM = not measured
NS = Not sampled
ND = Not detected
N/A = Not available
* Field measurements collected on November 2, 1995.
** ORC installed
† From April 10, 1996 groundwater monitoring event.

ATTACHMENT C

Soil Boring Logs and Well Construction Details



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PROJECT NO. 18039-1

LOG OF BORING B - 1

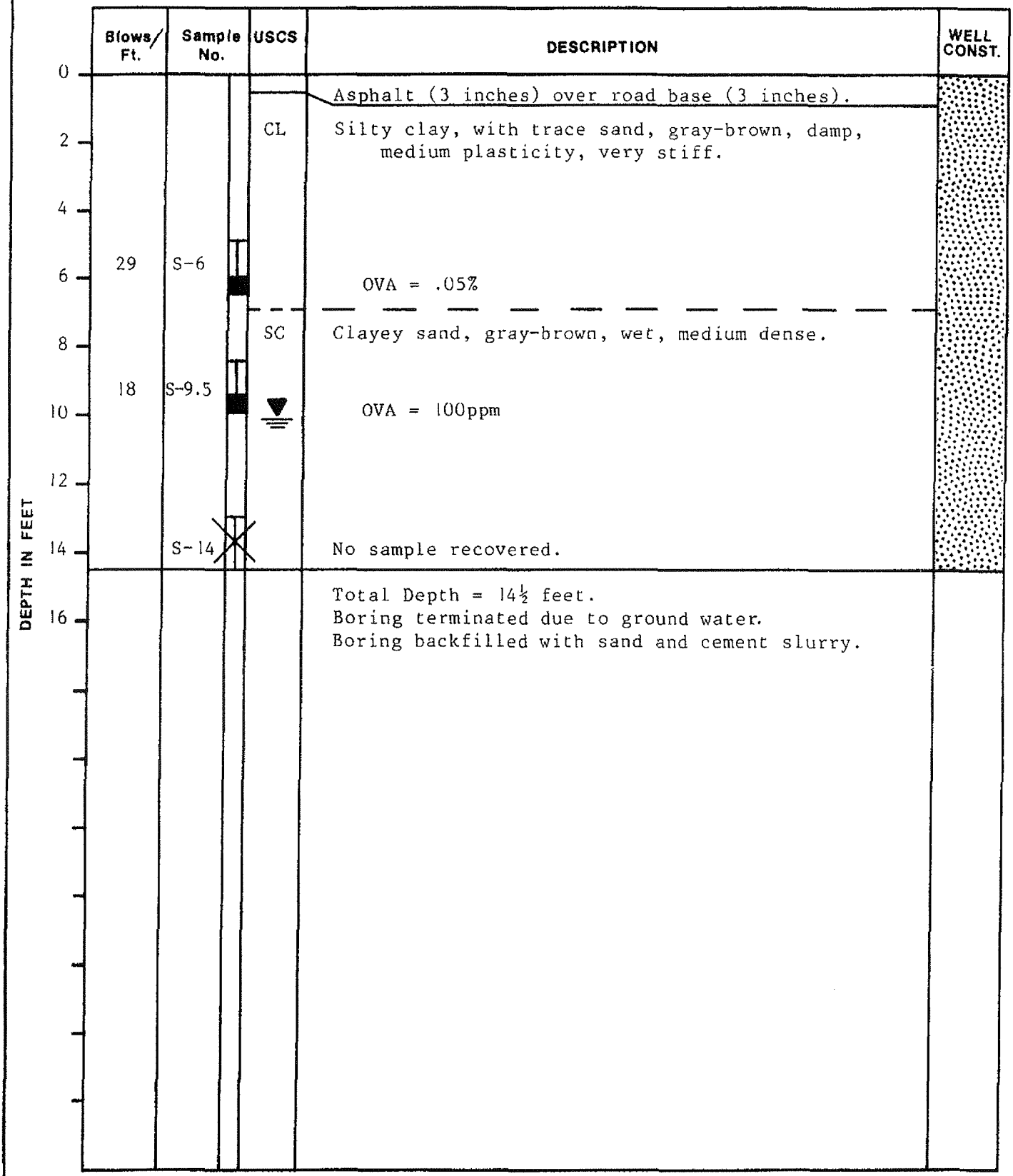
ARCO Station No. 374

Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-4



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LOG OF BORING B - 2

ARCO Station No. 374

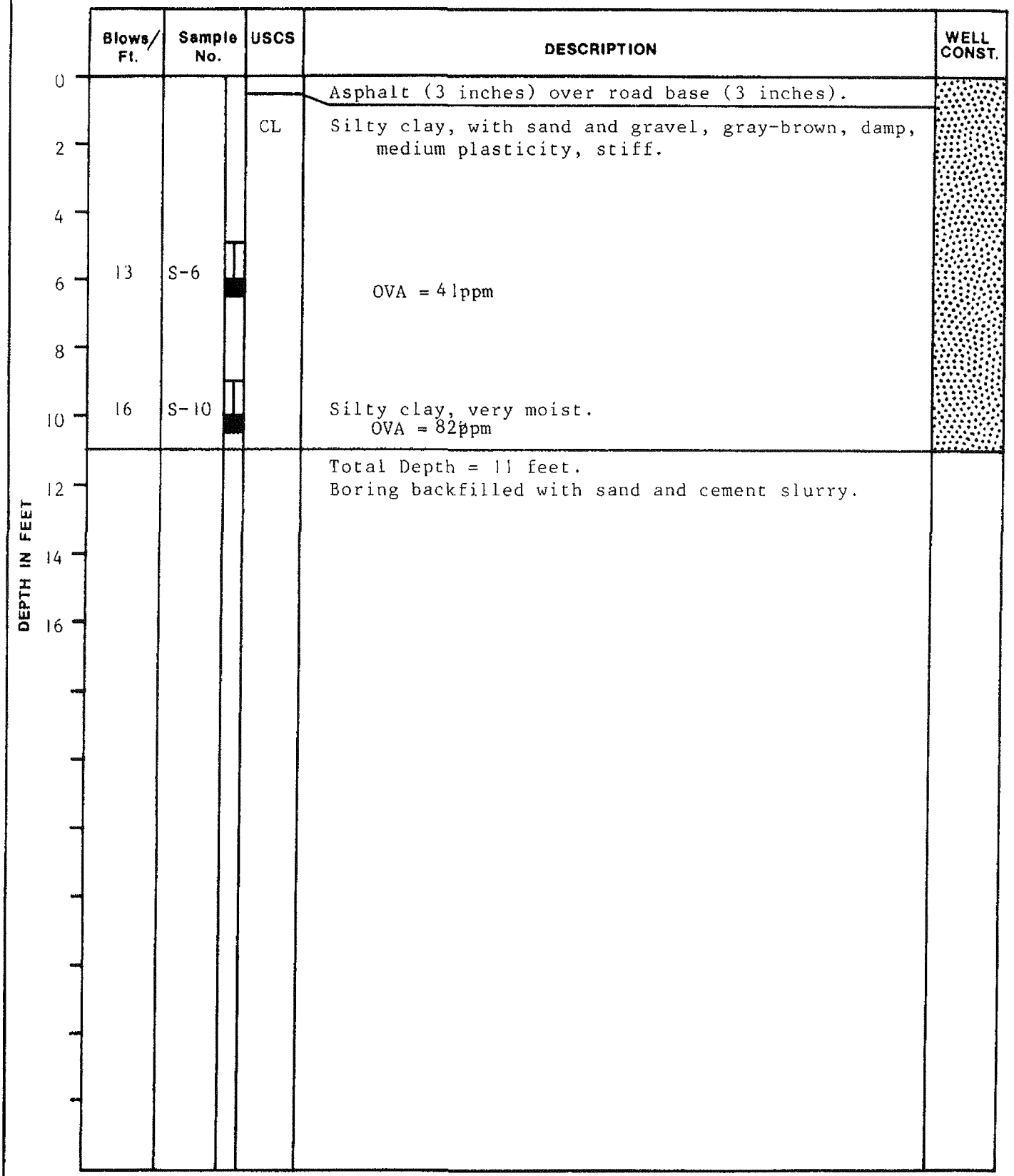
Telegraph and Alcatraz Avenues

Oakland, California

PLATE

P-5

PROJECT NO. 18039-1



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LOG OF BORING B - 3

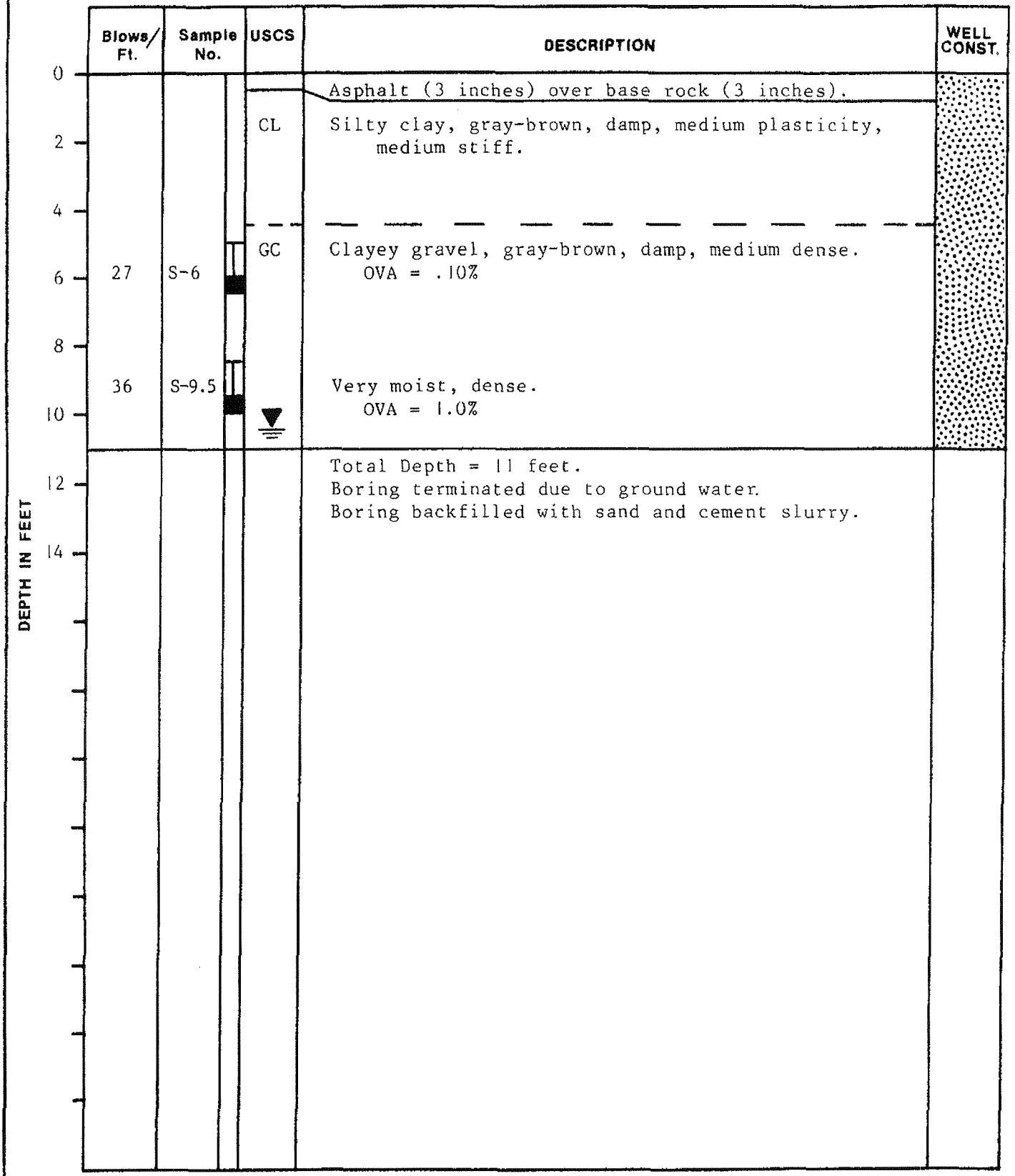
ARCO Station No. 374

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.
22				CL	Silty clay, some sand and gravel, light brown, moist, medium plasticity, stiff.	
	S-23	3 4 7	0		Trace gravel.	
24						
26						
28	S-27	3 5 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)

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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						

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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.	
	S-3.5	10 10	0			
4						
6						
8		2 4				
	S-8.5	8	0		Damp.	
10						
12		4 6				
	S-13.5	10	8.5		Some mottling, moist.	
14						
16						
		6 5				
18	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 6			Color change to light brown at 3-1/2 feet. (Water level - 4/9/92)	
6	S-5.5	9	0	CL	Sandy clay with silt, light brown, moist, low plasticity, stiff; some organic fragments and root holes.	
8		11 18		GP	Sandy gravel with some silt, light brown, wet, dense.	
10	S-10	25 4	0			
12		8 16	0			
14		6 12				
	S-15	18 11	0			
16		25 32	0	CL	Silty clay with gravel, light brown, very moist, medium plasticity, hard.	
					Total depth = 17 feet.	
18						
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			
S	B-13 6.5'	N/A	1130	100	7	SC	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

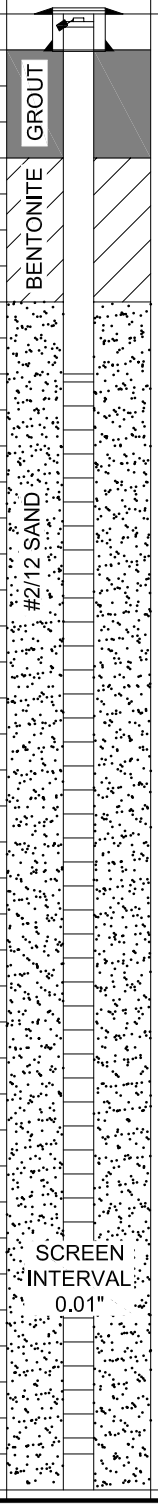
PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

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

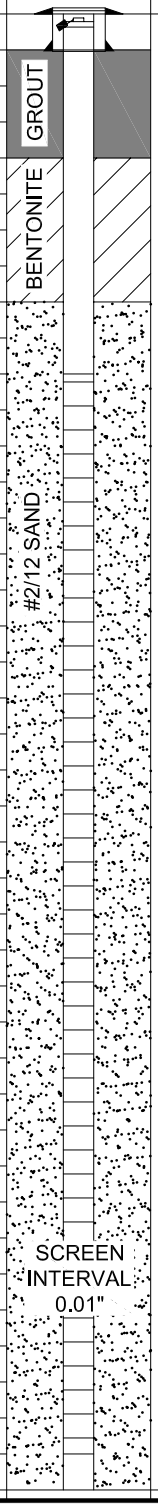
PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

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
MONITOR WELL CONSTRUCTION DIAMETER: 4"								
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								
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	MW-8-18.5	0.0 ppm	Moist		Stiff	Silty Clay with fine to coarse grained sand	CL	
19								
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

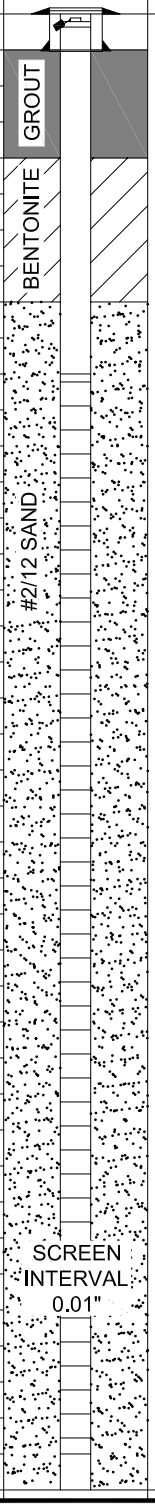
PROJECT NAME: BP/ARCO 374 | SITE ADDRESS: 6407 Telegraph Ave., Oakland, CA

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)	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
1–2			Moist	Gray to Dk. Gray		Silty clay	CL	
3	MW-9-3	24.9 ppm						
4								
5	MW-9-5	13.5 ppm				Silty clay		
6	MW-9-6	75.0 ppm				Silty clay with sand and gravel		
7			▼					
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	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'

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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: 0745 | DRILLING COMPANY: Gregg | DRILLER: Jason

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

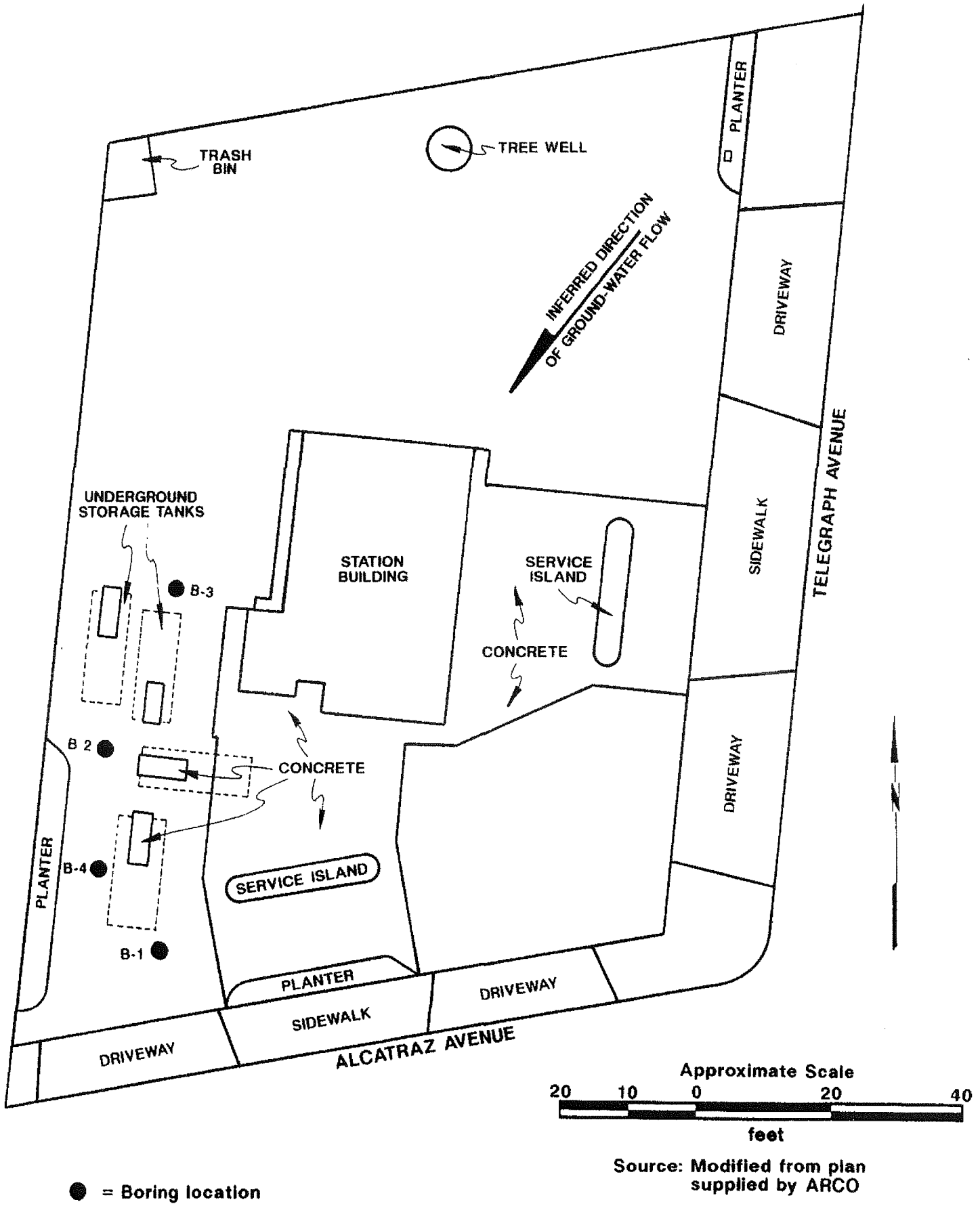
DEPTH (FEET)	SOIL BORING	SAMPLE ID	PID	MOISTURE	COLOR	CONSISTENCY	GRAIN SIZE	CLASSIFICATION	REMARKS & ODORS
1	GROUT			Moist	Gray to Dk. Gray	Stiff	Silty clay with sand	CL	
2									
3		B-19-3	12.8 ppm						
4									
5		B-19-5	7.0 ppm				Silty clay or clayey silt with some and gravel		
6		B-19-6	17.5 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'

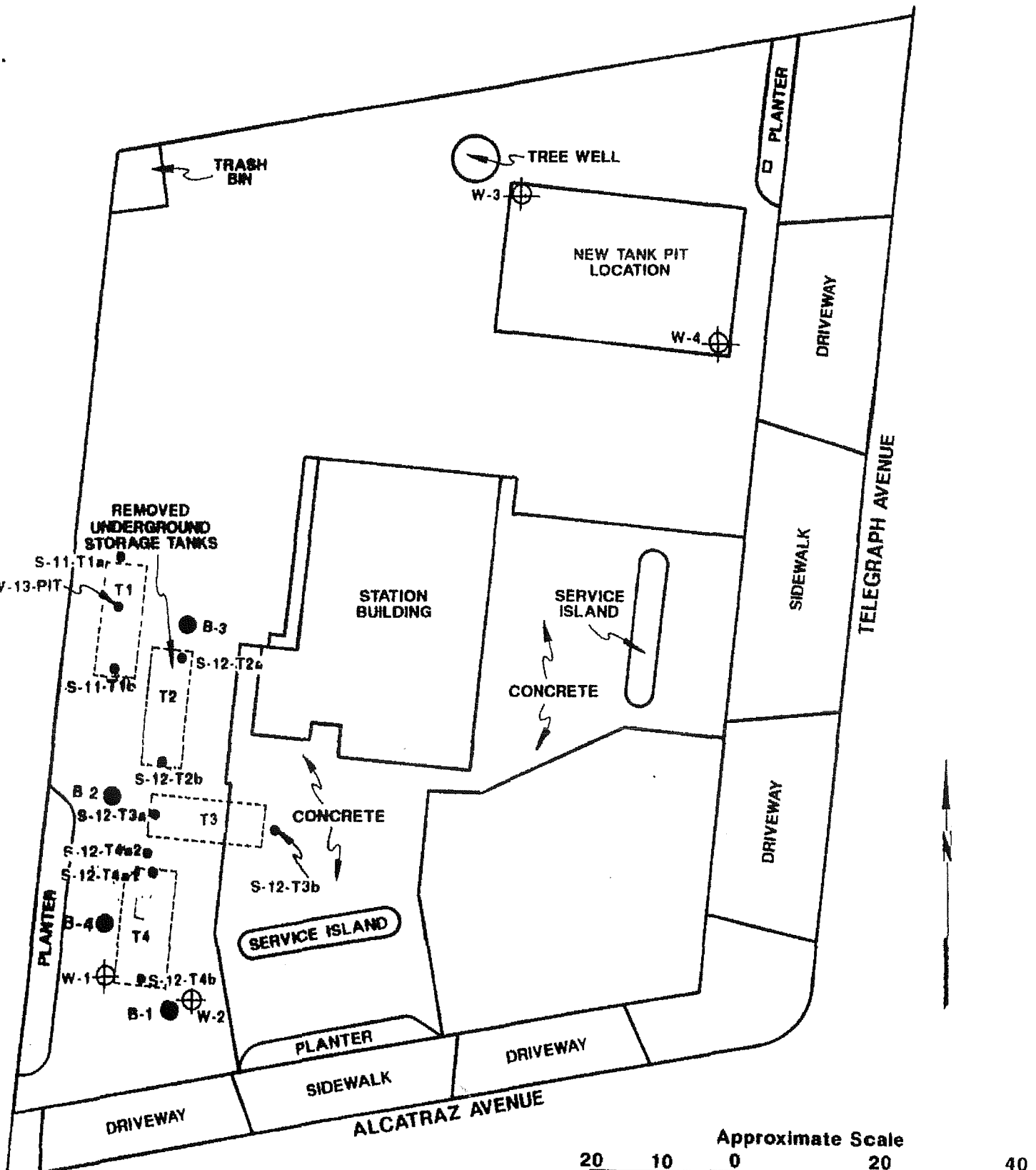
\\reno\public\CAD\templates\LITHLOG.DWG

ATTACHMENT D

Historical Soil Analytical Data



Applied GeoSystems 4125 Mission Blvd. Suite B Fremont, CA 94539 (415) 651-1906 PROJECT NO. 18039-1	GENERALIZED SITE PLAN ARCO Station No. 374 Telegraph and Alcatraz Avenues Oakland, California	PLATE P - 2

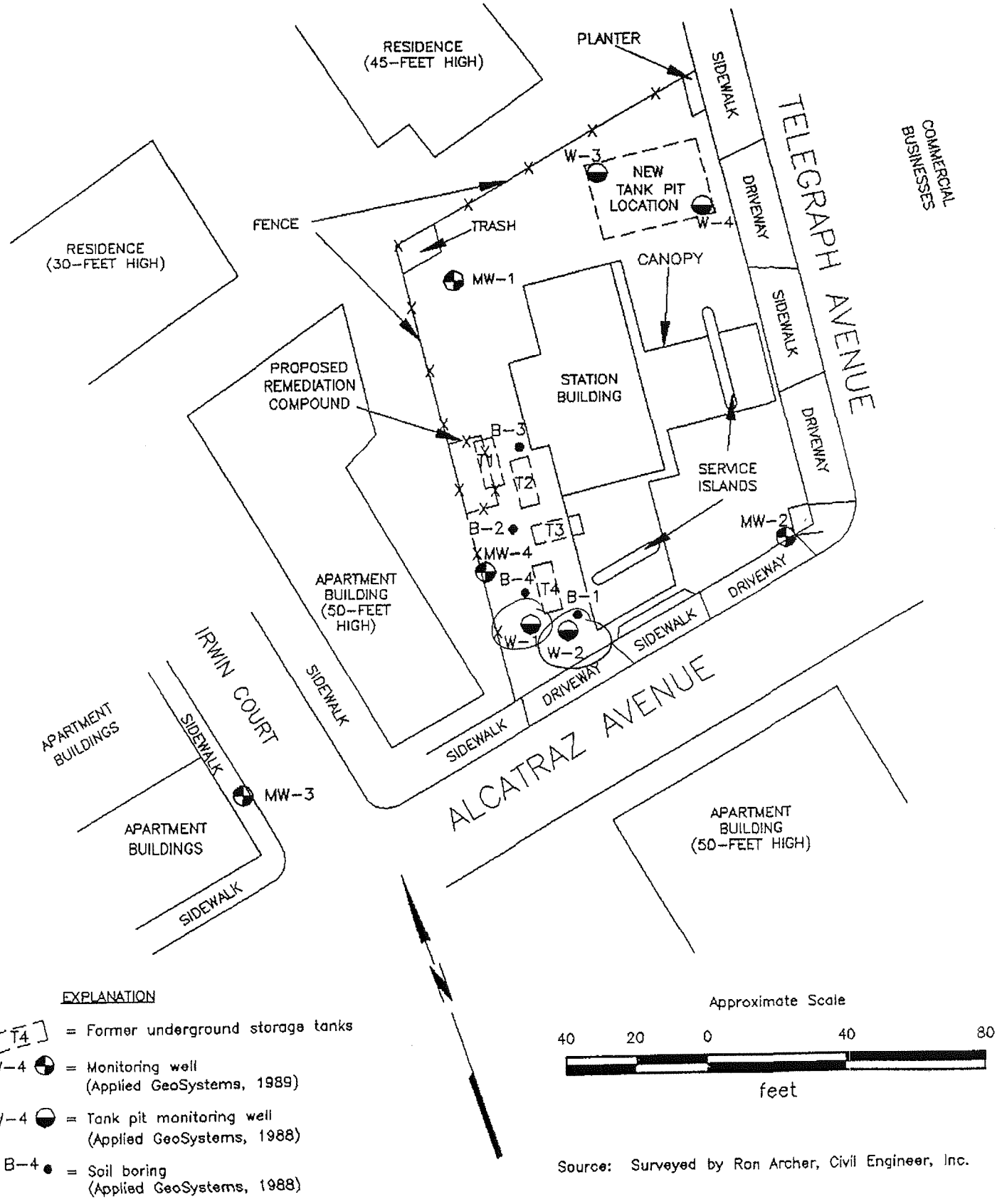


Applied GeoSystems

PROJECT NO. 18039-2

GENERALIZED SITE PLAN
ARCO Station No. 374
Telegraph and Alcatraz Avenues
Oakland, California

PLATE
P - 2



EXPLANATION

[T4] = Former underground storage tanks

MW-4 = Monitoring well (Applied GeoSystems, 1989)

W-4 = Tank pit monitoring well (Applied GeoSystems, 1988)

B-4 = Soil boring (Applied GeoSystems, 1988)

Approximate Scale

40 20 0 40 80

feet

Source: Surveyed by Ron Archer, Civil Engineer, Inc.

RESNA	GENERALIZED SITE PLAN AND AREA MAP ARCO Station 374 6407 Telegraph Avenue Oakland, California	PLATE 2
PROJECT 60025.08		

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.

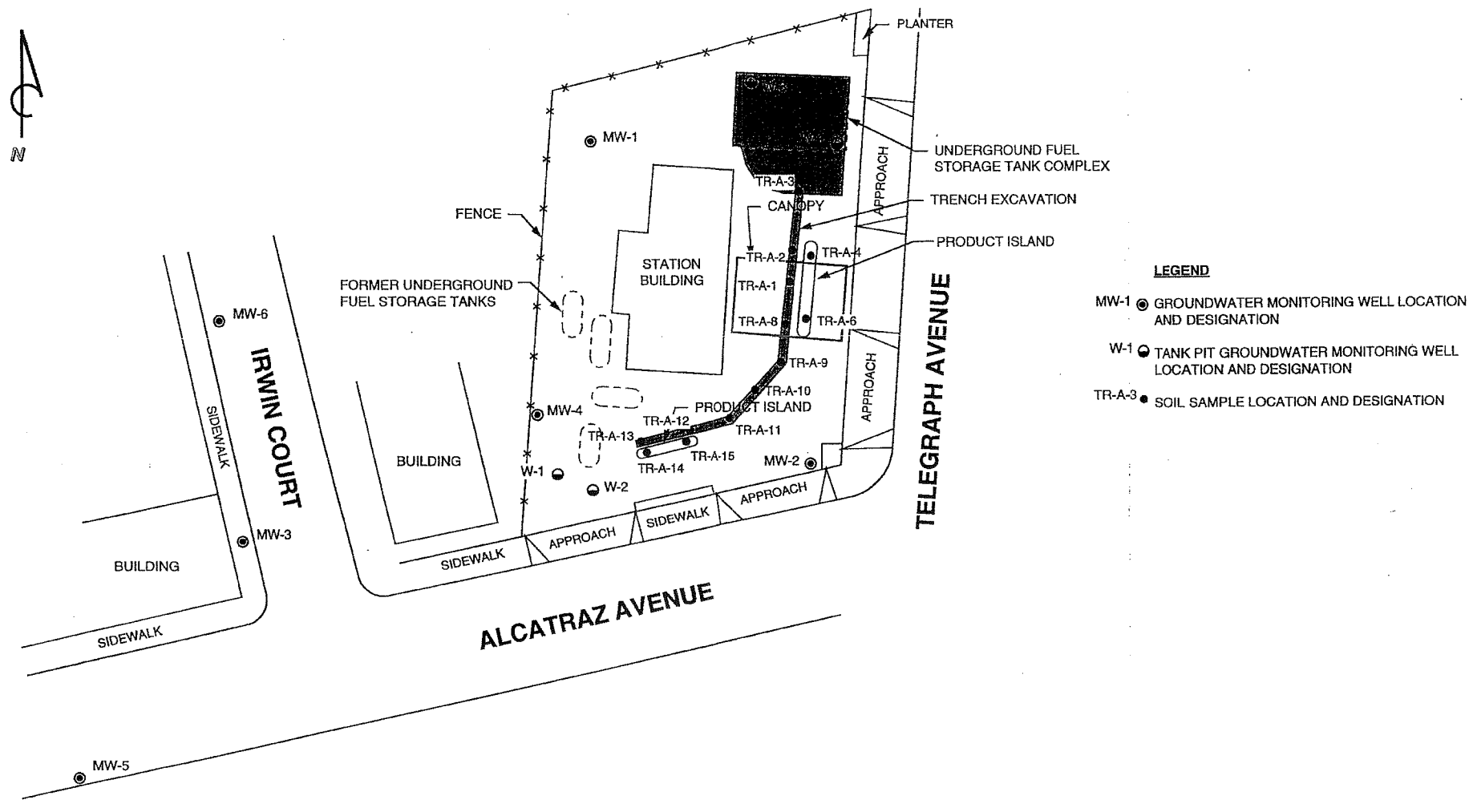
TABLE 1
CUMULATIVE RESULTS OF LABORATORY ANALYSES
OF SOIL SAMPLES
ARCO Station 374
6407 Telegraph Avenue
Oakland, California
(Page 2 of 2)

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



PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 30 60 FEET

ARCO SERVICE STATION 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

SITE MAP

FIGURE:
2
PROJECT:
330-084.1B

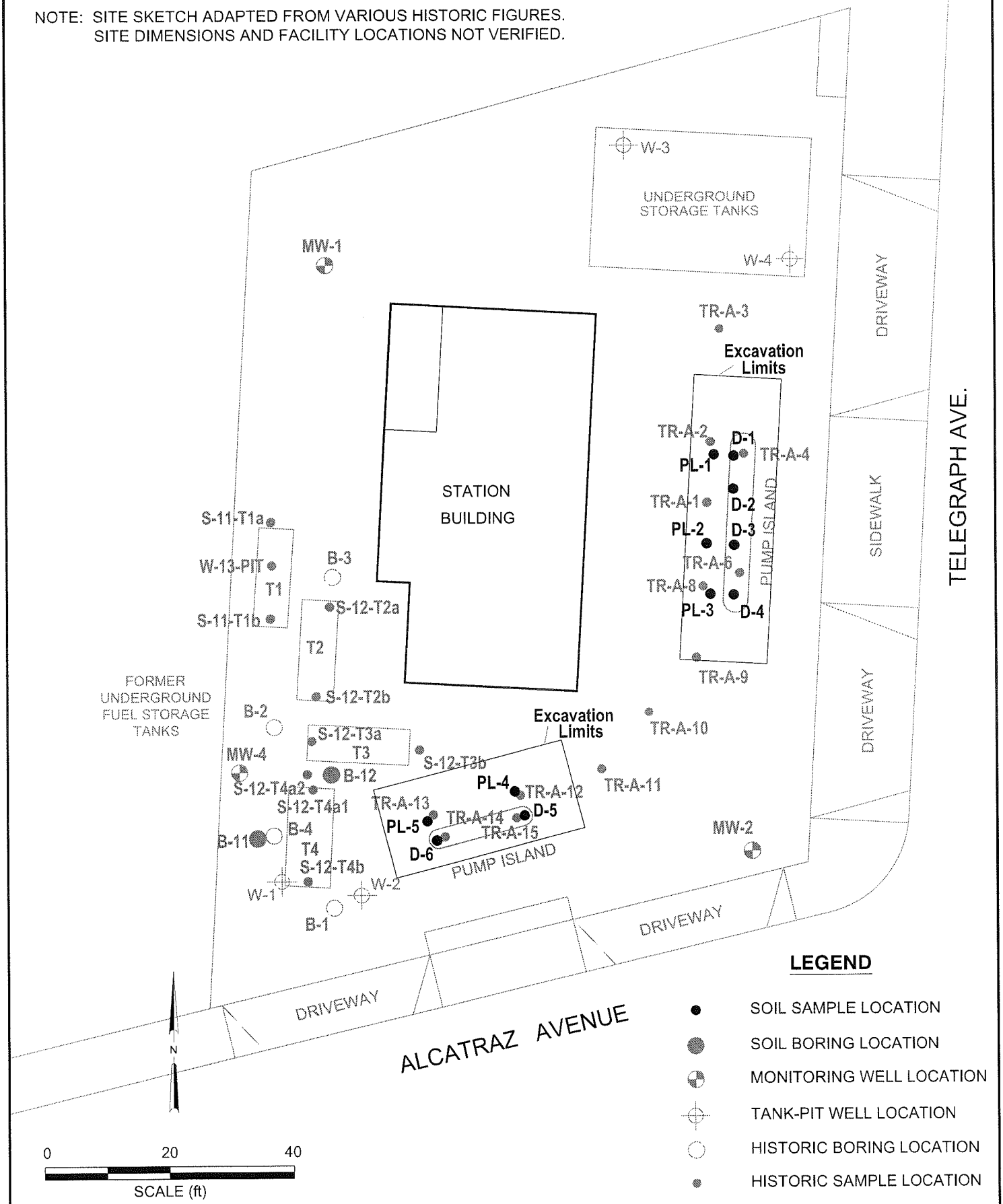
Table 1
Soil Analytical Data
Product Line and Dispenser Excavation
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and Total Lead)

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.

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



LEGEND

- SOIL SAMPLE LOCATION
- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- TANK-PIT WELL LOCATION
- HISTORIC BORING LOCATION
- HISTORIC SAMPLE LOCATION

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California
Project No.: 06-08-602 Date: 1/29/09

Station #374
6407 Telegraph Ave.
Oakland, California

Site Layout Plan with
Soil Sample Locations

Drawing
2

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

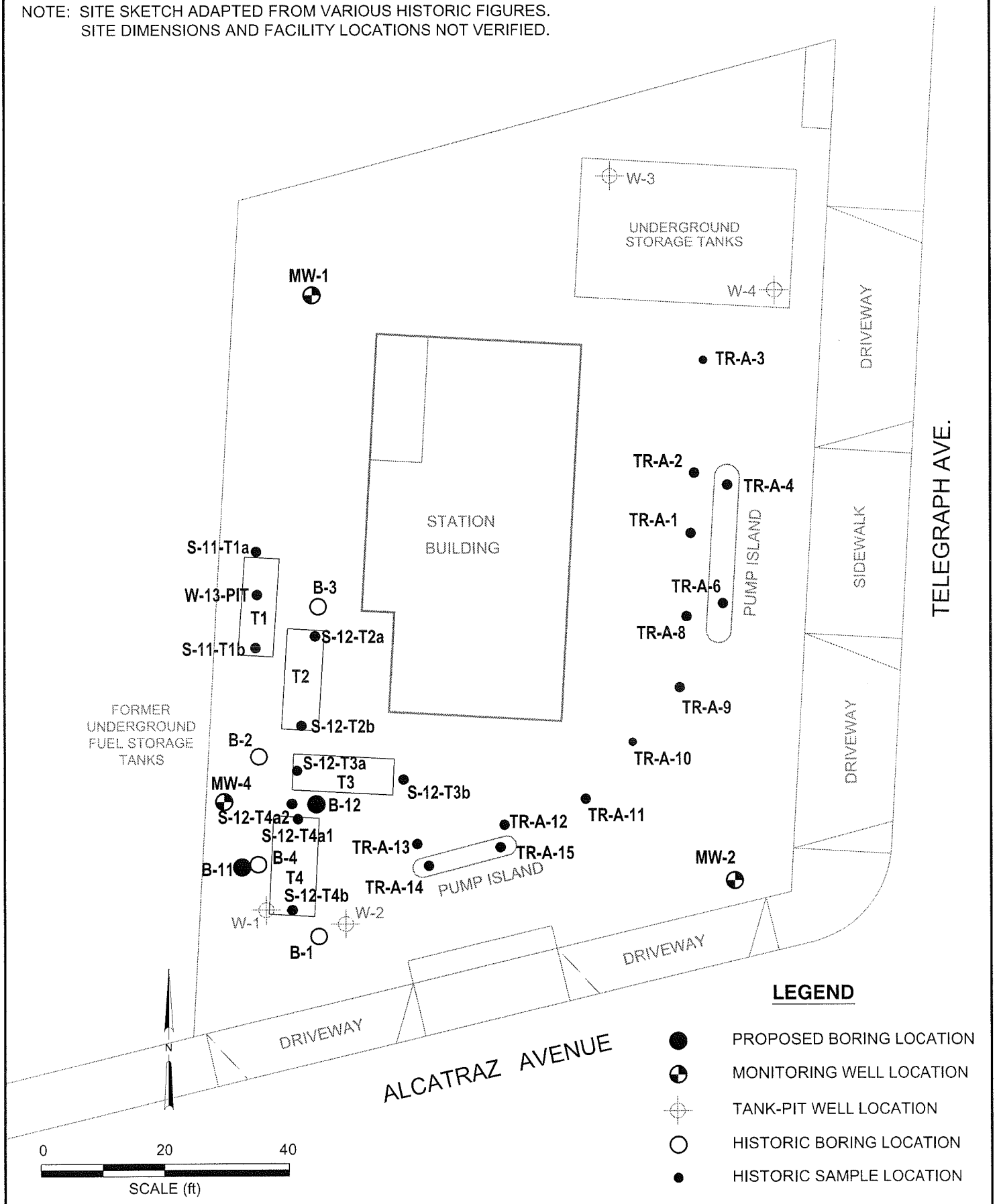
ETBE = Ethyl Tert-Butyl Ether

TAME = Tert-Amyl Methyl Ether

1,2-DCA = 1,2-Dichloroethane

EDB = 1,2-Dibromoethane

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



LEGEND

- PROPOSED BORING LOCATION
- MONITORING WELL LOCATION
- TANK-PIT WELL LOCATION
- HISTORIC BORING LOCATION
- HISTORIC SAMPLE LOCATION

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

Station #374
6407 Telegraph Ave.
Oakland, California

Site Sketch With Historic and Proposed Sample Locations

Drawing
2

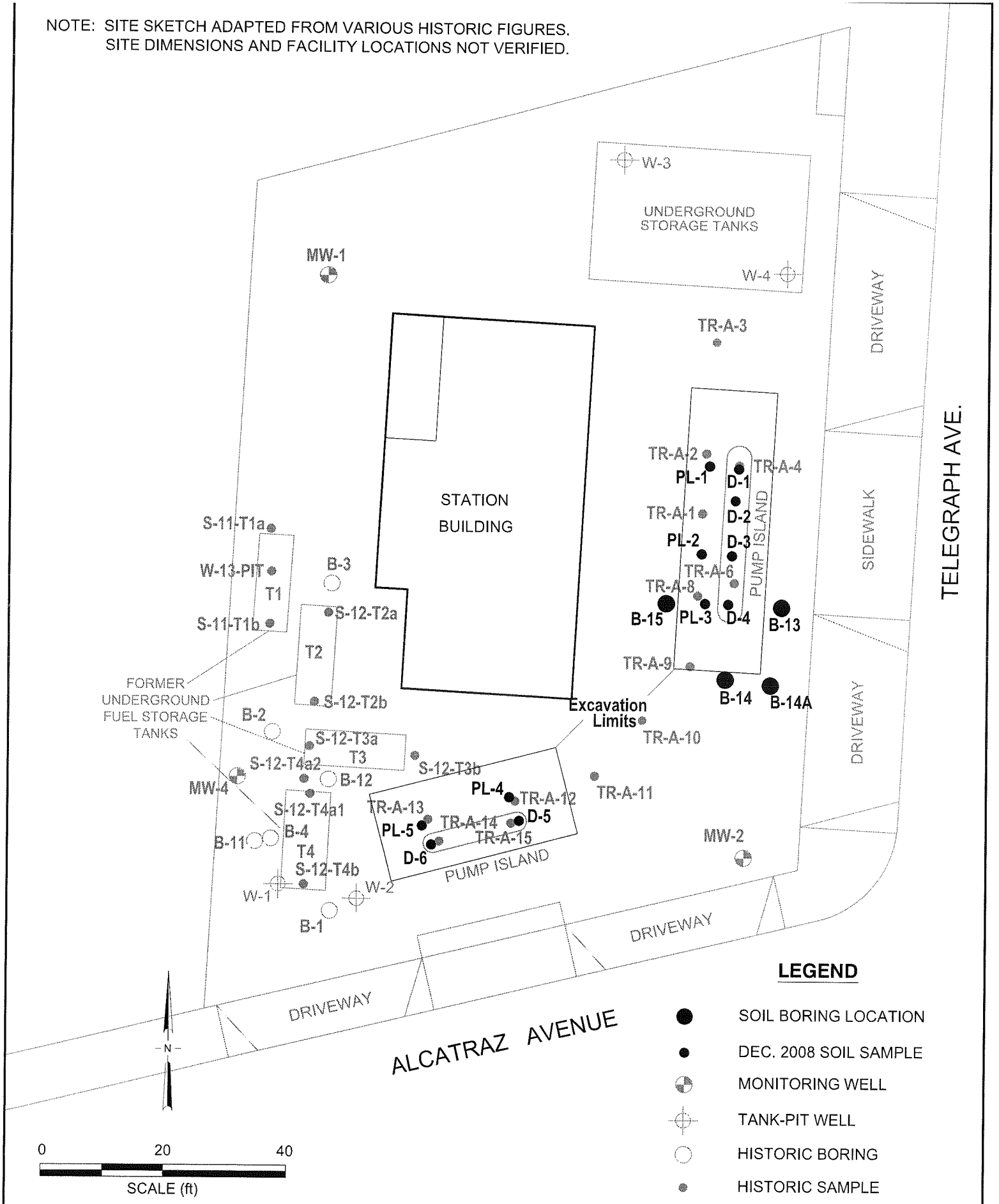
Laboratory Analytical Results from On-Site Soil Investigation, 13 November 2008
Atlantic Richfield Company Service Station #374, 6407 Telegraph Avenue, Oakland, California
ACEH Case #RO0000078

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

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



LEGEND

- SOIL BORING LOCATION
- DEC. 2008 SOIL SAMPLE
- MONITORING WELL
- TANK-PIT WELL
- HISTORIC BORING
- HISTORIC SAMPLE

BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, California Project No.: 06-08-602 Date: 5/19/09	Station #374 6407 Telegraph Ave. Oakland, California	Site Layout Plan with Soil Boring Locations

Drawing 2

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

MW-7			
	G	B	M
3'	<0.50	<0.0010	<0.0010
5'	<0.50	<0.0010	0.0017
6'	<0.50	0.0053	0.0023
8'	650	0.0047	<0.0010
9.5'	<0.50	<0.0010	<0.0010
11'	<0.50	<0.0010	<0.0010
12.5'	<0.50	<0.0010	0.0017
14'	1.2	<0.0010	0.0080

MW-9			
	G	B	M
3'	5.2	0.0069	0.046
5'	1.4	0.0024	0.031
6'	3.5	0.025	0.033
8'	710	1.2	<0.20
11'	54	<0.10	<0.10
12.5'	46	<0.0010	<0.0010
14'	9.3	0.0012	<0.0010
15.5'	<0.50	<0.0010	0.031

MW-8			
	G	B	M
3'	2.6	0.0099	0.011
5'	1.7	0.057	0.0075
6'	3.2	0.23	<0.10
8'	510	2.7	0.13
9.5'	900	1.2	<0.10
11'	1,400	<0.10	<0.10
12.5'	0.93	0.0041	0.0014
14.5'	0.57	0.022	0.036

B-19			
	G	B	M
3'	2..7	<0.0010	<0.0010
5'	2.6	<0.0010	<0.0010
6'	<0.50	0.0053	0.0032
8'	190	0.84	0.015
9.5'	250	0.19	0.011
11'	18	<0.10	<0.10
12.5'	47	0.018	0.0013
14'	<0.50	<0.0010	<0.0010
15.5'	<0.50	<0.0010	0.0034

N

0 20 40

SCALE (ft)

LEGEND

- Monitor Well Location
- Tank Pit Monitor Well Location
- Soil Boring Location

Depth (feet)

WELL			
	G	B	M
D'	<0.50	<0.0010	<0.0010

Well Designation, GRO, Benzene and MTBE Concentrations (mg/Kg)

NOTE: SITE MAP ADAPTED FROM STANTEC FIGURES.
SITE DIMESIONS AND FACILITY LOCATIONS NOT VERIFIED.

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926

Project No.: 06-88-602 Date: 12/30/2010

Station #374
6407 Telegraph Ave.
Oakland, California

Soil Analytical Results
November 22 to 24, 2010

Drawing
3

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	

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

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			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).

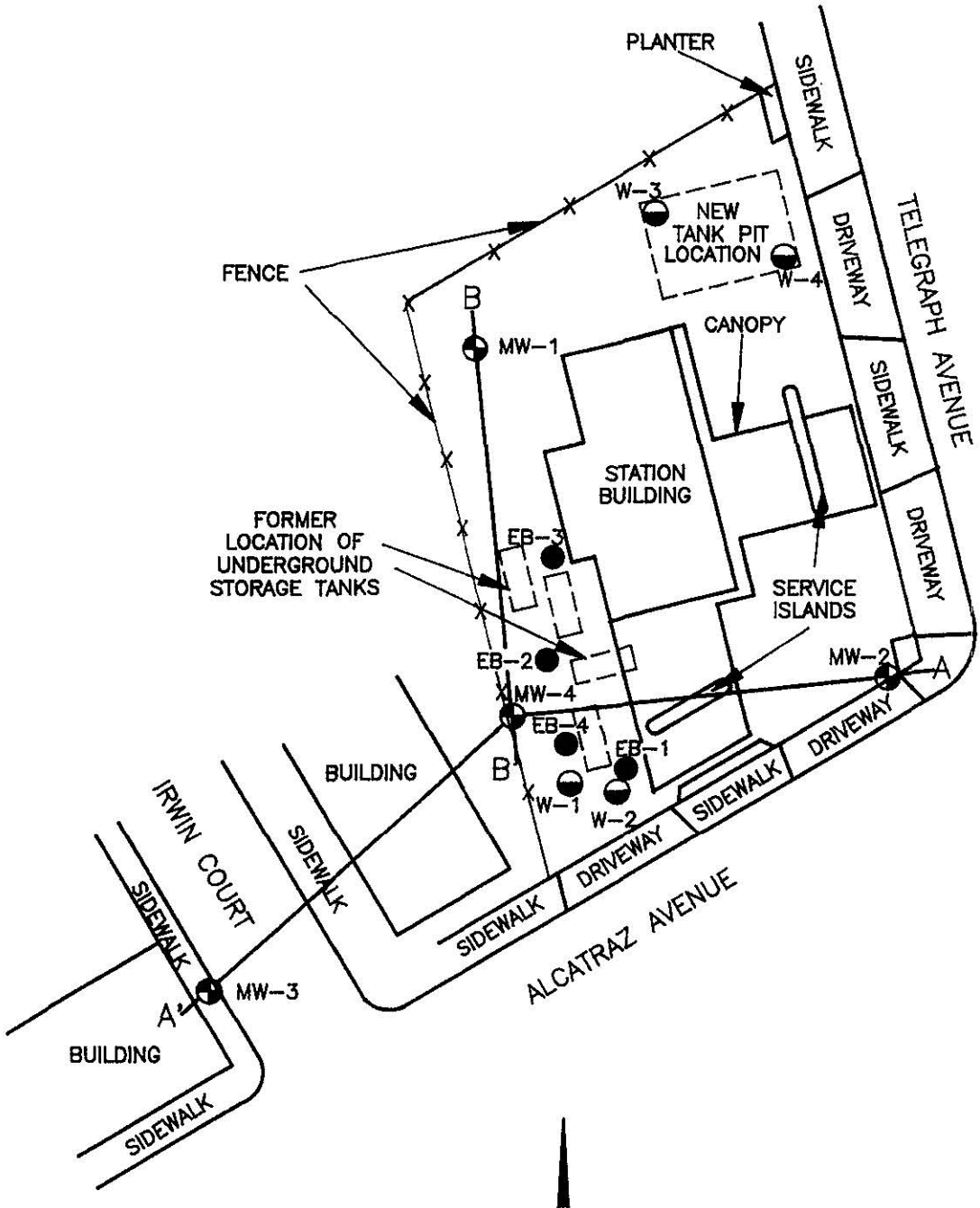
NE = ESL not established

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.

ATTACHMENT E

Cross-Sections



B — B' = Cross section line

MW-4 = Ground-water monitoring well

W-4 = Tank pit monitoring well

EB-4 = Exploratory soil boring

N

Approximate Scale

40 20 0 40 80

feet

Source: Surveyed by Ron Archer
Civil Engineer, Inc.

Applied GeoSystems

PROJECT NO. 18039-3

GENERALIZED SITE PLAN
ARCO Station No. 374
6407 Telegraph Avenue
Oakland, California

PLATE
2

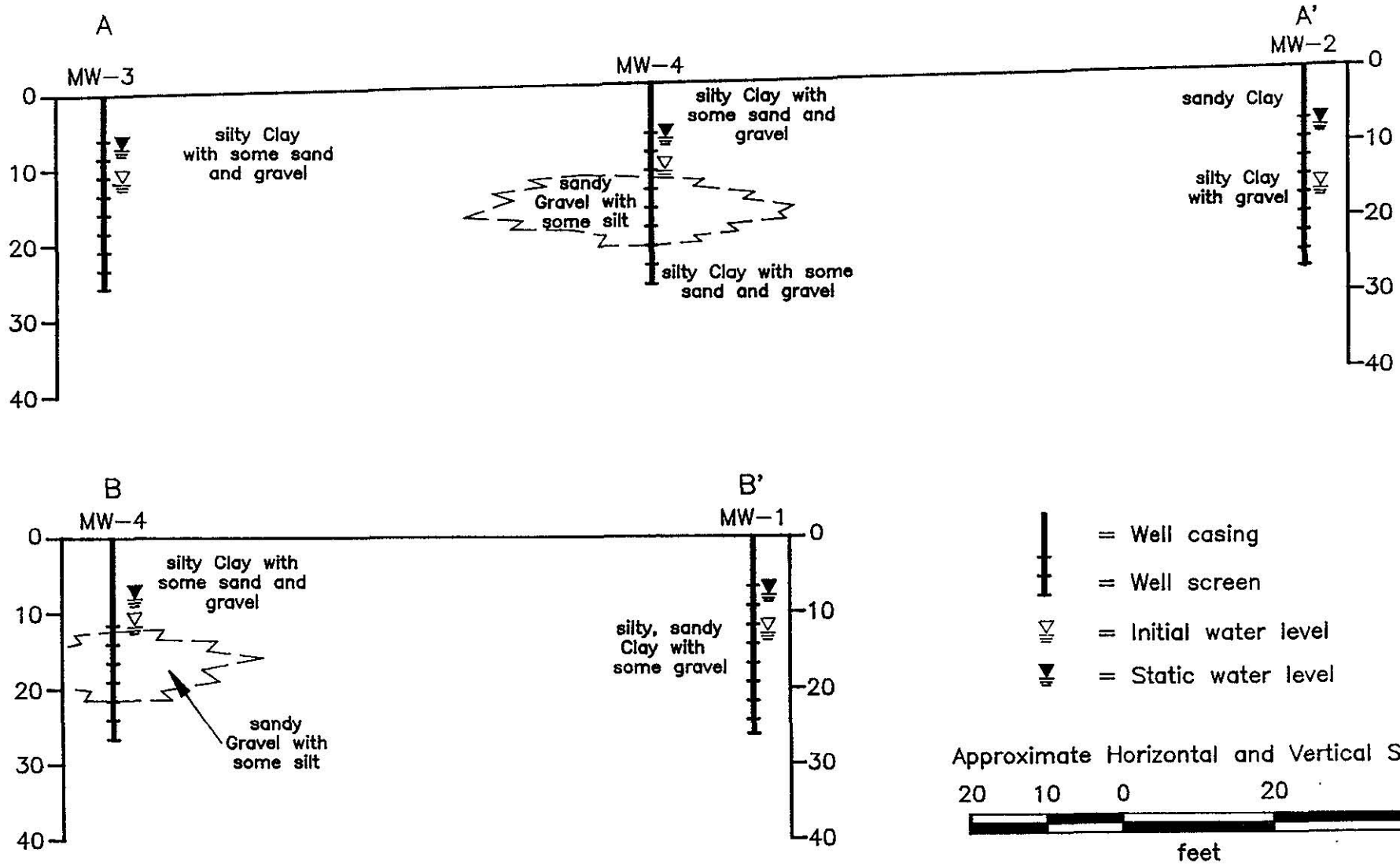


PLATE 12	GEOLOGIC CROSS SECTIONS ARCO Station No. 374 6407 Telegraph Avenue Oakland, California	Applied GeoSystems PROJECT NO. 18039-3

ATTACHMENT F

Groundwater Extraction Performance Data

Table 5
Groundwater Extraction System Performance Data

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

Sample I.D.	Date Sampled		Totalizer Reading (gallons)	Net Volume (gallons)	Average Flow Rate (gpm)	TPPH Influent Concentration (µg/L)	TPPH Net Removed (lbs)	TPPH Removed to Date (lbs)	Benzene Influent Concentration (µg/L)	Benzene Net Removed (lbs)	Benzene Removed to Date (lbs)	Primary Carbon Loading (percent)
INFL	12/21/93	a	22	22	0.21	NS	0.000	0.00	NS	0.000	0.00	0.0
INFL	12/23/93	a	4,855	4,833	1.6	9,300	0.380	0.38	1,200	0.024	0.02	0.5
INFL	12/27/93	a	6,871	2,016	0.36	5,700	0.130	0.51	820	0.017	0.04	0.6
INFL	12/29/93	a	7,192	321	0.13	5,800	0.016	0.53	950	0.002	0.04	0.7
INFL	01/03/94	a	7,925	733	0.10	6,500	0.010	0.54	860	0.006	0.05	0.7
INFL	01/05/94	a	8,162	237	0.08	5,200	0.010	0.55	970	0.002	0.05	0.7
INFL	01/11/94	a	8,907	745	0.08	6,300	0.030	0.58	900	0.006	0.06	0.7
INFL	01/13/94	a	9,175	268	0.09	8,600	0.019	0.60	950	0.002	0.06	0.7
INFL	01/24/94	a	9,306	131	0.08	NS	0.007	0.60	NS	0.001	0.06	0.8
INFL	02/24/94	a	14,555	5,249	0.21	4,200	0.280	0.88	520	0.011	0.07	1.1
INFL	03/24/94	a	23,723	9,168	0.24	6,200	0.400	1.40	1,100	0.062	0.13	1.8
INFL	04/26/94	b	29,543	5,820	0.12	6,400	0.150	1.55	1,400	0.061	0.19	1.9
INFL	05/24/94	c	35,082	5,539	0.14	NS	0.196	1.75	NS	0.043	0.24	2.2
INFL	11/17/94	d,e	35,507	425	N/A	2,100	0.004	1.75	460	0.001	0.24	2.2
INFL	01/10/95	f	36,493	986	0.01	1,100	0.013	1.76	180	0.003	0.24	2.2
INFL	02/07/95	g	41,399	4,906	0.12	3,500	0.094	1.86	370	0.011	0.25	2.3
INFL	03/03/95	h	53,290	11,891	0.34	NS	0.220	2.08	NS	0.035	0.29	2.6
INFL	04/03/95		62,582	9,292	0.21	5,000	0.194	2.27	1,000	0.039	0.32	2.8
INFL	05/01/95		69,809	7,227	0.18	580	0.168	2.44	40	0.031	0.36	3.0
INFL	06/09/95		75,254	5,445	0.10	1,400	0.045	2.48	420	0.010	0.37	3.1
INFL	07/05/95		81,540	6,286	0.17	750	0.056	2.54	41	0.012	0.38	3.2
INFL	08/10/95		86,868	5,328	0.10	610	0.030	2.57	29	0.002	0.38	3.2
INFL	09/18/95		91,532	4,664	0.08	600	0.024	2.59	10	0.001	0.38	3.2
INFL	10/02/95		92,918	1,386	0.07	790	0.008	2.60	52	0.000	0.38	3.3
INFL	10/13/95	l,h	93,989	1,071	0.07	NS	0.006	2.61	NS	0.000	0.38	3.3

REPORTING PERIOD: 09/18/95 - 12/31/95 (l)				
TOTAL POUNDS REMOVED:		**2.61**		**0.38**
TOTAL GALLONS REMOVED:		**0.43**		**0.05**
PERIOD POUNDS REMOVED:	**0.014**		**0.00**	
PERIOD GALLONS REMOVED:	**0.002**		**0.00**	
TOTAL GALLONS EXTRACTED:	**93,989**			
PERIOD GALLONS EXTRACTED:	**2,457**			
PERIOD AVERAGE FLOW RATE (gpm):	**0.07**			
PRIMARY BED CAPACITY REMAINING:	**96.7%**			

TPPH = Total purgeable petroleum hydrocarbons
gpm = Gallons per minute
µg/L = Micrograms per liter
lbs = Pounds
NS = Not sampled (prior concentrations assumed)
N/A = Not available or not applicable

a. All data prior to 9/1/94 provided by prior consultant.
b. Samples taken 4/21/94; totalizer reading from 4/26/94.
c. Last site visit by RESNA on 5/24/94.
d. Pacific Environmental Group, Inc. became consultant for the site 9/1/94.
e. System operated for two days in 4th quarter 1994; system down due to extensive repairs required for system and compound.
f. System started on January 10, 1995.
g. System auto shutdown 2/14/95; shut down 3/3/95 for repairs.
h. TPPH/benzene pounds removed estimated from previous data.
l. GWE system temporarily shut down 10/13/95.

System operation began December 21, 1993, under RESNA Industries, Inc.; system shut down 4/27/94 - 11/17/94.
Pounds of hydrocarbons removed to date through March 24, 1994 provided by prior consultant.
Benzene mass removal from 12/21/93 through 4/27/94 estimated from data provided by prior consultant.
Prior to June 1995, TPPH was reported as "TPH calculated as Gasoline".
Mass removed is an approximation calculated using averaged concentrations.
Carbon loading assumes an 8 percent isotherm. See certified analytical reports for detection limits.

Table 6
Groundwater Extraction System Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

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

Sample I.D.	Date Sampled	TPPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)
Influent Samples						
SP-105	01/10/94	1,100	180	2.7	26	51
SP-105	02/07/94	3,500	370	120	67	230
SP-105	04/03/95	5,000	1,000	41	88	300
INFL	05/01/95	580	40	ND	1.2	17
SP-105	06/09/95	1,400	420	7	10	20
SP-105	07/05/95	750	41	ND	2.8	17
SP-105	08/10/95	610	29	0.64	3.4	16
SP-105	09/18/95	600	10	ND	ND	20
105	10/02/95	790	52	ND	8.4	67
Midpoint-1 Samples						
SP-106	01/10/94	ND	ND	ND	ND	ND
SP-106	02/07/94	ND	ND	ND	ND	ND
SP-106	04/03/95	ND	ND	ND	ND	ND
MID-1	05/01/95	ND	ND	ND	ND	ND
SP-106	06/09/95	ND	ND	ND	ND	ND
SP-106	07/05/95	ND	ND	ND	ND	ND
SP-106	08/10/95	ND	ND	ND	ND	ND
SP-106	09/18/95	ND	ND	ND	ND	ND
106	10/02/95	ND	ND	ND	ND	ND
Midpoint-2 Samples						
MID-2	11/17/94	ND	ND	ND	ND	ND
SP-107	01/10/94	ND	ND	ND	ND	ND
SP-107	02/07/94	ND	ND	ND	ND	ND
SP-107	04/03/95	ND	ND	ND	ND	ND
SP-107	06/09/94	ND	ND	ND	ND	ND
SP-107	09/18/95	ND	ND	ND	ND	ND
Effluent Samples						
SP-108	01/10/94	ND	ND	ND	ND	ND
SP-108	02/07/94	ND	ND	ND	ND	ND
SP-108	04/03/95	ND	ND	ND	ND	ND
EFFL	05/01/95	ND	ND	ND	ND	ND
SP-108	06/09/95	79	ND	ND	ND	ND
SP-108	07/05/95	ND	ND	ND	ND	ND
SP-108	08/10/95	ND	ND	ND	ND	ND
SP-108	09/18/95	ND	ND	ND	ND	ND
108	10/02/95	ND	ND	ND	ND	ND

µg/L = Micrograms per liter
ND = Not detected above detection limits
System startup on 12/21/93 by RESNA Industries, Inc.
Pacific Environmental Group, Inc. (PACIFIC) became consultant 9/01/94.
PACIFIC restarted system on 11/17/94.
See certified analytical reports for individual detection limits.

Table 7
Groundwater Biodegradation Study Field and Laboratory Data

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

		Field Analyses				Laboratory Analyses	
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	DO (mg/L)	Nitrite as Nitrite (mg/L)	Nitrate as Nitrate (mg/L)
MW-3	11/14/95	65.5*	6.76*	508*	7.17†	<1.0	6.6

DO = Dissolved oxygen
deg F = Degrees Fahrenheit
µmhos = Micromhos
mg/L = Milligrams per liter

* = Field measurements collected on November 2, 1995.
† = DO measurement taken in office.

ATTACHMENT G

San Francisco Regional Water Quality Control Board
Environmental Screening Levels

Table E-1. Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only)

Chemical	Physical State		Residential Land Use (µg/L)	Commercial/Industrial Land Use (µg/L)
Acenaphthene	V	S	4.2E+03	4.2E+03
Acenaphthylene	V	S	(Use soil gas)	(Use soil gas)
Acetone	V	L	5.3E+07	1.5E+08
Aldrin	NV	S		
Anthracene	V	S	4.3E+01	4.3E+01
Antimony	NV	S		
Arsenic	NV	S		
Barium	NV	S		
Benzene	V	L	5.4E+02	1.8E+03
Benzo(a)anthracene	NV	S		
Benzo(b)fluoranthene	NV	S		
Benzo(k)fluoranthene	NV	S		
Benzo(g,h,i)perylene	NV	S		
Benzo(a)pyrene	NV	S		
Beryllium	NV	S		
1,1-Biphenyl	V	S	(Use soil gas)	(Use soil gas)
Bis(2-chloroethyl) ether	V	L	6.5E+01	2.2E+02
Bis(2-chloroisopropyl) ether	V	L	(Use soil gas)	(Use soil gas)
Bis(2-ethylhexyl) phthalate	NV	S		
Boron	NV	S		
Bromodichloromethane	V	L	1.7E+02	5.6E+02
Bromoform (Tribromomethane)	NV	S		
Bromomethane	V	G	5.8E+02	1.6E+03
Cadmium	NV	S		
Carbon tetrachloride	V	L	9.3E+00	3.1E+01
Chlordane	NV	S		
p -Chloroaniline	NV	S		
Chlorobenzene	V	L	1.3E+04	3.7E+04
Chloroethane	V	G	8.2E+02	2.7E+03
Chloroform	V	L	3.3E+02	1.1E+03
Chloromethane	V	G	4.1E+01	1.4E+02
2-Chlorophenol	V	L	5.3E+03	1.5E+04
Chromium (total)	NV	S		
Chromium III	NV	S		
Chromium VI	NV	S		
Chrysene	NV	S	(Use soil gas)	(Use soil gas)
Cobalt	NV	S		
Copper	NV	S		
Cyanide	NV	S	(Use soil gas)	(Use soil gas)
Dibenz(a,h)anthracene	NV	S		
Dibromochloromethane	V	S	1.7E+02	5.7E+02
1,2-dibromo-3-chloropropane	V	L	(Use soil gas)	(Use soil gas)
1,2-Dibromoethane	V	S	1.5E+02	5.1E+02
1,2-Dichlorobenzene	V	L	7.7E+04	1.6E+05
1,3-Dichlorobenzene	V	L	(Use soil gas)	(Use soil gas)
1,4-Dichlorobenzene	V	S	3.4E+02	1.1E+03
3,3-Dichlorobenzidine	NV	S		
Dichlorodiphenyldichloroethane (DDD)	NV	S		
Dichlorodiphenyldichloroethene (DDE)	NV	S		
Dichlorodiphenyltrichloroethane (DDT)	NV	S		
1,1-Dichloroethane	V	L	1.0E+03	3.4E+03
1,2-Dichloroethane	V	L	2.0E+02	6.9E+02

Table E-1. Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only)

Chemical	Physical State		Residential Land Use (µg/L)	Commercial/Industrial Land Use (µg/L)
1,1-Dichloroethene	V	L	6.3E+03	1.8E+04
cis -1,2-Dichloroethene	V	L	6.2E+03	1.7E+04
trans -1,2-Dichloroethene	V	L	6.7E+03	1.9E+04
2,4-Dichlorophenol	NV	S		
1,2-Dichloropropane	V	L	2.8E+02	9.3E+02
1,3-Dichloropropene	V	L	5.3E+01	1.8E+02
Dieldrin	NV	S		
Diethyl phthalate	NV	S		
Dimethyl phthalate	NV	S		
2,4-Dimethylphenol	V	S	2.5E+06	7.1E+06
2,4-Dinitrophenol	NV	S		
2,4-Dinitrotoluene	NV	S		
1,4-Dioxane	NV	L		
Dioxin (2,3,7,8-TCDD)	NV	S		
Endosulfan	NV	S		
Endrin	NV	S		
Ethylbenzene	V	L	1.7E+05	1.7E+05
Fluoranthene	NV	S		
Fluorene	V	S	1.9E+03	1.9E+03
Heptachlor	NV	S		
Heptachlor epoxide	NV	S		
Hexachlorobenzene	NV	S		
Hexachlorobutadiene	NV	S		
γ-Hexachlorocyclohexane (Lindane)	NV	S		
Hexachloroethane	NV	S		
Indeno(1,2,3-c,d)pyrene	NV	S		
Lead	NV	S		
Mercury (elemental)	V	S	(Use soil gas)	(Use soil gas)
Methoxychlor	NV	S		
Methylene chloride	V	L	2.4E+03	8.1E+03
Methyl ethyl ketone	V	L	2.4E+07	6.8E+07
Methyl isobutyl ketone	V	L	3.0E+06	8.4E+06
Methyl mercury	NV	S		
2-Methylnaphthalene	V	S	2.6E+04	2.6E+04
tert -Butyl methyl ether	V	L	2.4E+04	8.0E+04
Molybdenum	NV	S		
Naphthalene	V	S	3.2E+03	1.1E+04
Nickel	NV	S		
Pentachlorophenol	NV	S		
Perchlorate	NV	S		
Phenanthrene	V	S	(Use soil gas)	(Use soil gas)
Phenol	NV	S		
Polychlorinated biphenyls (PCBs)	NV	S		
Pyrene	V	S	1.4E+02	1.4E+02
Selenium	NV	S		
Silver	NV	S		
Styrene	V	L	3.1E+05	3.1E+05
tert -Butyl alcohol			(Use soil gas)	(Use soil gas)
1,1,1,2-Tetrachloroethane	V	L	(Use soil gas)	(Use soil gas)
1,1,2,2-Tetrachloroethane	V	L	1.9E+02	6.4E+02
Tetrachloroethene	V	L	1.2E+02	4.2E+02
Thallium	NV	S		

Table E-1. Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only)

Chemical	Physical State		Residential Land Use (µg/L)	Commercial/Industrial Land Use (µg/L)
Toluene	V	L	3.8E+05	5.3E+05
Toxaphene	NV	S		
TPH (gasolines)	V	L	(Use soil gas)	(Use soil gas)
TPH (middle distillates)	V	L	(Use soil gas)	(Use soil gas)
TPH (residual fuels)	NV	L/S		
1,2,4-Trichlorobenzene	V	L	2.5E+03	7.1E+03
1,1,1-Trichloroethane	V	L	1.3E+05	3.6E+05
1,1,2-Trichloroethane	V	L	3.5E+02	1.2E+03
Trichloroethene	V	L	5.3E+02	1.8E+03
2,4,5-Trichlorophenol	V	S	8.3E+05	1.2E+06
2,4,6-Trichlorophenol	NV	S		
Vanadium	NV	S		
Vinyl chloride	V	G	3.8E+00	1.3E+01
Xylenes	V	L	1.6E+05	1.6E+05
Zinc	NV	S		

Notes:

High permeability soil: One meter dry sandy soil (92% sand, 5% silt, 3% clay) over one meter moist clayey loam (33% sand, 34% silt, 33% clay).

Screening levels calculated using spreadhseet provided with *User's Guide for the Johnson and Ettinger Indoor Air model (1991) for Subsurface Vapor Intrusion Into Buildings (USEPA 2003).* Assumed vadose-zone thickness/depth to groundwater three meters.

Physical state of chemical at ambient conditions (V - volatile, NV - nonvolatile, S -id, L - liquid, G - gas).

Chemical considered to be volatile if Henry's Law constant (atm m3/mole) $>10^{-5}$ and molecular weight <200.

Dibromochloromethane, dibromochloropropane and pyrene considered volatile for purposes of modeling (USEPA 2004).

Target cancer risk = 1E-06, Target Hazard Quotient = 0.2