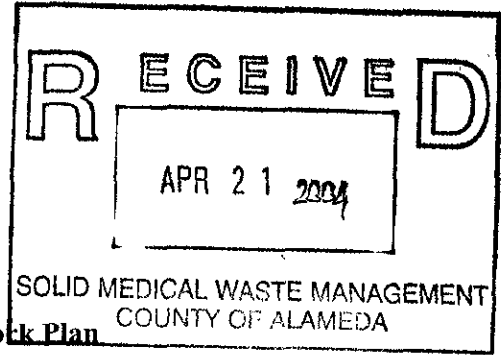




April 16, 2004

Ms. eva chu  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502



Re: **Interim Remedial Action and Offsite Assessment Work Plan**  
**Former BP Service Station #11126**  
**1700 Powell Street**  
**Emeryville, California**  
**URS Project #38486797**

Dear Ms. chu:

On behalf of the Atlantic Richfield Company (ARCO - a BP affiliated company), URS Corporation (URS) is re-submitting a copy of the *Interim Remedial Action and Offsite Assessment Work Plan* for the Former BP Service Station #11126, located at 1700 Powell Street, Emeryville, California. The original was submitted on July 11, 2003. URS requests a response to the recommendations included in the attached work plan.

If you have any questions regarding this submission, please call me at (510) 874-1720.

Sincerely,

**URS CORPORATION**

Leonard P. Niles, R.G./C.H.G.  
Project Manager

Enclosure: Interim Remedial Action and Offsite Assessment Work Plan

cc: Mr. Paul Supple, ARCO, (electronic copy uploaded to ENFOS)  
Ms. Liz Sewell, ConocoPhillips, 76 Broadway, Sacramento, CA 95818



July 11, 2003

Ms. Eva Chu  
Hazardous Materials Specialist  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**Interim Remedial Action and Offsite Assessment Work Plan , Former BP Service Station #11126,  
1700 Powell Street, Emeryville, California, for Group Environmental Management Company**

Dear Ms. Chu:

At the request of Group Environmental Management Company (a BP affiliated company), URS Corporation (URS) is pleased to submit this Interim Remedial Action (IRA) and Offsite Assessment Work Plan for the above referenced site. This Work Plan has been prepared in response to a letter from the Alameda County Health Care Services (ACHCS), dated April 25, 2003. The letter requested BP to outline a proposal to address off-site plume migration and delineate the extent of the plume downgradient of the site. A copy of the ACHCS letter is provided as Attachment A.

### **1.0 BACKGROUND**

The site is located on the northwest corner of Powell Street and Christie Avenue in Emeryville, California (Figure 1). The site is currently operating as a retail gasoline service station. Three gasoline underground storage tanks (USTs) and associated product lines and dispensers are present at the site (Alisto, 1994). A total of nine (9) groundwater monitoring wells exist on the site (Figure 2).

The properties in the immediate vicinity of the site are a mixture of industrial and commercial developments (Alisto, 1994). South of the site and across Powell Street is Powell Street Plaza, a retail commercial development with a number of groundwater monitoring wells on site and around its perimeter (Alisto, 1993). Immediately east of Powell Street Plaza and approximately 1,000 feet southeast of the site are monitoring wells installed in the immediate vicinity of Harcos Pigments, located at 4650 Shell Mound Street. The area surrounding the site was historically used for industrial purposes before being developed into a shopping center.

A soil gas survey was conducted on April 10, 1989, by Target Environmental Services, Inc. (EMCON, 1994). The results of the survey indicated that gasoline may have entered the site subsurface at the pump islands, UST complex, or along the product supply lines. Total volatile hydrocarbons were detected in soil vapor in concentrations up to 932,000 ug/L. Laboratory results indicated the presence of gasoline in the subsurface soil at the site. The highest concentrations of total volatile hydrocarbons were detected in the vicinity of the pump islands and east of the USTs.

On April 24, 1989, one 550-gallon waste oil underground tank was removed from the site (Alisto, 1994). Confirmatory soil samples collected from beneath the tank and sidewalks contained up to 340 parts per million (ppm) total oil and grease (TOG), 27 ppm total petroleum hydrocarbons as diesel (TPH-d) and 9.6 ppm total petroleum hydrocarbons as gasoline (TPH-g). A further set of confirmatory soil samples was collected from the new waste oil tank pit, located approximately 20 feet south of the old waste oil tank pit. These samples contained up to 10,000 ppm TOG and 370 ppm TPH-d.

In 1993, BP installed monitoring wells MW-1 through MW-4 as part of a preliminary site investigation (Alisto, 1994). Laboratory analysis detected TPH-g at concentrations of up to 280 ppm and benzene at concentrations of up to 0.94 ppm in the soil samples collected at depths of up to 5.5 feet below grade in the immediate vicinity of the underground fuel storage tanks and dispenser islands. Dissolved phase TPH-g at concentrations of up to 12,000 parts per billion (ppb) and benzene at concentrations of up to 3,900 ppb were detected in groundwater samples collected from all the monitoring wells at the site.

Additional monitoring wells were installed on and off site in September 1993 (Alisto, 1994). MW-5 was installed off site in the center of Powell Street to the south of the station; MW-6 and MW-7 were installed to the west of the site in the adjacent Denny's restaurant parking lot; MW-8 was installed on site to the north of the USTs; and MW-9 was installed west of the USTs near the dispenser islands (Figure 2). MW-5 through MW-8 are 2 inches in diameter, screened from approximately 3.5 to 15 feet bgs, and MW-9 is 4 inches in diameter, screened from 3.5 to 15 feet bgs.

During installation of wells MW-5 through MW-9, groundwater was first encountered at approximately 7 feet bgs, with saturated soil conditions at approximately 6.5 feet bgs. Up to 4,600 milligrams per kilogram (mg/kg) TPH-g and 76 mg/kg benzene were detected in soil samples collected at approximately 4.5 feet bgs. Free product was detected in well MW-9 at an approximate thickness of 0.08 feet. A product recovery canister was installed at well MW-9. Dissolved phase hydrocarbons were detected in six of the eight wells sampled at concentrations of up to 4,500 ppb TPH-g and 3,400 ppb benzene. Analysis of a groundwater sample collected from well MW-3, located near the waste oil tank, detected 2,100 ppb TPH-d. TOG and volatile organic compounds were not detected. Soil and groundwater results from previous consultants are provided in Attachment B.

Alisto's April 1994 *Supplemental Site Investigation Report* also indicated that several potential offsite sources were previously located near to or upgradient of the site (Alisto, 1994). These included former Pabco Products, a paint, roofing and floor coverings manufacturing facility located on and northeast of the site, which stored oil in aboveground tanks at the site; former Auto Freight Depot, located on the southeast corner of Shellmound Road and Powell Street, approximately 450 feet east of the site; Former Truck Repair Shop, approximately 480 feet east-southeast of the site, which stored diesel and gasoline in aboveground tanks; and former Pacific Intermountain Express Truck Terminal, located approximately 440 feet southeast of the site, which included aboveground and underground petroleum storage tanks.

A Baseline Assessment Report for the site was prepared by EMCON in December 1994, at the time Tosco acquired the property from BP (EMCON, 1994). The Baseline Assessment Report reported that an *Underground Storage Tank Unauthorized Release (Leak)/Contamination Site Report* from the Alameda County Environmental Health Department, Hazardous Materials Division, dated May 2, 1989, indicated an unknown quantity of waste oil was released at the site on May 2, 1989, prior to Tosco's purchase.

EMCON performed supplemental site assessment work in October 1994 (EMCON, 1994). Three soil borings (THP-1, TB-2 and THP-3; recorded as TB-1, TB-2 and TB-3 in EMCON's Table A-1) were

advanced on site using cone penetrometer equipment. Soil and groundwater samples were collected from borings THP-1 and THP-3. TPH-g up to 290 ppm and one or more BTEX constituents per sample were detected in soil. TPH-d was also detected in soil at THP-1 (33 ppm), and TOG was detected in soil at THP-3 (1,800 ppm). Both groundwater samples contained TPH-g up to 4,600 ppb and BTEX (up to 800 ppb benzene, 290 ppb toluene, 9.5 ppb ethylbenzene, and 410 ppb xylenes). TOG at 3,300 ppb, trans-1,2-dichloroethane (DCE) at 2.4 ppb, cis-1,2-DCE at 41 ppb and 1,2-dichloroethane (DCA) at 6.4 ppb were also detected in the groundwater sample collected from THP-1.

EMCON personnel checked the fuel dispensers for the presence of spill containment boxes and for indications of leakage on December 5, 1994 (EMCON, 1994). No spill containment boxes were found. Photoionization detector (PID) readings taken from backfill material below the dispensers ranged from 27 ppm to 1,063 ppm, and staining was observed beneath the northeast and southwest dispensers. Grab soil samples were collected from beneath the fuel dispensers (TD-1, TD-2, TD-3 and TD-4). TPH-g was detected up to 1,400 ppm; TPH-d was detected up to 4,600 ppm; low levels of toluene and xylene were detected in one sample.

In April 1999, at the request of Tosco, Environmental Resolutions Inc. (ERI) performed a five-day soil vapor extraction (SVE) test at the subject site (ERI, 1999). Existing on-site UST backfill wells (TP-1 and TP-2) were used for soil vapor extraction and groundwater monitoring wells MW-1, MW-2 and MW-4 were used for observation. Results of analyses of vapor samples collected from well TP1 indicated that the MTBE concentrations decreased from 4,820 micrograms per liter (ug/L) to 300 ug/L during the test, while TPH-g concentrations decreased from 12,800 ug/L to 464 ug/L. ERI estimated that approximately 21.5 pounds (lbs) of TPH-g and 16.7 lbs of MTBE were removed during the five-day test; eight 200-lb carbon vessels were saturated to breakthrough. Flow rates ranged from 88 to 98 standard cubic feet per minute (SCFM) at an applied vacuum of 12 inches of hydrogen (in Hg); however, no effective radius of influence, defined as 0.5 inches water column (in WC) vacuum, was measured in native soil outside the UST backfill.

On April 28 1999, after the SVE test, SECOR observed the removal of one 550-gallon waste oil UST along with a clarifier and two hoists from the former service bays as part of site remodeling activities (SECOR, 1999). The waste oil UST, Hoist No. 2, and the clarifier and Hoist No. 1 were removed from separate excavations (total of three).

Groundwater was encountered at 7.5 feet bgs in the waste oil UST excavation (SECOR, 1999). No holes or cracks were noted in the waste oil UST. A grab groundwater sample was collected from the waste oil UST excavation, and was found to contain 560 ug/L TPH-d, 710 ug/L TPH as motor oil (TPH-mo), 10 ug/L benzene and 2,400 ug/L MTBE. Groundwater was encountered at approximately 6 feet bgs in the hoist and clarifier excavations, but no groundwater samples were collected.

Soil samples collected from the vicinity of the former waste oil UST and service bays revealed impact to the subsurface by petroleum hydrocarbons (SECOR, 1999). Up to 18 mg/kg TPH-g, 0.19 mg/kg benzene, 370 mg/kg TPH-d, and 7,000 mg/kg TPH-mo were detected in confirmatory samples collected from the waste oil UST excavation at approximately 5 feet bgs. No MTBE was detected. Confirmatory soil samples were collected from beneath the former clarifier at 4 feet bgs, the former Hoist No. 1 at 8 feet bgs, and the former Hoist No. 2 at 8 feet bgs on April 28, 1999. TPH-g was detected at concentrations up to 3.0 mg/kg (clarifier); TEPH was detected up to 870 mg/kg (Hoist No. 1); TPH-mo was detected up to 4,200 mg/kg (Hoist No. 1); benzene was detected at up to 0.013 mg/kg (clarifier); lead was detected at up to 22,000 mg/kg (clarifier); and cadmium was detected at up to 2.4 mg/kg (clarifier).

The clarifier and hoist areas were overexcavated based on these results on May 7, 1999. Additional confirmatory soil samples were collected from the clarifier excavation at 5 feet bgs, and the hoist excavations at 5 feet bgs. TPH-g was detected up to 1,200 mg/kg (Hoist No. 1); TEPH was detected up to 1,200 mg/kg (Hoist No. 1); TPH-mo was detected up to 5,000 mg/kg (Hoist No. 1); and lead was detected up to 410 mg/kg (clarifier). BTEX and other metals were not analyzed for in the May 7, 1999 set of confirmatory samples. Stockpiled excavated soil was analyzed and found to contain 720 mg/kg total lead, 15 mg/kg STLC lead and 0.13 mg/L TCLP lead, and 610 mg/kg pyrene.

Removal and replacement of product lines and dispensers was performed by Gettler Ryan Incorporated (GRI) on March 28 and 30, 2001 (SECOR, 2001). Sampling activities were performed by SECOR. During removal of product lines soil in the excavation trench appeared to be stained. Suspected petroleum hydrocarbon odors were also noted. The entire length of the former product line trench was subsequently over-excavated an additional 1.5 feet to 3.5 feet bgs prior to sampling. An additional 150 cubic yards (cy) of soil were removed from the site during trenching and over-excavation activities. Due to insufficient grading, the former trenches were not suitable for re-use. GRI therefore backfilled the former trenches with clean imported backfill and excavated an additional 100 cy of soil installing new product line trenches. A total of 13 confirmatory soil samples were collected from product line, dispenser and trench excavations. TPH-g and TPH-d were detected in all 13 samples at concentrations up to 5,300 mg/kg TPH-g and 630 mg/kg TPH-d in sample PL-4-3.5', collected from a product line trench near MW-9. MTBE was detected in 12 of 13 samples up to 8.4 mg/kg in sample PD-NE-3.5' collected from beneath a product dispenser.

URS is currently coordinating ongoing groundwater monitoring at the site (URS, 2003). The most recent quarterly monitoring data from the second quarter 2003 shows TPH-g in seven of nine wells ranging from 1,000 ug/L (well MW-7) to 120,000 ug/L (well MW-2); benzene in four of nine wells ranging from 9.1 ug/L (well MW-5) to 1,100 ug/L (well MW-2); and MTBE in eight of nine wells ranging from 140 ug/L (well MW-6) to 72,000 ug/L (well MW-2) (Figure 2). The fuel oxygenate tert-amyl methyl ether (TAME) was detected in five of nine wells at concentrations ranging from 16 ug/L in well MW-3 to 1,300 ug/L in well MW-2. Tert-butyl alcohol (TBA) was detected only in MW-4 at 2,500 ug/L. The calculated groundwater gradient was 0.018 feet per foot (ft/ft) to the west-southwest, with an east-southeasterly component at a gradient of 0.041 ft/ft.

The highest dissolved phase hydrocarbon concentrations on site are in MW-2 and MW-9, west of the USTs. Free product was formerly present in MW-9, but has not been detected since 2001. Based on groundwater monitoring results from 1992 to the present, hydrocarbon impact is present off-site, with TPH-g and MTBE concentrations increasing in well MW-7 since 2001, decreasing in well MW-6 since 2001 except for an increase in TPH-g concentrations in the second quarter 2003, and consistently present in well MW-5 since 1993. The extent of hydrocarbon impact in the site vicinity requires further definition to the south and southwest of the site. Groundwater monitoring results through the second quarter 2003 are provided in Tables 1 and 2.

## 2.0 PROPOSED SCOPE OF WORK

The proposed scope of work responds to the ACHCS request for an IRA and Offsite Assessment Work Plan. The scope of the work plan is designed to: (1) actively address further off-site dissolved-phase plume migration, (2) facilitate mass removal of dissolved-phase hydrocarbons and (3) delineate the downgradient extent of dissolved-phase hydrocarbon contamination.

## 2.1 Proposed Interim Remedial Action

URS proposes bi-weekly groundwater batch extraction from well MW-9. Well MW-9 has consistently shown the highest hydrocarbon and MTBE concentrations at the site, and has historically also contained free product. MW-9, 4 inches in diameter, is the only site well larger than 2 inches in diameter. It is located just downgradient of the USTs, presumed to be the main source of contamination. Groundwater extraction from this well will remove dissolved-phase hydrocarbons from the subsurface and also mitigate offsite migration of the hydrocarbon plume.

Approximately 2,500 gallons of groundwater will be removed by vacuum truck from well MW-9 on a bi-weekly basis for 6 months. The actual volume removed will depend on the productivity of well MW-9. Dedicated PVC stingers will be placed in well MW-9 for reuse at each batch extraction event. Depth to water measurements will be collected from on-site wells, including well MW-9, before and after each batch extraction event to determine the radius of influence. Groundwater at well MW-9 will also be sampled before and after each batch extraction event. Groundwater samples will be analyzed for TPH-g and BTEX by EPA method 8015/8021, and for fuel oxygenates including MTBE and TBA by EPA method 8260. Extracted groundwater will be hauled by a BP-approved waste transporter to a BP-approved disposal facility. The estimated amount of water removed from well MW-9 will be indicated on a field sheet. The final volume of water disposed during each extraction event will be recorded on a waste manifest or Bill of Lading.

The results of the batch extraction program will be evaluated in regular quarterly groundwater monitoring reports. Hydrocarbon and MTBE mass removal rates will be calculated using the groundwater analytical results for well MW-9 before and after each batch extraction event and the volume of groundwater extracted. The volume of groundwater extracted and calculated mass removal will be included in a table included in the quarterly monitoring report. Bills of Lading will also be included in the quarterly monitoring reports as an appendix.

## 2.2 Contaminant Plume Definition

To determine the nature and downgradient extent of the dissolved-phase petroleum hydrocarbons in the vicinity of the site, URS proposes the installation of three off-site groundwater monitoring wells (MW-10, MW-11 and MW-12) (Figure 3). Well MW-10 will be located west of the subject site on the north side of Powell Street. MW-11 and MW-12 will be located south and southwest of the subject site, respectively, on the south side of Powell Street. URS proposes to locate the wells on private property adjacent to Powell Street, pending access agreements. If access is not granted, the borings will be located within the Powell Street right-of-way pending encroachment permit approval from the City of Emeryville. Boring and well installation permits will be obtained from ACHCS prior to drilling activities.

Borings will be advanced to a total depth of approximately 15 feet bgs using a hollow stem auger technique. The borings will be sampled at 5-foot intervals to further evaluate the presence of hydrocarbon contamination and site lithology. Soil samples will be logged by a URS geologist according to the Unified Soil Classification System (USCS), and monitored for grain size, color, consistency, staining, and odor using a PID. Soil samples collected for potential chemical analysis will be sealed with Teflon® tape, capped, and placed in an ice-filled cooler for transportation to the laboratory.

Following boring advancement to the desired depth, monitoring wells will be constructed in the borings. Flush threaded, two-inch diameter schedule 40 PVC slotted well screen with threaded end cap will be placed in the borings with approximately 10 feet of well screen extending from 5 to 15 feet bgs. The wells

will be completed to ground surface with two-inch diameter, blank, schedule 40 PVC casing. Monterey #3 sand or equivalent will be placed in the annular space adjacent to the well screen and will be installed to approximately one to two feet above the top of the well screen. One to two feet of bentonite pellets will be placed above the sand, followed by a 5 to 10% bentonite-cement mixture to ground surface.

The wellheads will be completed at ground surface with a locking well cap and traffic-rated bolt-down well vault. The vault will be installed slightly above the surrounding surface grade and finished with a cement apron to provide positive relief away from the wellhead. A California-licensed land surveyor will then survey the elevation of the wellhead within 0.01 feet accuracy with respect to MSL and for lateral position within 0.5 meter accuracy using northing and easting coordinates. The wellhead elevation will be measured from an existing benchmark or calculated using GPS. Survey methods will be in compliance with State Water Resources Control Board GeoTracker requirements, using NAD 83 and NAVD 88 datum. The wellhead elevation will be compared to depth to groundwater measurements to calculate groundwater elevation above MSL as well as a groundwater flow direction and gradient.

After allowing the wellhead and grout to cure for at least 48 hours, URS will measure the total well depth and depth to water at the well using a water level indicator calibrated to within 0.01 foot. URS will also check for the potential presence of separate phase hydrocarbons (free product) in the well using an interface probe capable of detecting free product thickness to 1 millimeter. URS will develop the well by alternately swabbing and surging the well using a hand held surge block. URS will then remove 8 to 10 casing volumes of water from the well by pumping and/or bailing, monitoring the removed water for parameters such as pH, turbidity, temperature, and conductivity.

Following at least 72 hours after well development, URS will gauge the well, remove at least 3 casing volumes of water by bailing, and collect a groundwater sample by lowering a dedicated, disposable bailer into the well, collecting water, and decanting the collected water into laboratory-supplied sample containers. The groundwater sample will be labeled and placed in ice-filled coolers for preservation.

### **2.3 Preliminary Field Activities**

Prior to initiating field activities, URS will obtain necessary permits and access agreements, prepare a site Health and Safety Plan (HASP) for the proposed work, and conduct a subsurface utility clearance. The utility clearance will include notifying Underground Service Alert (USA) of the pending work a minimum of 48 hours prior to initiating the field investigation, and securing the services of a private utility locating company to confirm the absence of underground utilities at each boring location.

A site-specific HASP will be prepared for use by personnel implementing the work plan. The HASP will address the proposed boring/well installations and groundwater sampling. A copy of the HASP will be available on-site at all times. The subcontractor(s) performing field activities will be provided with a copy of the HASP prior to initiating work.

### **2.4 Sample Analysis**

Selected soil samples and groundwater samples collected during this investigation will be submitted to a California State-certified analytical laboratory for analysis of TPH-g, BTEX and fuel oxygenates including ethanol using EPA Method 8260B.

**2.5 Waste Disposal**

Investigation derived residuals will be temporarily stored on-site in 55-gallon, DOT-approved 17H drums, pending characterization and disposal. URS will coordinate with BP and Dillard Environmental Services (Dillard, under direct contract to BP) to transport and dispose of the soil at an BP approved facility.

**3.0 Corrective Action Plan**

Upon completion of field activities and receipt of all laboratory analytical data, URS will finalize and provide the ACHCS with a Corrective Action Plan, which will document the results of this investigation, summarize the results of previous investigations and the extent of hydrocarbons in soil and groundwater, develop a Conceptual Site Model (CSM) and recommend further investigation or remedial action if warranted.

**4.0 PROPOSED SCHEDULE**

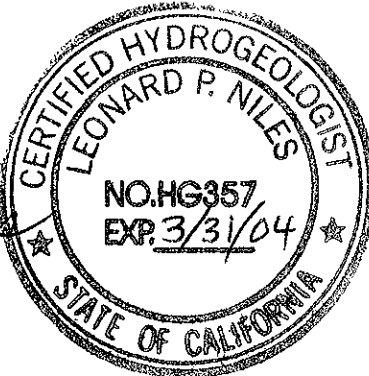
Upon receiving written approval of this Work Plan from the ACHCS, URS will proceed with the proposed work. URS will obtain proper permits and will complete the proposed work upon their receipt. URS anticipates submitting the Corrective Action Plan to ACHCS within 60 days of receipt of all laboratory analytical results from drilling activities.

We appreciate the opportunity to submit this Work Plan to ACHCS and trust that this document meets with your approval. Please notify us of your approval as soon as practical. If you have any questions or concerns, feel free to contact me at (510) 874-1720.

Sincerely,

**URS Corporation**

*Leonard P. Niles*  
 Leonard P. Niles, RG/CHG  
 Project Manager



Attachments:

Figure 1 – Site Location Map

Figure 2 - Groundwater Elevation Contour and Analytical Summary Map, Second Quarter 2003

Figure 3 - Proposed Offsite Wells

Table 1 – Groundwater Elevation and Analytical Data, Second Quarter 2003

Table 2 - Fuel Oxygenate Analytical Data

Attachment A – Alameda County Health Care Services Agency, Environmental Health Services letter, dated April 25, 2003

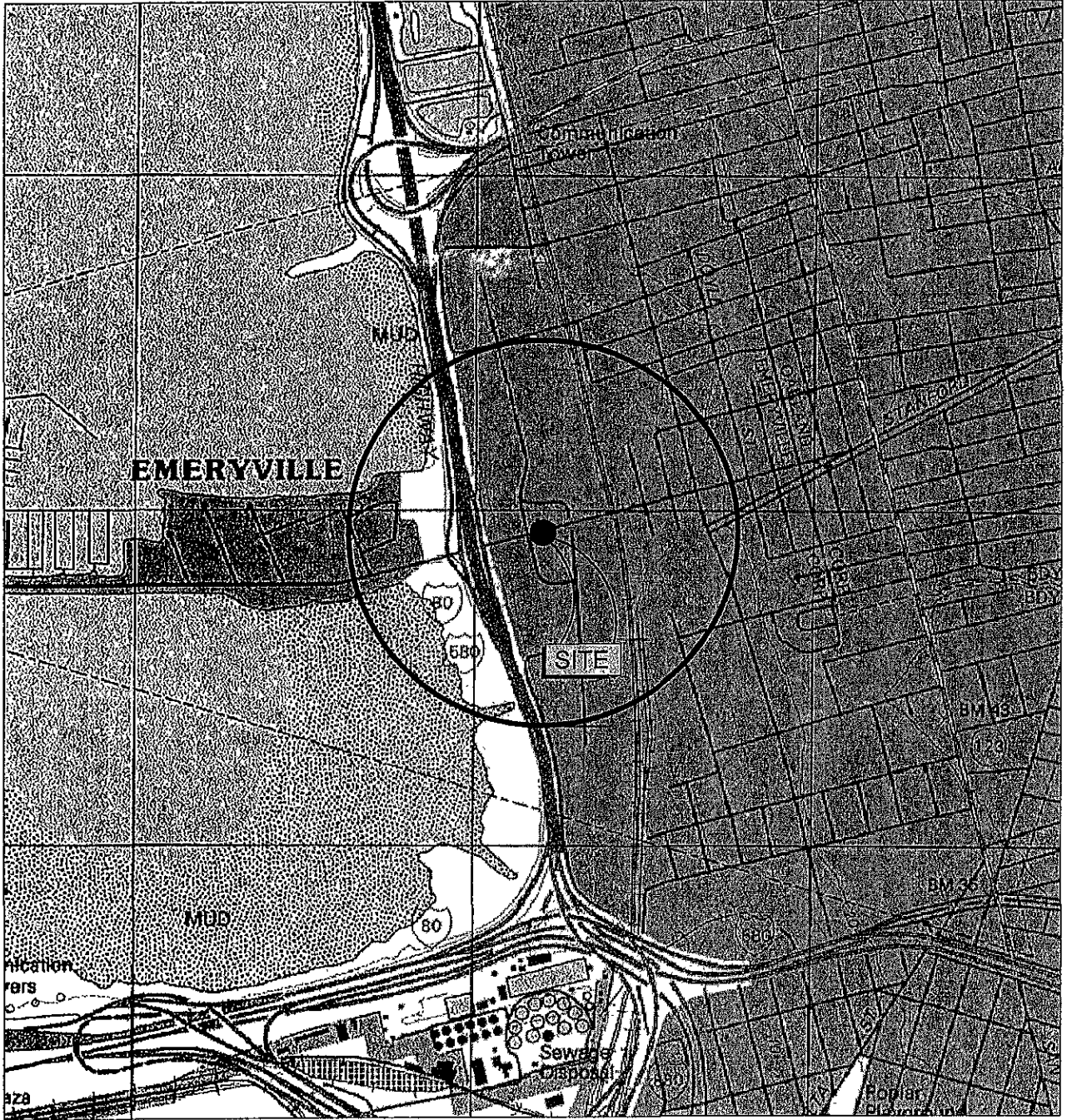
cc: Mr. Paul Supple, BP GEM, P.O. Box 6549, Moraga, CA 94549



## REFERENCES

- Alisto Engineering Group (Alisto), 1993. Preliminary Site Assessment Report, BP Oil Company Service Station No. 11126, 1700 Powell Street, Emeryville, California. January.
- Alisto Engineering Group (Alisto), 1994. Supplemental Site Investigation Report, BP Oil Company Service Station No. 11126, 1700 Powell Street, Emeryville, California. April 8.
- EMCON Northwest, Inc. (EMCON), 1994. Baseline Assessment Report, Site Number 11126, 1700 Powell Street, Emeryville, CA. December 27.
- Environmental Resolutions, Inc. (ERI), 1999. Extended Soil Vapor Extraction Test Report at Tosco BP Service Station 11126, 1700 Powell Street, Emeryville, California. July 20.
- SECOR International Incorporated (SECOR), 1999. Removal of Waste Oil UST, Hoists No. 1 and No. 2 and Clarifier Sump, Tosco Service Station 11126 (BP Branded), 1700 Powell Street, Emeryville, California. June 29.
- SECOR International Incorporated (SECOR), 2001. Removal and Replacement of Product Lines, Dispensers and Canopy, Tosco (Former BP) Service Station #11126, 1700 Powell Street, Emeryville, California. May 4.
- URS Corporation (URS), 2003. Second Quarter 2003 Groundwater Monitoring, Former BP Station #11126, 1700 Powell Street, Emeryville, California. April 14.

**FIGURES**

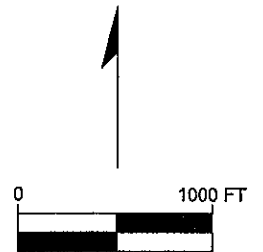


REFERENCE:  
 BASE MAP FROM TOPO MAP  
 NORTH REGION 7

7.5 MINUTE TOPOGRAPHIC  
 PHOTOREVISED 1998



QUADRANGLE LOCATION



APPROXIMATE SCALE



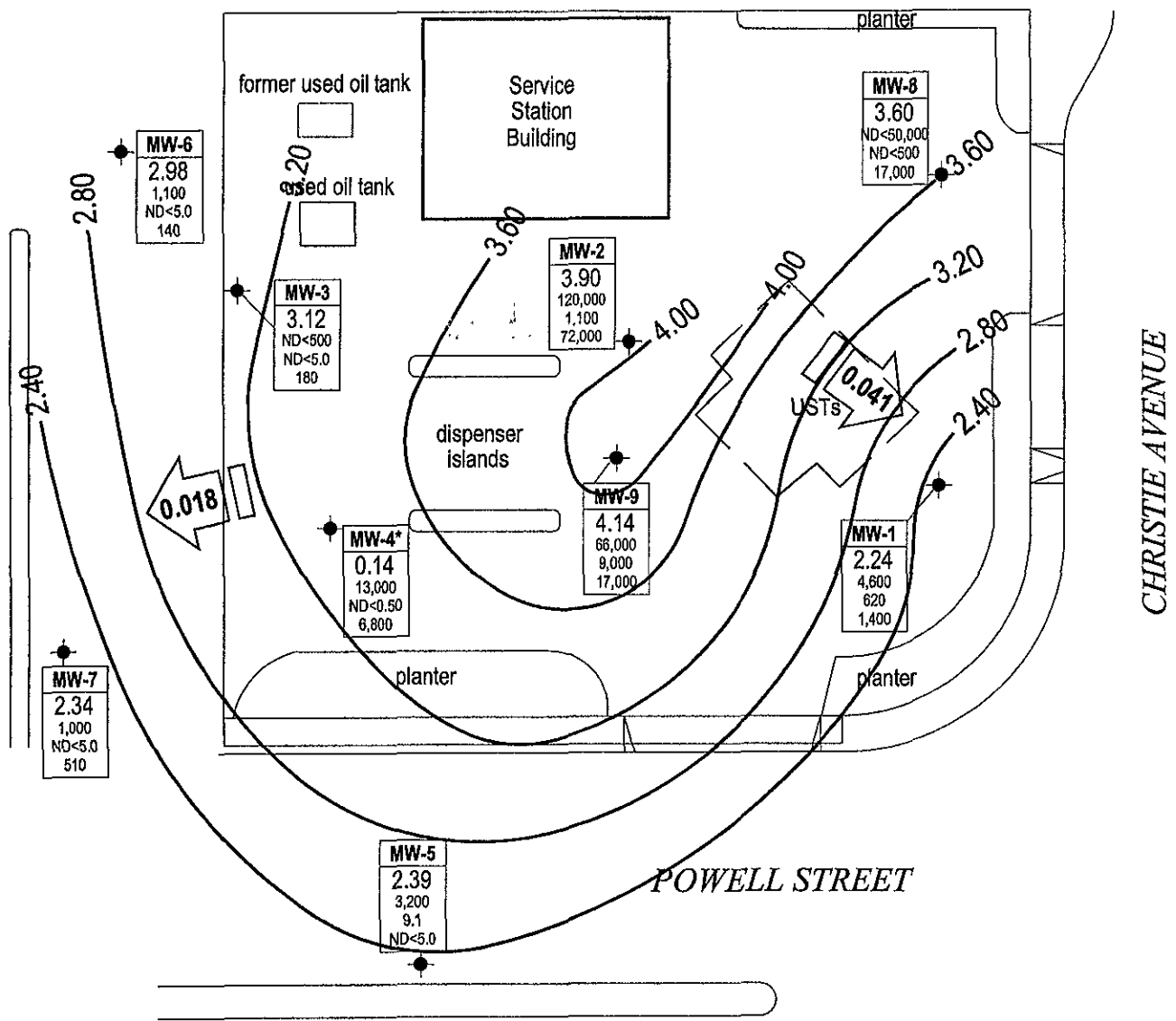
Project No. 38486245  
 Former BP Service Station #11126  
 1700 Powell Street  
 Emeryville, California

**SITE LOCATION MAP**

FIGURE

1

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**EXPLANATION**

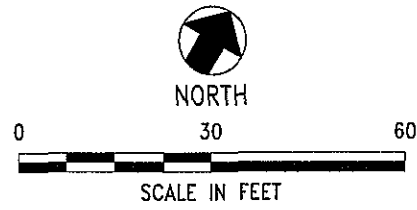
- Monitoring well location
- 3.60 — Groundwater elevation contour (ft/MSL)
- |         |
|---------|
| Well    |
| ELEV    |
| TPH-g   |
| Benzene |
| MTBE    |

 Well designation
- |         |
|---------|
| Well    |
| ELEV    |
| TPH-g   |
| Benzene |
| MTBE    |

 Groundwater elevation (ft/MSL)
- |         |
|---------|
| Well    |
| ELEV    |
| TPH-g   |
| Benzene |
| MTBE    |

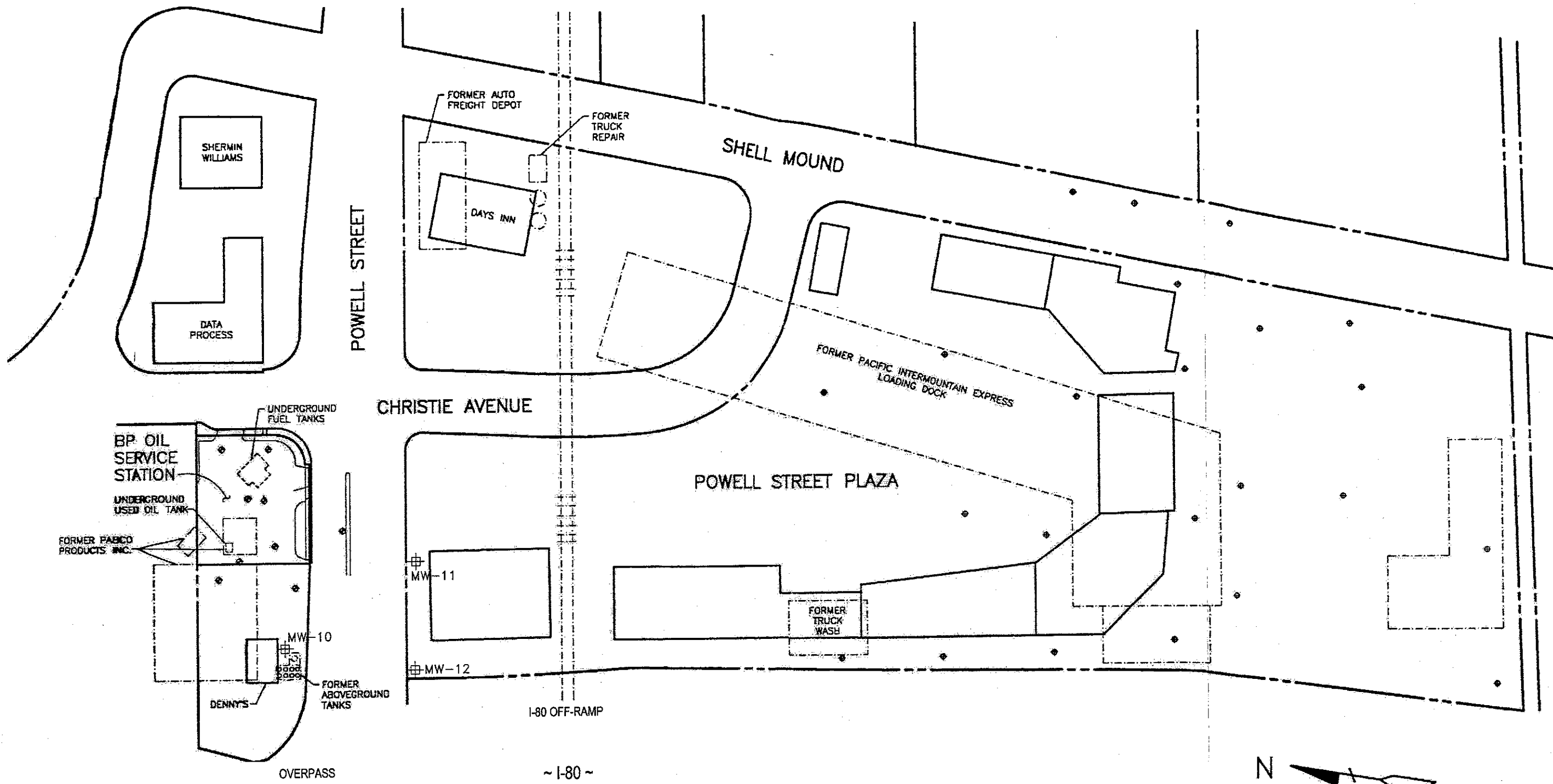
 TPH-g, Benzene and MTBE concentrations in micrograms per liter (µg/L)
- ND< Not detected at or above laboratory reporting limits
- Groundwater flow direction and gradient (ft/MSL)

NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FIGURES FACILITY LOCATIONS NOT VERIFIED.

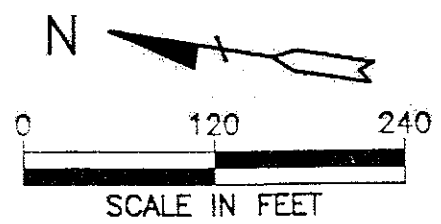


	Project No. 38486245	<b>GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP</b> Second Quarter 2003 (June 6, 2003)	FIGURE <b>2</b>
	Former BP Service Station #11126 1700 Powell Street Emeryville, California		

X:\a\_env\waste\BP...figures\fig3a\_112633\_PROP-OFFWELLS.dwg, 07/11/2003 02:27:31 PM, JKMT, urs



- LEGEND**
- ◊ WELLS INSTALLED DURING INVESTIGATION OF BP OIL SITE NO. 11126
  - ⊕ WELLS INSTALLED DURING INVESTIGATION OF PACIFIC INTERMOUNTAIN EXPRESS SITE
  - - - FORMER STRUCTURES
  - ⊕ PROPOSED MONITORING WELLS



<b>URS</b>	Project No. 38486245	<b>PROPOSED OFFSITE WELLS</b>	FIGURE <b>3</b>
	Former BP Service Station #11126 1700 Powell Street Emeryville, California		

TABLES

**TABLES**

**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB	
MW-1	11/04/1992	7.76	4.96	---	2.80	5300	---	1100	480	ND<0.5	1500	---	(k)	---	---	---	PACE
MW-1	10/12/1993	7.76	5.26	---	2.50	3600	---	970	71	100	550	6111	(k)	---	---	---	PACE
MW-1	02/15/1994	7.76	4.98	---	2.78	17000	---	4200	510	360	1600	5495	(k)	---	---	3.9	PACE
MW-1	05/11/1994	7.76	4.55	---	3.21	5500	---	2900	37	56	64	705	(k)	---	---	8.0	PACE
MW-1	08/01/1994	7.76	5.51	---	2.25	15000	---	3600	740	510	2800	9718	(d)(k)	---	---	2.9	PACE
MW-1	10/18/1994	7.76	5.11	---	2.65	16000	---	1800	61	160	890	15668	(k)	---	---	2.9	PACE
MW-1	01/13/1995	7.76	3.05	---	4.71	220	---	7	ND<0.5	1	23	---	---	---	---	6.6	ATI
MW-1	04/13/1995	7.76	3.84	---	3.92	9300	---	4000	300	200	950	---	---	---	---	7.7	ATI
MW-1	07/11/1995	7.76	3.60	---	4.16	15000	---	2200	84	ND<25	2500	---	---	---	---	8.8	ATI
MW-1	11/02/1995	7.76	4.58	---	3.18	19000	---	920	ND<100	ND<100	430	52000	---	---	---	7.3	ATI
MW-1	02/05/1996	7.76	4.43	---	3.33	4600	---	1400	330	54	247	8700	---	---	---	3.2	SPL
MW-1	04/24/1996	7.76	4.00	---	3.76	2000	---	510	33	61	228	4500	---	---	---	7.5	SPL
MW-1	07/15/1996	7.76	4.30	---	3.46	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	07/16/1996	7.76	---	---	---	12000	---	2800	170	390	1630	64000	---	---	---	7.9	SPL
QC-1 (e)	07/16/1996	---	---	---	---	12000	---	2800	160	390	1610	63000	---	---	---	---	SPL
MW-1	07/30/1996	7.76	4.64	---	3.12	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/12/1996	7.76	---	---	---	11000	---	2500	160	ND<10	1740	440000	---	---	---	7.0	SPL
MW-1	11/04/1996	7.76	5.98	---	1.78	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	11/05/1996	7.76	---	---	---	53000	---	1300	43	100	349	42000/190000	(f)	---	---	6.6	SPL
MW-1	05/17/1997	7.76	4.65	---	3.11	52000	---	1958	55	305	1216	140198	---	---	---	5.7	SPL
MW-1	08/11/1997	7.76	4.90	---	2.86	25000	---	540	6.7	ND<5.0	57	360000	---	---	---	7.9	SPL
MW-1	11/17/1997	7.76	6.12	---	1.64	93000	---	1200	31	180	40	400000	---	---	---	7.6	SPL
MW-1	01/29/1998	7.76	4.90	---	2.86	4800	---	320	24	52	19.9	ND<50	---	---	---	6.6	SPL
MW-1	06/22/1998	7.76	4.62	---	3.14	63000	---	180	ND<5.0	15	69	57000	---	---	---	6.0	---
MW-1	12/30/1998	7.76	5.41	---	2.35	22000	---	2500	24	120	400	15000/13000	(f)	---	---	---	SPL
MW-1	03/09/1999	7.76	3.40	---	4.36	16000	---	2000	84	290	510	13000	---	---	---	---	SPL
MW-1	06/23/1999	7.76	4.60	---	3.16	9600	---	4500	21	160	260	24000	---	---	---	---	SPL
MW-1	09/23/1999	7.76	4.21	---	3.55	3800	---	1600	32	150	240	7100	---	---	---	---	SPL
MW-1	12/28/1999	7.76	4.10	---	3.66	3400	---	ND<2200	17	53	130	5500	---	---	---	---	PACE
MW-1	03/22/2000	7.76	5.51	---	2.25	6400	---	1100	45	190	330	4900	---	---	---	---	PACE
MW-1	05/26/2000	7.76	4.79	---	2.97	110000	---	700	44	140	250	320000	---	---	---	---	PACE
MW-1	09/06/2000	7.76	5.19	---	2.57	5600	---	1000	13	57	90	19000	---	---	---	---	PACE
MW-1	09/15/2000	7.76	5.73	---	2.03	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	12/11/2000	7.76	5.82	---	1.94	5500	---	1160	47.1	155	292	3900	---	---	---	---	PACE
MW-1 (h)	03/29/2001	7.76	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	06/27/2001	7.76	5.49	---	2.27	6100	---	1200	12.9	17.3	77.9	1780	---	---	---	---	PACE
MW-1	09/19/2001	7.76	6.19	---	1.57	1800	---	102	ND<12.5	ND<12.5	ND<37.5	1090	---	---	---	---	PACE
MW-1	12/28/2001	7.76	5.27	---	2.49	4000	---	540	11.8	20.4	64.6	1120	---	---	---	---	PACE
MW-1	03/12/2002	7.76	5.68	---	2.08	3700	---	491	8.39	12.4	27.3	1020	---	---	---	---	PACE
MW-1	6/13/2002*	7.76	5.54	---	2.22	1900	---	255	ND<12.5	ND<12.5	ND<25	6490	---	---	---	---	PACE
MW-1	09/06/2002	7.76	5.56	---	2.20	1100	---	170	5.1	2.2	20	550	---	---	---	---	SEQ
MW-1 (o)	12/13/2002	7.76	5.45	---	2.31	2700	---	610	10	18	67	470	---	---	---	---	SEQ
MW-1 (p)	02/19/2003	7.76	3.00	---	4.76	1500	---	180	ND<5.0	ND<5.0	15	610	---	---	---	---	SEQ
MW-1	06/06/2003	7.76	5.52	---	2.24	4600	---	620	ND<25	ND<25	55	1400	---	---	---	---	SEQ

**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
MW-2	11/04/1992	8.56	5.88	---	2.68	12000	---	3900	1300	ND<0.5	2300	---	(k)	---	---	PACE
QC-1 (e)	11/04/1992	---	---	---	---	12000	---	3200	980	ND<0.5	1900	---	---	---	---	PACE
MW-2	10/12/1993	8.56	6.29	---	2.27	4500	---	3400	180	230	940	442	(k)	---	---	PACE
MW-2	02/15/1994	8.56	5.56	---	3.00	2000	---	430	270	28	390	127	(k)	---	4.0	PACE
QC-1 (e)	02/15/1994	---	---	---	---	1800	---	290	160	14	250	---	---	---	---	PACE
MW-2	05/11/1994	8.56	5.17	---	3.39	14000	---	3900	1200	440	1900	953	(k)	---	8.9	PACE
QC-1 (e)	05/11/1994	---	---	---	---	15000	---	5600	1500	470	2000	740	(d)	---	---	PACE
MW-2	08/01/1994	8.56	5.43	---	3.13	8200	---	3000	420	230	680	1676	(k)	---	2.6	PACE
MW-2	10/18/1994	8.56	5.71	---	2.85	9000	---	2000	140	150	420	2417	(k)	---	7.2	PACE
MW-2	01/13/1995	8.56	4.67	---	3.89	7900	---	2200	42	ND<5	770	---	---	---	6.8	ATI
MW-2	04/13/1995	8.56	4.37	---	4.19	33000	---	8000	2500	1100	6600	---	---	---	7.5	ATI
QC-1 (e)	04/13/1995	---	---	---	---	25000	---	6500	1500	110	5300	---	---	---	---	ATI
MW-2	07/11/1995	8.56	4.51	---	4.05	19000	---	3300	99	7.5	4600	---	---	---	7.8	ATI
QC-1 (e)	07/11/1995	---	---	---	---	28000	---	6800	1000	900	4900	---	---	---	---	ATI
MW-2	11/02/1995	8.56	5.55	---	3.01	20000	---	3800	1200	570	2700	15000	---	---	7.3	ATI
QC-1 (e)	11/02/1995	---	---	---	---	22000	---	4000	1200	600	2700	19000	---	---	---	ATI
MW-2	02/05/1996	8.56	5.10	---	3.46	1200	---	320	220	26	187	99	---	---	2.2	SPL
QC-1 (e)	02/05/1996	---	---	---	---	910	---	290	180	19	137	93	---	---	---	SPL
MW-2	04/24/1996	8.56	4.95	---	3.61	ND<500	---	70	22	ND<10	61	ND<50	---	---	7.0	SPL
QC-1 (e)	04/24/1996	---	---	---	---	ND<500	---	100	30	ND<10	71	ND<100	---	---	---	SPL
MW-2	07/15/1996	8.56	5.40	---	3.16	---	---	---	---	---	---	---	---	---	---	---
MW-2	07/16/1996	8.56	---	---	---	12000	---	3300	1400	250	2610	1400	---	---	7.8	SPL
MW-2	07/30/1996	8.56	5.44	---	3.12	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/04/1996	8.56	7.06	---	1.50	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/05/1996	8.56	---	---	---	7200	---	1400	230	38	2110	1100	---	---	7.4	SPL
QC-1 (e)	11/05/1996	---	---	---	---	9200	---	1300	170	ND<25	2240	1100	---	---	---	SPL
MW-2	05/17/1997	8.56	5.77	---	2.79	570	---	42	ND<5.0	5.0	60	210	---	---	6.9	SPL
MW-2	08/11/1997	8.56	5.71	---	2.85	6300	---	1800	130	86	397	2400	---	---	8.5	SPL
MW-2	11/17/1997	8.56	6.91	---	1.65	2400	---	220	30	33	259	130	---	---	7.9	SPL
MW-2	01/29/1998	8.56	4.61	---	3.95	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	6.2	SPL
MW-2	06/22/1998	8.56	4.80	---	3.76	4200	---	640	150	120	650	560	---	---	5.4	SPL
MW-2	12/30/1998	8.56	5.21	---	3.35	---	---	---	---	---	---	---	---	---	---	---
MW-2	06/23/1999	8.56	5.30	---	3.26	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/23/1999	8.56	4.75	---	3.81	3800	---	760	19	210	960	910	---	---	---	SPL
MW-2	12/28/1999	8.56	4.51	---	4.05	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/22/2000	8.56	4.21	---	4.35	2500	---	780	17	44	270	2800	---	---	---	PACE
MW-2	05/26/2000	8.56	4.66	---	3.90	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/06/2000	8.56	4.71	---	3.85	3700	---	1200	5.5	12	170	12000	---	---	---	PACE
MW-2	09/15/2000	8.56	4.74	---	3.82	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/11/2000	8.56	4.79	---	3.77	---	---	---	---	---	---	---	---	---	---	---
MW-2 (h)	03/29/2001	8.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---



**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
MW-2 (j)	06/27/2001	8.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2 (j)	09/19/2001	8.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2 (j)	12/28/2001	8.56	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/12/2002	8.56	4.25	---	4.31	26000	---	1160	4.39	61.1	171	37300	---	---	---	PACE
MW-2	6/13/2002*	8.56	4.94	---	3.62	18000	---	578	ND<50	ND<50	ND<100	84600	---	---	---	PACE
MW-2	09/06/2002	8.56	5.23	---	3.33	26000	---	440	ND<50	ND<50	ND<50	45000	---	---	---	SEQ
MW-2 (o)	12/13/2002	8.56	4.94	---	3.62	69000	---	1200	ND<500	ND<500	ND<500	98000	---	---	---	SEQ
MW-2 (p)	02/19/2003	8.56	4.14	---	4.42	78000	---	1100	ND<500	ND<500	ND<500	81000	---	---	---	SEQ
MW-2	06/06/2003	8.56	4.66	---	3.90	120000	---	1100	ND<1000	ND<1000	ND<1000	72000	---	---	---	SEQ

**Table I**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (a) (Feet)	DTW (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
MW-3	11/04/1992	8.25	6.38	---	1.87	200	690	1.6	ND<0.5	ND<0.5	1.1	---	(k) ND<5000	ND	---	PACE
MW-3	10/12/1993	8.25	5.84	---	2.41	270	2100	5.0	0.7	ND<0.5	2.6	96.3	(k) ND<5000	ND	---	PACE
QC-1 (e)	10/12/1993	---	---	---	---	150	---	5.6	0.6	ND<0.5	1.6	---	---	---	---	PACE
MW-3	02/15/1994	8.25	6.60	---	1.65	140	2.3	5.7	ND<0.5	ND<0.5	ND<0.5	30.1	(k) 90	ND	3.9	PACE
MW-3	05/11/1994	8.25	5.86	---	2.39	190	2500	2.7	1.9	ND<0.5	1.9	51	(d)(k)ND<5000	ND	9.2	PACE
MW-3	08/01/1994	8.25	6.13	---	2.12	120	1300	1.3	ND<0.5	0.5	1.1	17.6	(k) ND<5000	ND	2.9	PACE
MW-3	10/18/1994	8.25	6.39	---	1.86	100	2200	2.3	ND<0.5	ND<0.5	ND<0.5	21	(k) ND<5000	ND	3.6	PACE
MW-3	01/13/1995	8.25	5.47	---	2.78	ND<50	970	0.8	ND<0.5	ND<0.5	ND<1	---	---	ND	7.7	ATI
MW-3	04/13/1995	8.25	5.17	---	3.08	530	ND<500	8.7	1.9	ND<0.5	3.9	---	2100	ND	8.4	ATI
MW-3	07/11/1995	8.25	5.37	---	2.88	78	2100	0.57	ND<0.50	ND<0.50	ND<1.0	---	1900	ND	8.3	ATI
MW-3	11/02/1995	8.25	6.29	---	1.96	250	2000	0.73	ND<0.50	ND<0.50	1.8	270	1400	ND	8.3	ATI
MW-3	02/05/1996	8.25	5.80	---	2.45	ND<50	1600	ND<0.5	ND<1	ND<1	2.7	11	9000	ND	3.5	SPL
MW-3	04/24/1996	8.25	5.69	---	2.56	ND<50	2800	ND<5	ND<10	ND<10	ND<10	150	6000	ND	8.6	SPL
MW-3	07/15/1996	8.25	6.18	---	2.07	ND<250	3700	ND<2.5	ND<5	ND<5	ND<5	ND<50	1000	ND	7.7	SPL
MW-3	07/30/1996	8.25	6.04	---	2.21	---	---	---	---	---	---	---	---	---	---	---
MW-3	11/04/1996	8.25	7.84	---	0.41	---	---	---	---	---	---	---	---	---	---	---
MW-3	11/05/1996	8.25	---	---	---	90	890	ND<0.5	ND<1.0	ND<1.0	ND<1.0	30	2000	ND	6.8	SPL
MW-3	05/17/1997	8.25	6.49	---	1.76	ND<50	2100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	52	700	ND	6.3	SPL
MW-3	08/11/1997	8.25	6.15	---	2.10	490	1900	ND<2.5	ND<5.0	ND<5.0	ND<5.0	170	ND<5000	ND	7.4	SPL
MW-3	11/17/1997	8.25	7.15	---	1.10	120	2500	ND<0.5	ND<1.0	ND<1.0	ND<1.0	46	ND<5000	ND	7.0	SPL
MW-3	01/29/1998	8.25	5.10	---	3.15	270	1700	0.53	ND<1.0	ND<1.0	ND<1.0	330	2000	ND	6.4	SPL
MW-3	06/22/1998	8.25	5.50	---	2.75	200	2200	ND<0.5	ND<1.0	ND<1.0	ND<1.0	130	ND<5	ND	5.5	SPL
MW-3	12/30/1998	8.25	6.68	---	1.57	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/09/1999	8.25	5.53	---	2.72	60	840	ND<1.0	ND<1.0	ND<1.0	ND<1.0	19	7600	---	---	SPL
MW-3	06/23/1999	8.25	6.60	---	1.65	---	---	---	---	---	---	---	---	---	---	---
MW-3	09/23/1999	8.25	6.17	---	2.08	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/28/1999	8.25	6.00	---	2.25	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/22/2000	8.25	4.77	---	3.48	690	ND<58	4.2	3.1	0.81	2.7	2900	13000	---	---	PACE
MW-3	05/26/2000	8.25	5.28	---	2.97	---	---	---	---	---	---	---	---	---	---	---
MW-3	09/15/2000	8.25	5.58	---	2.67	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/11/2000	8.25	11.74	---	-3.49 (i)	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/29/2001	8.25	5.04	---	3.21	650	ND<50	ND<2.5	ND<2.5	ND<2.5	ND<7.5	680	6540	---	---	PACE
MW-3	06/27/2001	8.25	5.62	---	2.63	460	690	ND<2.5	ND<2.5	ND<2.5	ND<7.5	560	ND<5000	---	---	PACE
MW-3	09/19/2001	8.25	5.80	---	2.45	ND<500	520	ND<5.0	ND<5.0	ND<5.0	ND<15	464	ND<5000	---	---	PACE
MW-3	12/28/2001	8.25	4.85	---	3.40	180	550	ND<0.5	ND<0.5	ND<0.5	ND<1.0	180	ND<5000	---	---	PACE
MW-3	03/12/2002	8.25	4.39	---	3.86	410	1300	ND<2.5	ND<2.5	ND<2.5	ND<5.0	443	ND<5000	---	---	PACE
MW-3	6/13/2002*	8.25	5.38	---	2.87	ND<250	2600	ND<2.5	ND<2.5	ND<2.5	ND<5.0	395	ND<5000	---	---	PACE
MW-3	09/06/2002	8.25	5.68	---	2.57	ND<200	---	ND<2.0	ND<2.0	ND<2.0	ND<2.0	650	---	---	---	SEQ
MW-3 (o)	12/13/2002	8.25	5.37	---	2.88	ND<50	980	ND<0.5	ND<0.5	ND<0.5	ND<0.5	60	7000	---	---	SEQ
MW-3 (p)	02/19/2003	8.25	4.80	---	3.45	ND<1000	380	ND<10	ND<10	ND<10	ND<10	120	6700	---	---	SEQ
MW-3	06/06/2003	8.25	5.13	---	3.12	ND<500	620	ND<5.0	ND<5.0	ND<5.0	ND<5.0	180	7.9	---	---	SEQ

**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (a) (Feet)	DTW (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOC (ug/L)	HVOC (ug/L)	DO (ppm)	LAB	
MW-4	11/04/1992	8.12	6.66	---	1.46	340	---	4.5	ND<0.5	4.3	ND<0.5	---	(k)	---	---	---	PACE
MW-4	10/12/1993	8.12	6.87	---	1.25	160	---	5.8	1.4	0.8	2.7	261	(k)	---	---	---	PACE
MW-4	02/15/1994	8.12	6.61	---	1.51	110	---	4.4	0.7	ND<0.5	2.5	118	(d)(k)	---	---	4.3	PACE
MW-4	05/11/1994	8.12	5.89	---	2.23	120	---	0.5	0.8	ND<0.5	ND<0.5	137	(d)(k)	---	---	9.3	PACE
MW-4	08/01/1994	8.12	6.87	---	1.25	140	---	0.7	2.0	5.2	15	138	(k)	---	---	3.3	PACE
MW-4	10/18/1994	8.12	6.62	---	1.50	140	---	3.5	ND<0.5	0.5	ND<0.5	197	(k)	---	---	3.0	PACE
MW-4	01/13/1995	8.12	7.27	---	0.85	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	7.9	ATI
MW-4	04/13/1995	8.12	6.51	---	1.61	73	---	1.2	ND<0.5	ND<0.5	ND<1	---	---	---	---	9.9	ATI
MW-4	07/11/1995	8.12	6.21	---	1.91	82	---	0.57	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	7.2	ATI
MW-4	11/02/1995	8.12	6.78	---	1.34	71	---	1.4	0.96	0.99	2.8	140	---	---	---	8.6	ATI
MW-4	02/05/1996	8.12	6.41	---	1.71	ND<50	---	ND<5	ND<10	ND<10	ND<10	200	---	---	---	4.4	SPL
MW-4	04/24/1996	8.12	6.18	---	1.94	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	510	---	---	---	8.3	SPL
MW-4	07/15/1996	8.12	6.63	---	1.49	ND<50	---	5.7	ND<1	ND<1	ND<1	550	---	---	---	7.4	SPL
MW-4	07/30/1996	8.12	6.34	---	1.78	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	11/04/1996	8.12	8.27	---	-0.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	11/05/1996	8.12	---	---	---	460	---	ND<2.5	11	ND<5.0	ND<5.0	620/610	(f)	---	---	7.3	SPL
MW-4	05/17/1997	8.12	7.00	---	1.12	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	08/11/1997	8.12	6.81	---	1.31	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	11/17/1997	8.12	9.19	---	-1.07	840	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	880	---	---	---	7.3	SPL
MW-4	01/29/1998	8.12	7.94	---	0.18	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	06/22/1998	8.12	7.49	---	0.63	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/30/1998	8.12	8.21	---	-0.09	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	03/09/1999	8.12	7.70	---	0.42	1200	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	2000	---	---	---	---	SPL
MW-4	06/23/1999	8.12	8.81	---	-0.69	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	09/23/1999	8.12	8.32	---	-0.20	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/28/1999	8.12	8.21	---	-0.09	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	03/22/2000	8.12	6.74	---	1.38	910	---	ND<0.5	ND<0.5	0.54	1.7	3800	---	---	---	---	PACE
MW-4	05/26/2000	8.12	5.13	---	2.99	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	09/15/2000	8.12	8.20	---	-0.08	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/11/2000	8.12	8.31	---	-0.19	---	---	---	---	---	---	---	---	---	---	---	---
MW-4 (h)	03/29/2001	8.12	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	06/27/2001	8.12	7.57	---	0.55	2800	---	18.9	ND<2.5	ND<2.5	ND<7.5	4220	---	---	---	---	PACE
MW-4	09/19/2001	8.12	7.87	---	0.25	2500	---	ND<5.0	ND<5.0	ND<5.0	ND<15	3340	---	---	---	---	PACE
MW-4	12/28/2001	8.12	7.80	---	0.32	4400	---	ND<5.0	ND<5.0	ND<5.0	ND<10	5330	---	---	---	---	PACE
MW-4	03/12/2002	8.12	4.53	---	3.59	6400	---	71.5	ND<5.0	ND<5.0	ND<10	8440	---	---	---	---	PACE
MW-4	6/13/2002*	8.12	6.21	---	1.91	1800	---	7.5	ND<5.0	5.03	13.1	6870	---	---	---	---	PACE
MW-4	09/06/2002	8.12	7.78	---	0.34	ND<2000	---	ND<20	ND<20	ND<20	ND<20	9600	---	---	---	---	SEQ
MW-4 (o)	12/13/2002	8.12	7.87	---	0.25	5600	---	ND<50	ND<50	ND<50	ND<50	8600	---	---	---	---	SEQ
MW-4 (p)	02/19/2003	8.12	4.84	---	3.28	ND<10000	---	ND<100	ND<100	ND<100	ND<100	8000	---	---	---	---	SEQ
MW-4	06/06/2003	8.12	7.98	---	0.14	13000	---	ND<50	ND<50	ND<50	ND<50	6800	---	---	---	---	SEQ

**Table 1**  
**Groundwater Elevation and Analytical Data**  
 Former BP Service Station #11126  
 1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOC (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
MW-5	10/12/1993	7.69	6.01	---	1.68	---	---	---	---	---	---	---	(k)	---	---	PACE
MW-5	10/13/1993	7.69	---	---	---	2300	---	160	10	ND<0.5	26	---	(k)	---	---	PACE
MW-5	02/15/1994	7.69	5.74	---	1.95	5100	---	710	16	33	35	153	(d)(k)	---	4.0	PACE
MW-5	05/11/1994	7.69	5.28	---	2.41	11000	---	1100	39	110	57	165	(d)(k)	---	8.0	PACE
MW-5	08/01/1994	7.69	5.84	---	1.85	9000	---	730	35	61	41	196	(d)(k)	---	2.6	PACE
MW-5	10/18/1994	7.69	6.01	---	1.68	7800	---	330	30	27	27	559	(k)	---	5.6	PACE
MW-5	01/13/1995	7.69	4.74	---	2.95	ND<500	---	290	6	ND<5	18	---	---	---	6.8	ATI
MW-5	04/13/1995	7.69	5.50	---	2.19	9100	---	400	15	52	27	---	---	---	7.4	ATI
MW-5	07/11/1995	7.69	5.75	---	1.94	7300	---	390	13	28	23	---	---	---	7.2	ATI
MW-5	11/03/1995	7.69	6.65	---	1.04	7200	---	270	15	38	23	200	---	---	8.4	ATI
MW-5	02/05/1996	7.69	4.83	---	2.86	4600	---	370	15	53	28	ND<50	---	---	1.9	SPL
MW-5	04/24/1996	7.69	6.09	---	1.60	3000	---	180	ND<10	32	14	ND<100	---	---	8.1	SPL
MW-5	07/15/1996	7.69	6.57	---	1.12	---	---	---	---	---	---	---	---	---	---	---
MW-5	07/16/1996	7.69	---	---	---	ND<50	---	190	ND<10	31	16	ND<100	---	---	8.3	SPL
MW-5	07/30/1996	7.69	5.61	---	2.08	---	---	---	---	---	---	---	---	---	---	---
MW-5	08/12/1996	7.69	---	---	---	2000	---	150	12	25	18.2	ND<50	---	---	7.6	SPL
MW-5	11/04/1996	7.69	8.25	---	-0.56	---	---	---	---	---	---	---	---	---	---	---
MW-5	11/05/1996	7.69	---	---	---	5200	---	42	5.5	13	ND<5.0	1700	---	---	7.4	SPL
MW-5	05/17/1997	7.69	6.95	---	0.74	80	---	0.56	ND<1.0	ND<1.0	ND<1.0	46	---	---	6.7	SPL
MW-5	08/11/1997	7.69	6.72	---	0.97	2700	---	20	12	6.7	9.7	1900	---	---	8.5	SPL
MW-5	11/17/1997	7.69	9.49	---	-1.80	8400	---	25	12	8.7	5.4	13000	---	---	7.9	SPL
MW-5	01/29/1998	7.69	7.88	---	-0.19	110000	---	2500	110	180	589	180000	---	---	6.8	SPL
MW-5	06/22/1998	7.69	7.40	---	0.29	4400	---	47	10	29	20.5	47	---	---	6.6	SPL
MW-5	12/30/1998	7.69	6.13	---	1.56	6000	---	18	9.1	22	16	63/44	(f)	---	---	SPL
MW-5	03/09/1999	7.69	4.79	---	2.90	4600	---	8.8	5.5	12	11	24	---	---	---	SPL
MW-5	06/23/1999	7.69	5.95	---	1.74	3400	---	1500	8.9	54	87	7500	---	---	---	SPL
MW-5	09/23/1999	7.69	5.43	---	2.26	2600	---	510	14	140	650	580	---	---	---	SPL
MW-5	12/28/1999	7.69	5.30	---	2.39	3500	---	900	18	57	140	4800	---	---	---	PACE
MW-5 (h)	03/22/2000	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (h)	05/26/2000	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (h)	09/06/2000	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (h)	09/15/2000	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (h)	12/11/2000	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (h)	03/29/2001	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (j)	06/27/2001	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5 (j)	09/19/2001	7.69	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/28/2001	7.69	4.65	---	3.04	4600	---	19.9	24.6	16.2	57	72.3	---	---	---	PACE
MW-5	03/12/2002	7.69	5.35	---	2.34	5100	---	45.4	13.7	22	38.9	31.6	---	---	---	PACE
MW-5	06/13/2002	7.69	5.34	---	2.35	2900	---	31.8	ND<12.5	ND<12.5	ND<25	616	---	---	---	PACE
MW-5	09/06/2002	7.69	5.46	---	2.23	3400	---	23	5.5	ND<5.0	11	230	---	---	---	SEQ
MW-5 (o)	12/13/2002	7.69	5.47	---	2.22	2500	---	12	9.3	4.6	8.8	110	---	---	---	SEQ
MW-5 (p)	02/19/2003	7.69	5.29	---	2.40	2800	---	11	5.4	9.7	12	6.4	---	---	---	SEQ
MW-5	06/06/2003	7.69	5.30	---	2.39	3200	---	9.1	ND<5.0	7.6	9.3	ND<5.0	---	---	---	SEQ

**Table I**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB	
MW-6	10/12/1993	8.52	6.59	---	1.93	63	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	44.4	(k)	---	---	---	PACE
MW-6	02/15/1994	8.52	6.31	---	2.21	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	38.1	(d)(k)	---	---	3.1	PACE
MW-6	05/11/1994	8.52	6.15	---	2.37	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	48.5	(d)(k)	---	---	8.7	PACE
MW-6	08/01/1994	8.52	6.46	---	2.06	91	---	ND<0.5	ND<0.5	ND<0.5	0.6	59.6	(k)	---	---	2.4	PACE
MW-6	10/18/1994	8.52	6.72	---	1.80	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	84.6	(k)	---	---	6.0	PACE
MW-6	01/13/1995	8.52	5.95	---	2.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	7.0	ATI
MW-6	04/13/1995	8.52	5.44	---	3.08	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	8.5	ATI
MW-6	07/11/1995	8.52	5.68	---	2.84	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	8.4	ATI
MW-6	11/02/1995	8.52	6.57	---	1.95	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	35	---	---	---	8.3	ATI
MW-6	02/05/1996	8.52	6.27	---	2.25	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100	---	---	---	2.2	SPL
MW-6	04/24/1996	8.52	5.95	---	2.57	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	62	---	---	---	8.0	SPL
MW-6	07/15/1996	8.52	6.39	---	2.13	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50	---	---	---	8.0	SPL
MW-6	07/30/1996	8.52	6.44	---	2.08	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	11/04/1996	8.52	8.05	---	0.47	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	11/05/1996	8.52	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.3	SPL
MW-6	05/17/1997	8.52	6.75	---	1.77	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	08/11/1997	8.52	6.48	---	2.04	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	11/17/1997	8.52	9.27	---	-0.75	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.7	SPL
MW-6	01/29/1998	8.52	7.98	---	0.54	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	06/22/1998	8.52	7.68	---	0.84	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	12/30/1998	8.52	6.98	---	1.54	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	03/09/1999	8.52	5.90	---	2.62	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	06/23/1999	8.52	6.93	---	1.59	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	09/23/1999	8.52	6.45	---	2.07	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	12/28/1999	8.52	6.33	---	2.19	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	03/22/2000	8.52	5.15	---	3.37	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	05/26/2000	8.52	5.72	---	2.80	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	09/15/2000	8.52	6.02	---	2.50	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	12/11/2000	8.52	6.20	---	2.32	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	03/29/2001	8.52	5.34	---	3.18	750	---	ND<2.5	2.91	ND<2.5	11.8	820	---	---	---	---	PACE
MW-6	06/27/2001	8.52	6.00	---	2.52	760	---	32.9	ND<2.5	ND<2.5	ND<7.5	968	---	---	---	---	PACE
MW-6	09/19/2001	8.52	6.22	---	2.30	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<15	879	---	---	---	---	PACE
MW-6 (n)	12/28/2001	8.52	4.71	---	3.81	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	03/12/2002	8.52	4.96	---	3.56	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<10	244	---	---	---	---	PACE
MW-6	6/13/2002*	8.52	5.78	---	2.74	ND<250	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	413	---	---	---	---	PACE
MW-6	09/06/2002	8.52	6.14	---	2.38	130	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	240	---	---	---	---	SEQ
MW-6 (o)	12/13/2002	8.52	6.05	---	2.47	140	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	200	---	---	---	---	SEQ
MW-6 (p)	02/19/2003	8.52	5.40	---	3.12	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	150	---	---	---	---	SEQ
MW-6	06/06/2003	8.52	5.54	---	2.98	1100	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	140	---	---	---	---	SEQ

**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB	
MW-7	10/12/1993	7.61	6.14	---	1.47	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.7	ND<5.0	(k)	---	---	---	PACE
MW-7	02/15/1994	7.61	5.88	---	1.73	78	---	ND<0.5	ND<0.5	ND<0.5	0.6	ND<5.0	(k)	---	---	4.0	PACE
MW-7	05/11/1994	7.61	5.76	---	1.85	70	---	ND<0.5	ND<0.5	ND<0.5	0.9	11.5	(k)	---	---	9.1	PACE
MW-7	08/01/1994	7.61	5.97	---	1.64	77	---	ND<0.5	ND<0.5	ND<0.5	0.5	182	(k)	---	---	2.5	PACE
MW-7	10/18/1994	7.61	6.24	---	1.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	51.7	(k)	---	---	6.3	PACE
MW-7	01/13/1995	7.61	5.39	---	2.22	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	8.2	ATI
MW-7	04/13/1995	7.61	5.17	---	2.44	63	---	ND<0.5	ND<0.5	ND<0.5	1.4	---	---	---	---	8.4	ATI
MW-7	07/11/1995	7.61	5.25	---	2.36	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	7.9	ATI
MW-7	11/02/1995	7.61	6.19	---	1.42	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	55	---	---	---	8.0	ATI
MW-7	02/05/1996	7.61	5.69	---	1.92	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	40	---	---	---	1.9	SPL
MW-7	04/24/1996	7.61	5.59	---	2.02	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	53	---	---	---	8.2	SPL
MW-7	07/15/1996	7.61	6.07	---	1.54	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50	---	---	---	7.8	SPL
MW-7	07/30/1996	7.61	6.04	---	1.57	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/04/1996	7.61	7.76	---	-0.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/05/1996	7.61	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.8	SPL
MW-7	05/17/1997	7.61	6.42	---	1.19	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	08/11/1997	7.61	6.06	---	1.55	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/17/1997	7.61	9.07	---	-1.46	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.1	SPL
MW-7	01/29/1998	7.61	7.44	---	0.17	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	06/22/1998	7.61	7.39	---	0.22	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	12/30/1998	7.61	5.51	---	2.10	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	03/09/1999	7.61	5.57	---	2.04	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	06/23/1999	7.61	6.69	---	0.92	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	09/23/1999	7.61	6.23	---	1.38	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	12/28/1999	7.61	6.08	---	1.53	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	03/22/2000	7.61	4.88	---	2.73	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	05/26/2000	7.61	5.42	---	2.19	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	09/15/2000	7.61	5.79	---	1.82	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	12/11/2000	7.61	5.93	---	1.68	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	03/29/2001	7.61	5.24	---	2.37	600	---	ND<2.5	ND<2.5	ND<2.5	ND<7.5	636	---	---	---	---	PACE
MW-7	06/27/2001	7.61	5.69	---	1.92	590	---	ND<2.5	ND<2.5	ND<2.5	ND<7.5	739	---	---	---	---	PACE
MW-7	09/19/2001	7.61	5.89	---	1.72	560	---	ND<5.0	ND<5.0	ND<5.0	ND<15	1190	---	---	---	---	PACE
MW-7	12/28/2001	7.61	4.53	---	3.08	910	---	22.7	ND<2.5	ND<2.5	ND<5.0	856	---	---	---	---	PACE
MW-7	03/12/2002	7.61	4.71	---	2.90	620	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	675	---	---	---	---	PACE
MW-7	6/13/2002*	7.61	5.21	---	2.40	860	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	1470	---	---	---	---	PACE
MW-7	09/06/2002	7.61	5.77	---	1.84	350	---	ND<2.5	ND<2.5	ND<2.5	ND<2.5	690	---	---	---	---	SEQ
MW-7 (o)	12/13/2002	7.61	5.65	---	1.96	1300	---	ND<10	ND<10	ND<10	ND<10	1800	---	---	---	---	SEQ
MW-7 (p)	02/19/2003	7.61	5.07	---	2.54	1700	---	ND<10	ND<10	ND<10	ND<10	1600	---	---	---	---	SEQ
MW-7	06/06/2003	7.61	5.27	---	2.34	1000	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	510	---	---	---	---	SEQ

**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB	
MW-8	10/12/1993	8.60	5.86	---	2.74	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	11.1	(k)	---	---	---	PACE
MW-8	02/15/1994	8.60	5.50	---	3.10	380	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	(k)	---	---	3.3	PACE
MW-8	05/11/1994	8.60	5.09	---	3.51	330	---	ND<0.5	1.2	ND<0.5	1.9	ND<5.0	(k)	---	---	8.5	PACE
MW-8	08/01/1994	8.60	5.20	---	3.40	260	---	ND<0.5	1.2	2.9	5.8	ND<5.0	(k)	---	---	2.3	PACE
MW-8	10/18/1994	8.60	5.70	---	2.90	82	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	(k)	---	---	6.4	PACE
MW-8	01/13/1995	8.60	4.96	---	3.64	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	6.9	ATI
MW-8	04/13/1995	8.60	5.40	---	3.20	270	---	ND<0.5	ND<0.5	ND<0.5	4.4	---	---	---	---	8.4	ATI
MW-8	07/11/1995	8.60	6.01	---	2.59	320	---	ND<0.50	ND<0.50	ND<0.50	3.5	---	---	---	---	8.0	ATI
MW-8	11/02/1995	8.60	6.81	---	1.79	100	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	8.7	ATI
MW-8	02/05/1996	8.60	6.12	---	2.48	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100	---	---	---	1.5	SPL
MW-8	04/24/1996	8.60	6.23	---	2.37	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100	---	---	---	8.7	SPL
MW-8	07/15/1996	8.60	6.70	---	1.90	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50	---	---	---	8.4	SPL
MW-8	07/30/1996	8.60	6.64	---	1.96	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/04/1996	8.60	8.36	---	0.24	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/05/1996	8.60	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.2	SPL
MW-8	05/17/1997	8.60	7.03	---	1.57	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	08/11/1997	8.60	6.05	---	2.55	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/17/1997	8.60	9.14	---	-0.54	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	7.7	SPL
MW-8	01/29/1998	8.60	7.90	---	0.70	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/22/1998	8.60	7.72	---	0.88	---	---	---	---	---	---	---	---	---	---	---	---
MW-8 (h)	12/30/1998	8.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8 (h)	03/09/1999	8.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/23/1999	8.60	4.70	---	3.90	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	09/23/1999	8.60	4.22	---	4.38	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/28/1999	8.60	4.12	---	4.48	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	03/22/2000	8.60	4.71	---	3.89	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	05/26/2000	8.60	4.98	---	3.62	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	09/15/2000	8.60	4.62	---	3.98	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/11/2000	8.60	4.77	---	3.83	---	---	---	---	---	---	---	---	---	---	---	---
MW-8 (h)	03/29/2001	8.60	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/27/2001	8.60	5.11	---	3.49	570	---	ND<2.5	ND<2.5	2.58	ND<7.5	3.43	---	---	---	---	PACE
MW-8	09/19/2001	8.60	5.09	---	3.60	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<15	ND<5.0	---	---	---	---	PACE
MW-8	12/28/2001	8.60	4.15	---	4.45	440	---	ND<0.5	ND<0.5	0.975	ND<1.0	6.27	---	---	---	---	PACE
MW-8	03/12/2002	8.60	4.35	---	4.25	330	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	8.69	---	---	---	---	PACE
MW-8	6/13/2002*	8.60	5.09	---	3.51	ND<500	---	ND<5.0	ND<5.0	ND<5.0	ND<10	16.4	---	---	---	---	PACE
MW-8	09/06/2002	8.60	5.18	---	3.42	98	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	76	---	---	---	---	SEQ
MW-8 (o)	12/13/2002	8.60	4.84	---	3.76	120	---	ND<0.5	ND<0.5	0.94	0.52	140	---	---	---	---	SEQ
MW-8 (p)	02/19/2003	8.60	4.45	---	4.15	ND<2500	---	ND<25	ND<25	ND<25	ND<25	800	---	---	---	---	SEQ
MW-8	06/06/2003	8.60	5.00	---	3.60	ND<50000	---	ND<500	ND<500	ND<500	ND<500	17000	---	---	---	---	SEQ

**Table I**  
**Groundwater Elevation and Analytical Data**  
 Former BP Service Station #11126  
 1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
MW-9	10/12/1993	8.08	5.66	0.08	2.48	---	---	---	---	---	---	---	---	---	---	---
MW-9	02/15/1994	8.08	5.32	0.05	2.80	---	---	---	---	---	---	---	---	---	---	---
MW-9	05/11/1994	8.08	5.57	---	2.51	---	---	---	---	---	---	---	---	---	---	---
MW-9	08/01/1994	8.08	6.25	---	1.83	---	---	---	---	---	---	---	---	---	---	---
MW-9	10/18/1994	8.08	5.59	0.13	2.59	---	---	---	---	---	---	---	---	---	---	---
MW-9	01/13/1995	8.08	4.42	0.14	3.77	---	---	---	---	---	---	---	---	---	---	---
MW-9	04/13/1995	8.08	4.06	0.11	4.10	---	---	---	---	---	---	---	---	---	---	---
MW-9	07/11/1995	8.08	4.21	0.08	3.93	---	---	---	---	---	---	---	---	---	---	---
MW-9	11/02/1995	8.08	5.22	0.05	2.90	---	---	---	---	---	---	---	---	---	---	---
MW-9	02/05/1996	8.08	4.76	0.01	3.33	---	---	---	---	---	---	---	---	---	---	---
MW-9	04/24/1996	8.08	4.62	0.09	3.53	---	---	---	---	---	---	---	---	---	---	---
MW-9	07/15/1996	8.08	5.11	0.04	3.00	---	---	---	---	---	---	---	---	---	---	---
MW-9	07/30/1996	8.08	5.15	---	2.93	---	---	---	---	---	---	---	---	---	---	---
MW-9	11/04/1996	8.08	6.75	0.01	1.34	---	---	---	---	---	---	---	---	---	---	---
MW-9	05/17/1997	8.08	5.42	---	2.66	97000	---	16000	7700	2300	18400	40000	---	---	7.0	SPL
QC-1 (e)	05/17/1997	---	---	---	---	97000	---	16000	8200	2300	17300	39000	---	---	---	SPL
MW-9	08/11/1997	8.08	5.37	---	2.71	71000	---	12000	340	2100	4300	26000	---	---	9.1	SPL
QC-1 (e)	08/11/1997	---	---	---	---	100000	---	14000	360	3200	5790	27000	---	---	---	SPL
MW-9	11/17/1997	8.08	5.62	Sheen	2.46	100000	---	22000	4800	3100	17900	32000	---	---	8.3	SPL
QC-1 (e)	11/17/1997	---	---	---	---	100000	---	24000	5300	3500	19300	35000	---	---	---	SPL
MW-9	01/29/1998	8.08	4.07	Sheen	4.01	250000	---	20000	21000	3100	18500	110000	---	---	6.6	SPL
QC-1 (e)	01/29/1998	---	---	---	---	250000	---	20000	20000	3100	18400	110000	---	---	---	SPL
MW-9	06/22/1998	8.08	4.28	---	3.80	280000	---	21000	18000	3800	21200	110000	---	---	5.8	SPL
QC-1 (e)	06/22/1998	---	---	---	---	290000	---	20000	17000	3800	21200	110000	---	---	---	SPL
MW-9	12/30/1998	8.08	4.95	---	3.13	150000	---	10000	3800	2000	9600	86000/89000 (f)	---	---	---	SPL
MW-9	03/09/1999	8.08	3.95	---	4.13	82000	---	6800	570	1400	4700	100000	---	---	---	SPL
MW-9	06/23/1999	8.08	5.12	---	2.96	41000	---	11000	820	2300	5200	92000	---	---	---	SPL
MW-9	09/23/1999	8.08	4.74	---	3.34	57000	---	12000	5400	1900	9500	89000	---	---	---	SPL
MW-9	12/28/1999	8.08	4.58	---	3.50	46000	---	15000	490	2500	3500	100000	---	---	---	PACE
MW-9	03/22/2000	8.08	3.90	---	4.18	86000	---	18000	1800	2300	6800	120000	---	---	---	PACE
MW-9	05/26/2000	8.08	4.15	---	3.93	82000	---	17000	680	1800	3800	100000	---	---	---	PACE
MW-9	09/06/2000	8.08	4.47	---	3.61	100000	---	19000	280	2400	6400	84000	---	---	---	PACE
MW-9	09/15/2000	8.08	4.34	---	3.74	---	---	---	---	---	---	---	---	---	---	---
MW-9	12/11/2000	8.08	4.41	---	3.67	110000	---	14400	768	2610	6670	123000	---	---	---	PACE
MW-9 (h)	03/29/2001	8.08	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-9 (m)	06/26/2001	8.08	5.03	0.13	3.15 (l)	---	---	---	---	---	---	---	---	---	---	---
MW-9 (m)	09/19/2001	8.08	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-9	12/28/2001	8.08	3.73	---	4.35	110000	---	15000	1500	2280	5530	60900	---	---	---	PACE
MW-9	03/12/2002	8.08	4.93	---	3.15	88000	---	12500	2600	2800	8950	44000	---	---	---	PACE
MW-9	6/13/2002*	8.08	4.13	---	3.95	59000	---	9870	161	2560	5560	35600	---	---	---	PACE
MW-9	09/06/2002	8.08	4.39	---	3.69	47000	---	10000	ND<100	2100	4600	31000	---	---	---	SEQ
MW-9 (o)	12/13/2002	8.08	3.97	---	4.11	57000	---	11000	1000	2300	5800	28000	---	---	---	SEQ
MW-9 (p)	02/19/2003	8.08	3.25	---	4.83	76000	---	10000	2100	3000	8900	11000	---	---	---	SEQ
MW-9	06/06/2003	8.08	3.94	---	4.14	66000	---	9000	ND<500	2500	4400	17000	---	---	---	SEQ



**Table 1**  
**Groundwater Elevation and Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

WELL ID	DATE OF SAMPLING/ MONITORING	TOC (Feet)	DTW (a) (Feet)	PRODUCT THICKNESS (Feet)	GWE (b) (Feet)	TPH-G (ug/L)	TPH-D (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	TOG (ug/L)	HVOC (ug/L)	DO (ppm)	LAB
QC-2 (g)	11/05/1992	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	10/12/1993	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	02/15/1994	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	05/11/1994	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	08/01/1994	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	10/18/1994	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	01/13/1995	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ATI
QC-2 (g)	04/13/1995	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	ATI
QC-2 (g)	07/11/1995	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (g)	11/02/1995	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2 (g)	02/05/1996	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (g)	04/24/1996	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (g)	07/16/1996	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL

## Table 1

### Groundwater Elevation and Analytical Data Former BP Service Station #11126 1700 Powell Street, Emeryville, CA

#### ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline  
TPH-D Total petroleum hydrocarbons as diesel  
B Benzene  
T Toluene  
E Ethylbenzene  
X Total xylenes  
MTBE Methyl tert butyl ether  
TOG Total oil and grease  
HVOC Halogenated volatile organic compounds  
DO Dissolved oxygen  
ug/L Micrograms per liter  
ppm Parts per million  
ND Not detected above reported detection limit  
— Not analyzed/applicable/measurable  
PACE Pace, Inc.  
ATI Analytical Technologies, Inc.  
SPL Southern Petroleum Laboratories  
SEQ Sequoia Analytical  
TOC Top of Casing  
DTW Depth to Water  
GWE Groundwater Elevation

#### NOTES:

- (a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 8.11 feet above mean sea level.
  - (b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.
  - (c) Detection limits vary; see laboratory report.
  - (d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-061-07-004.
  - (e) Blind duplicate.
  - (f) EPA Methods 8020/8260 used.
  - (g) Travel blank.
  - (h) Inaccessible.
  - (i) Depth to water anomalous; groundwater elevation not used in contouring.
  - (j) Well paved over.
  - (k) A copy of the documentation for this data can be found in Blaine Tech Services report 010627-Z-1. MTBE data for the November 4, 1992 sampling event has been destroyed. No chromatograms could be located for MTBE data from well MW-5, sampled on October 12, 1993.
  - (l) Groundwater elevation is an estimate.
  - (m) Not sampled due to nature of SPH.
  - (n) Unable to sample.
  - (o) EPA Methods 8015B / 8021B used.
  - (p) Beginning in the first quarter 2003, TPHg and VOCs analyzed by EPA Method 8260B.
- \* During the second quarter of 2002, URS Corporation assumed groundwater monitoring activities for BP.

Source: The data within this table collected prior to June 2002 was provided to URS by BP Group Environmental Management Company and their previous consultants. URS has not verified the accuracy of this information.

**Table 2**  
**Fuel Oxygenate Analytical Data**  
Former BP Service Station #11126  
1700 Powell Street, Emeryville, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
MW-1	06/06/03	ND<5,000	ND<1,000	1,400	ND<25	ND<25	ND<25
MW-2	06/06/03	ND<200,000	ND<40,000	72,000	ND<1,000	ND<1,000	1,300
MW-3	06/06/03	ND<1,000	ND<200	180	ND<5.0	ND<5.0	16
MW-4	06/06/03	ND<10,000	2,500	6,800	ND<50	ND<50	190
MW-5	06/06/03	ND<1,000	ND<200	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-6	06/06/03	ND<1,000	ND<200	140	ND<5.0	ND<5.0	21
MW-7	06/06/03	ND<1,000	ND<200	510	ND<5.0	ND<5.0	41
MW-8	06/06/03	ND<100,000	ND<20,000	17,000	ND<500	ND<500	ND<500
MW-9	06/06/03	ND<100,000	ND<20,000	17,000	ND<500	ND<500	ND<500

Note: All fuel oxygenate compounds analyzed using EPA Method 8260B  
TBA = tert-Butyl alcohol  
MTBE = Methyl tert-butyl ether  
DIPE = Di-isopropyl ether  
ETBE = Ethyl tert butyl ether  
TAME = tert-Amyl methyl ether  
µg/L = micrograms per liter  
ND< = Not detected at or above the laboratory detection limit.  
NA = Data not available, not analyzed, or not applicable.

**ATTACHMENT A**

**ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY  
ENVIRONMENTAL HEALTH SERVICES LETTER  
DATED APRIL 25, 2003**

Paul Supple  
Leonard Niess (Fax)

ALAMEDA COUNTY  
HEALTH CARE SERVICES



AGENCY  
DAVID J. KEARS, Agency Director

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

RO0000066

April 25, 2003

Mr. Scott Hooton  
BP Oil  
295 SW 41<sup>st</sup> St, Bldg 13, Ste N  
Renton, WA 98055-4931

Ms. Liz Sewell  
Conoco Philips  
76 Broadway  
Sacramento, CA 95219

RE: Migration Control at Former BP 11126, 1700 Powell St, Emeryville, CA

Dear Mr. Hooton and Ms. Sewell:

I have completed review of the case file for the above referenced site. I am very concerned with the high levels of petroleum hydrocarbons, including benzene and MTBE at and downgradient from your site. Presently, a maximum of 69,000 ppb TPHg, 11,000 ppb benzene and 28,000 ppb MTBE is detected in groundwater from well MW-9. MTBE concentrations are increasing in the most downgradient well, MW-7. The contaminant plume does not appear stable and continues to migrate offsite. The extent of the plume has not been delineated.

At this time, you must implement migration control to prevent continued creation of a dissolved contaminant plume. It is recommended that pump and treat be used to control migration of BTEX and MTBE. Please outline your proposal for migration control in an Interim Remediation Work Plan. The work plan is due within 45 days of the date of this letter, or by June 20, 2003. The work plan should include a proposal to delineate the extent of the plume, too.

If you have any questions, I can be reached at (510) 567-6762 or by email at [echu@co.alameda.ca.us](mailto:echu@co.alameda.ca.us).

eva chu  
Hazardous Materials Specialist

c: Donna Drogos

