

BP OIL

BP Oil Company
16400 Southcenter Parkway, Suite 301
Tukwila, Washington 98188
(206) 575-4077

February 18, 1993

STIP 3960

Juliett Shin

~~Ms. Susan Hugo~~

Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, CA 94621

RE: BP OIL FACILITY #11117
7210 Bancroft Avenue
Oakland, CA 94621

Dear Ms. Hugo:

Attached please find our PROPOSED WORKPLAN for the above referenced facility.

Please call me at (206) 394-5243 with questions regarding this submission.

Respectfully,

Scott T. Hooton

Scott T. Hooton
Environmental Resources Management

STH:jc ERM11117WP

cc: Mr. Rich Hiett, Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94612

Mr. Markus B. Niebanck, Hydro Environmental Tech., Inc., 2363 Mariner Square Drive, Suite 243, Alameda, Ca 94501

Mr. David Baker, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

Site file

507-11-300

February 15, 1993

9-029.1

Ms. Jennifer Eberle - Hazardous Materials Specialist
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

3 960
JTM

Re: BP Service Station No. 11117, 7210 Bancroft Avenue, Oakland, California

94605

Dear Ms. Eberle:

The purpose of this letter is to submit, on behalf of BP Oil Company, a proposed workplan for the next phase of subsurface investigation activities at the above-referenced site.

If you have any questions or require additional information, please feel free to call me at (510) 521-2684.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.


Scott D. Kellstedt
Project Manager

enclosure

cc: Mr. Scott Hooton - BP Oil Company, Tukwila, WA (w/o enclosure)
Mr. Rich Hiatt - RWQCB, Oakland, CA (w/enclosure)

WORKPLAN FOR PHASE II SUBSURFACE INVESTIGATION

**BP Service Station No. 11117
7210 Bancroft Avenue
Oakland, California**

Prepared for:

**BP OIL COMPANY
Southcenter Place Building, Suite 301
16400 Southcenter Parkway
Tukwila, WA 98188**

Prepared by:

**HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.
2363 Mariner Square Drive, Suite 243
Alameda, CA 94501
HETI Job. No. 9-029.1**

January 27, 1993

CERTIFICATION

This workplan was prepared under the supervision of a registered professional engineer. All statements, conclusions and recommendations are based solely upon field observations and analytical analyses performed by a state-certified laboratory related to work performed by Hydro-Environmental Technologies, Inc.

It is possible that variations in soil or ground water conditions exist beyond the points explored in past investigations. Also, site conditions are subject to change with time due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by Hydro-Environmental Technologies, Inc. has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

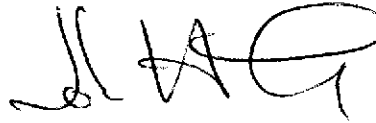
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Prepared by:



Scott D. Kellstedt
Project Manager

Reviewed by:



John H. Turney, P.E.
Senior Engineer



Henry A. Hurkmans
Staff Geologist



1.0 INTRODUCTION

1.1 Background

The site is located at 7210 Bancroft Avenue in Oakland, California (Figure 1) and is currently operated by BP Oil Company (BP). Fuels stored and dispensed at the site have included leaded gasoline, unleaded gasoline and diesel. Unleaded gasoline is currently dispensed from three dispenser islands. Automotive repair is not currently performed at the BP station but was previously conducted at the site when it was a Mobil service station.

Three monitoring wells (MW-1, MW-2 and MW-4) exist on-site, and two monitoring wells (MW-3 and MW-6) exist off-site to the northwest in the adjacent Eastmont Mall parking lot (Figure 2). Well MW-3 was not installed by HETI. A soil boring (B-5) was drilled to a depth of 50 feet below grade in the mall parking lot northeast of the station. Ground water was not encountered in this boring. Gauging data from the existing wells indicate ground water is present approximately 30 feet below grade, and flows in a generally westerly direction at a gradient of 0.005 ft/ft across the site. Subsurface lithology is characterized primarily by clay, silty clay and sandy clay, with occasional thin layers of clayey sand, silty sand, or sandy gravel.

Total low to medium boiling point petroleum hydrocarbons (TPHg) concentrations detected in soil samples collected during the drilling of MW-4 ranged from 240 to 6,000 parts per million (ppm). TPHg was not detected in concentrations exceeding the analytical method detection limit in soil samples collected and analyzed during the drilling of the other monitoring wells/soil borings.

Ground water samples were most recently collected from the monitoring wells at the site in June, 1992. TPHg was detected in water samples collected from wells MW-1 through MW-4 at concentrations ranging from 2,000 parts per billion (ppb) to 42,000 ppb. Benzene was detected in water samples collected from all wells at concentrations ranging from 1.6 ppb (in the sample collected from MW-6, the most downgradient well) to 3,200 ppb. More detailed information on previous site work can be found in HETI's Phase I Subsurface Investigation Report for the site dated August 25, 1992.

1.2 Purpose and General Scope of Work

The purpose of this workplan is to outline a scope of work designed to delineate the horizontal extent of hydrocarbons in the soil and ground water beneath the site, without installing unnecessary monitoring wells. Adequate plume delineation is important for the design of an appropriate remediation system for the site, if required.

HETI proposes to limit the installation of unnecessary monitoring wells at the site by drilling soil borings and collecting soil and ground water samples in proposed monitoring well locations, then screening the samples for the presence of hydrocarbons. Wells will only be installed in locations where hydrocarbons are not detected. In this manner, monitoring wells will only be installed in locations outside the hydrocarbon plume, and will serve to delineate the plume's horizontal extent.

If preliminary soil and water sample screening indicates the presence of hydrocarbons at any drilling location, the borehole will be grouted to the surface and a monitoring well will not be installed. Drilling and sample screening will continue incrementally further from the site, until hydrocarbons are no longer detected and the extent of the plume is delineated.

Monitoring well MW-6 is considered to delineate the downgradient extent of the dissolved hydrocarbon plume, as hydrocarbons were not detected in the soil sample collected from nearest the water table, TPHg was not detected in a ground water sample collected from the well, and benzene was detected at a concentration of only 1.6 ppb. Therefore, HETI is not proposing to drill in any off-site, downgradient locations. HETI proposes instead to drill in the locations shown on Figure 3, the Proposed Well Locations Map. One well (PMW-7) is proposed to be installed in the center median of Bancroft Avenue, one well (PMW-8) is proposed to be installed in the north corner of the site, and the third well (PMW-9) is proposed to be installed off-site to the southeast, across 73rd Avenue in the empty lot. As drilling in this location requires obtaining an access agreement from the property owner and specifying a specific well location prior to field work, the location of PMW-9 is not subject to modification.

All drilling, well construction and borehole grouting procedures will be conducted in accordance with HETI's standard protocols which are consistent with guidelines established by the Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH).

2.0 PROPOSED WORKPLAN

2.1 Soil Boring, Sample Collection and Hydrocarbon Screening

HETI will drill soil borings in the locations shown on Figure 3 to determine if the locations are suitable for monitoring well installation. Prior to drilling, HETI will obtain well installation permits from the local regulatory agency, an Encroachment Permit from the City of Oakland for the work in Bancroft Avenue, and an Access

Agreement from the upgradient property owner. Underground Service Alert will be notified prior to drilling.

HETI will conduct a health and safety briefing with all drilling personnel in attendance prior to the start of drilling. All field personnel will be required to review and sign a site-specific health and safety plan which will be prepared by HETI.

A drill rig equipped with 8-3/4 inch outside-diameter hollow-stem augers will be used to drill the soil borings. Soil samples will be collected at approximate five-foot intervals during drilling using a California modified split-spoon sampler lined with brass tubes. A Thermo-Environmental Model 580B Organic Vapor Meter (OVM) will be used to screen each soil sample for the presence of hydrocarbons, and the results will be used to select soil samples for laboratory analysis. Portions of each soil sample will also be retained for visual classification using the Unified Soil Classification System (USCS).

Each soil boring will be advanced approximately ten feet into the water table, then pulled up slightly to allow ground water to flow into the boring. After a sufficient water column has formed in the borehole, a clean, disposable bailer will be lowered through the augers and a ground water sample will be collected. Once the proposed soil and water samples have been collected from a borehole, the boring will be grouted to the surface with neat cement containing 5% bentonite.

All soil and water samples will be analyzed for TPHg using EPA Method 8015 (DHS-modified) and benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8020. Sample analysis will be performed by PACE Incorporated, a DHS-certified laboratory located in Novato, California.

All drilling equipment will be steam cleaned prior to drilling each soil boring, and steam cleaner rinseate will be contained in 55-gallon drums. Soil cuttings generated during drilling will be placed on a plastic tarp, until transported off-site by a licensed waste hauler.

2.2 Monitoring Well Installation, Gauging, Development and Survey

If soil and water sample laboratory analytical results indicate that hydrocarbons are not present in the subsurface near a particular boring, then a new borehole will be drilled in the same location and a monitoring well will be installed. If analytical results indicate that the hydrocarbon plume has not been delineated, then drilling will be proposed in a more distant location. All monitoring wells will be constructed using schedule 40, flush joint threaded, 2-inch diameter PVC well materials. Machine-slotted well screen will be extended from the bottom of each borehole to

approximately five feet above stabilized ground water level, and blank well casing will be coupled to the screen and extended to the surface. The annular space around the well screen will be filled with a clean, uniform sandpack to approximately 2 feet above the the screened interval. A 1-foot thick seal of hydrated bentonite will be placed above the sandpack, and the remaining annular space around the blank casing will be grouted to the surface. The top of the well casings will be capped and locked with an expansion plug, and traffic rated road boxes will be concreted in place over each well. The details of well construction described above are only approximations and may vary based on field conditions and observations made during drilling.

After well installation and water column stabilization, the depth to water and total depth will be measured in each well using an interface probe accurate to 0.01 feet. Each well will also be checked for the presence of separate-phase petroleum using a clear bailer. The wells will then be developed by surging with a mechanical block and bailing until pH, temperature and conductivity have stabilized, or the development water is relatively free of turbidity. Water generated during well development will be stored on-site in labelled 55-gallon drums until transported off-site by a licensed waste hauler.

HETI personnel will survey the elevation of each wellhead to the nearest one hundredth of a foot, relative to a temporary benchmark at the site, corrected to mean sea level. The point surveyed at each wellhead will be the top of the well casing (north side). Survey data from both the new and existing wells will be combined with the gauging data to calculate ground water elevation contours and to determine the ground water flow direction.

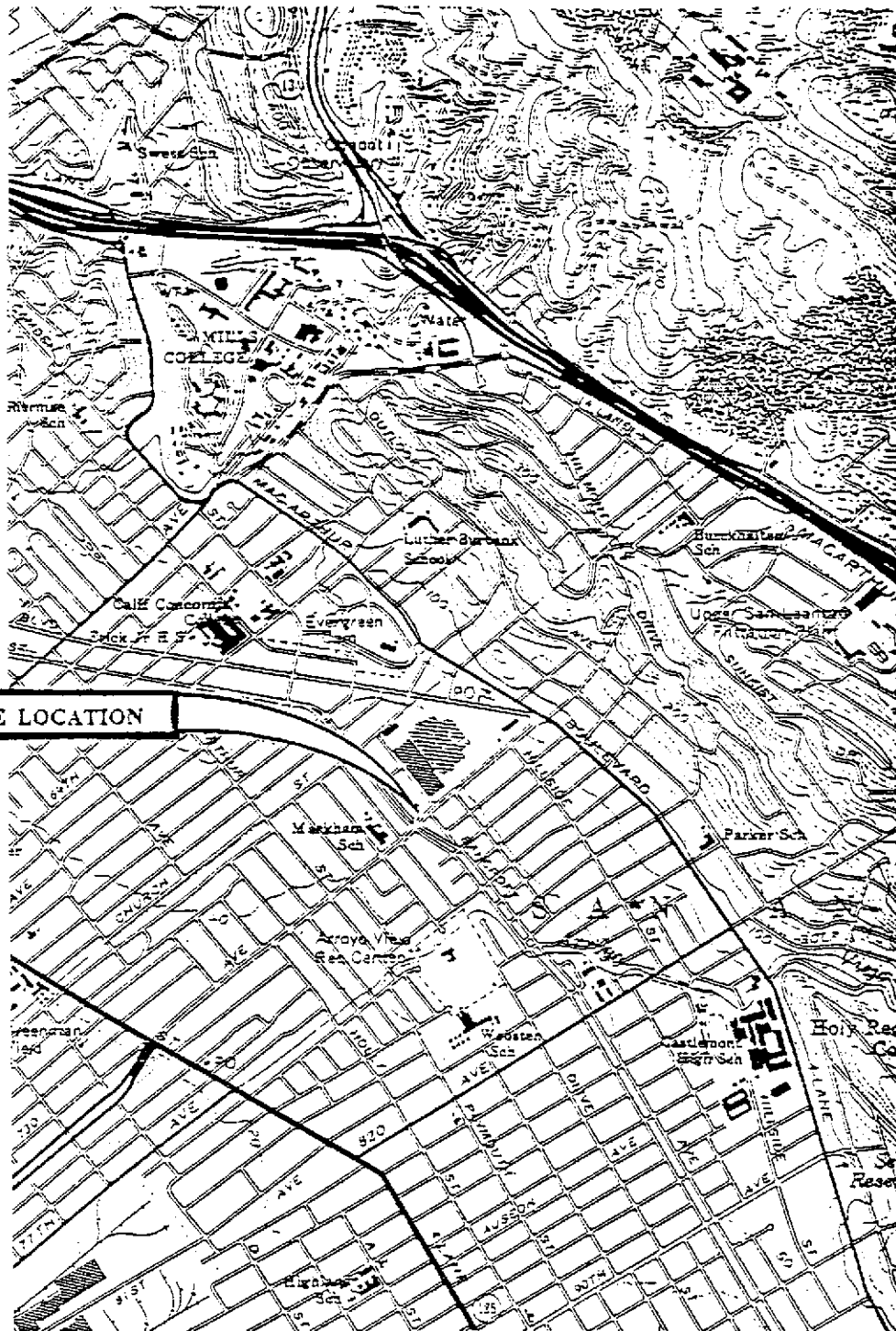
2.3 Ground Water Sampling and Analysis

After well development, each well will be purged of at least three well casing volumes, or until pH, temperature and conductivity readings stabilize. Following recovery of water table elevations to at least 70% of static level, ground water samples will be collected using dedicated polyethylene bailers. Water samples will be transferred to laboratory supplied containers appropriate for the analysis to be performed. Water samples will be analyzed for TPHg using EPA Method 8015 (DHS-modified) and BTEX using EPA Method 8020. Water sample analyses will be performed by PACE Incorporated. Water sample analytical results will be used to confirm that the wells were installed in locations which serve to delineate the horizontal extent of the dissolved hydrocarbon plume.

2.4 Reporting

The results of the subsurface investigation will be presented to BP in a Phase II Subsurface Investigation Report. The report will include a detailed description of all field work and an interpretation of soil and water sample analytical results as they relate to subsurface conditions at the site. Specifically, the report will include boring logs and well construction diagrams, all analytical data, a ground water contour map and hydrocarbon plume map, conclusions and recommendations.

FIGURES



SITE LOCATION

Source: U.S. Geological Survey
 7.5 Minute Topographic Map of the
 "Oakland East, California" Quadrangle
 1959 - Photorevised 1980



North



**HYDR-
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 TECHNOLOGIES, INC.**

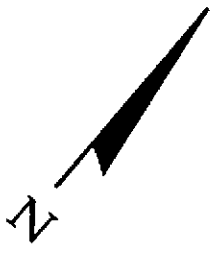
SITE LOCATION MAP
 BP OIL COMPANY
 SERVICE STATION N° 1117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

Job No.
 9-029
 Figure
 1

EXPLANATION

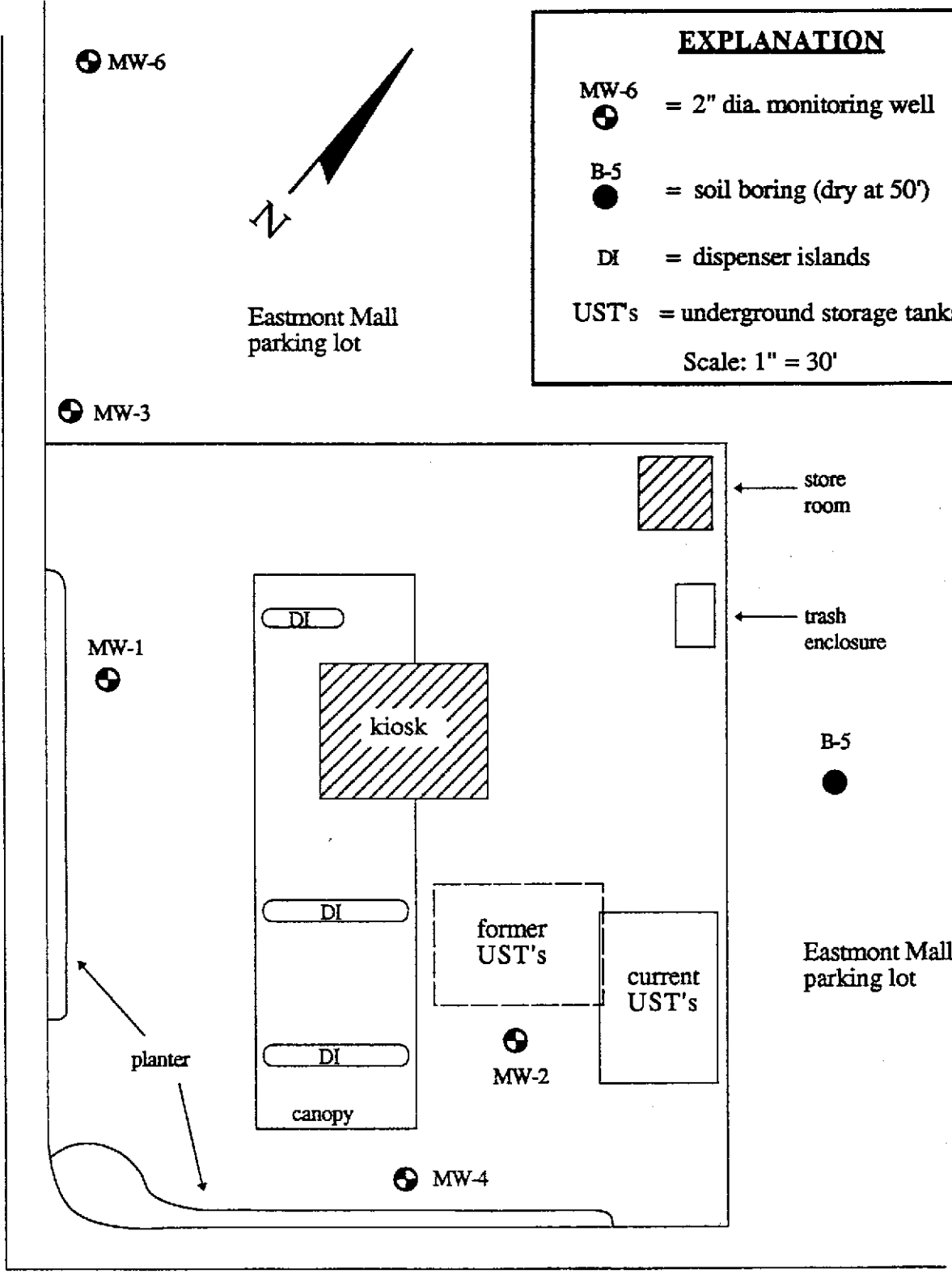
MW-6 = 2" dia. monitoring well
 B-5 = soil boring (dry at 50')
 DI = dispenser islands
 UST's = underground storage tanks

Scale: 1" = 30'



Eastmont Mall parking lot

Bancroft Avenue



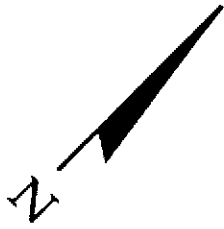
73rd. Avenue



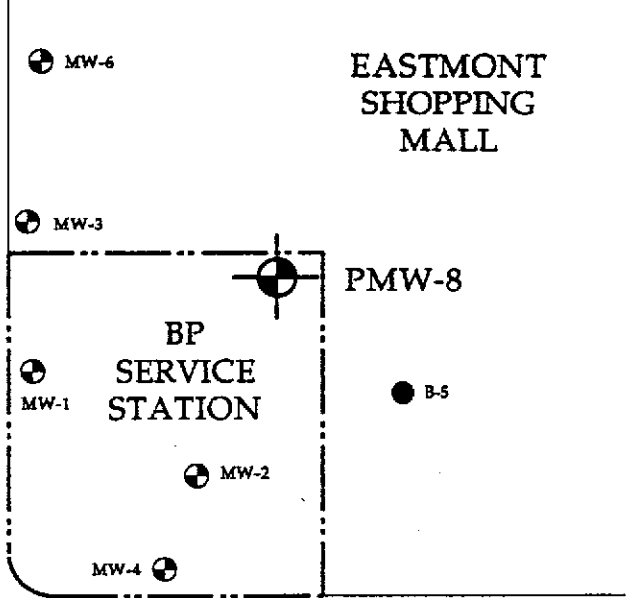
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 TECHNOLOGIES, INC.**

SITE PLAN
 BP Service Station No. 11117
 7210 Bancroft Avenue
 Oakland, California

Job No.
 9-029
 Figure
2



CHEVRON
SERVICE
STATION

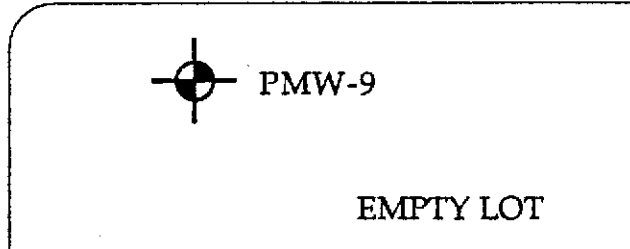


73rd AVENUE





CHURCH'S
CHICKEN


BANCROFT AVENUE



EXPLANATION

PMW-8  = Proposed Monitoring Well Location

MW-1  = Existing Monitoring Well Location

B-5  = Existing Soil Boring Location

DRAWING NOT TO SCALE

HYDR-O-
ENVIRONMENTAL
TECHNOLOGIES, INC.

PROPOSED WELL LOCATIONS

BP Service Station No. 1117
7210 Bancroft Avenue
Oakland, California

Job No.
9-029
Figure
3