Chevron

STID 1483

January 11, 1996

**Chevron U.S.A. Products Company**
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

**Marketing – Northwest Region**
Phone 510 842 9500

Ms. Susan Hugo
Alameda Co. Dept. of Environmental Health
1131 Harbor Bay Pkwy, 2nd Floor
Alameda, CA 94502-6577

Re : Chevron Service Station 9-0329
340 Highland Ave., Piedmont, California

Dear Mrs. Hugo :

The enclosed work plan from Pacific Environmental Group dated January 8, 1995 describes the task associated with the installation of two monitoring wells C-5 and C-6, replacing well MW-6. Please review the enclosed work plan. If the work plan meets your approval, please send a letter to my office. Also enclosed is my letter from December 21, 1995 discussing the disposition of well C-1. This letter may have already been sent, but my search for this letter in my file shows that it was not. In this letter, the word "otherwise" has been corrected. If you have any questions or comments, please call me at (510) 842-8752.

Sincerely,
Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/90329R05

cc : Mr. Kevin Graves, RWQCB -San Francisco Bay Region
2101 Webster St., Suite 500, Oakland, CA 94612

Mr. Frank Hoffman, Hoffman Investment Company
1760 willow Road, Hillsborough, CA 94010

Mir Ghafari, Chevron Service Station
340 Highland Ave., piedmont, CA 94611

Ms. Bette Owen, Chevron U.S.A. Products Co.

Chevron

**Chevron U.S.A. Products Company**
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

**Marketing – Northwest Region**
Phone 510 842 9500

December 21, 1995

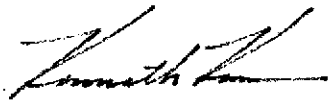
Ms. Susan Hugo
Alameda Co. Dept. of Environmental Health
1131 Harbor Bay Pkwy, 2nd Floor
Alameda, CA 94502-6577

Re : Monitoring Well C-1
Chevron Service Station 9-0329
340 Highland Ave., Piedmont, California

Dear Mrs. Hugo :

In reviewing the file, I have incorrectly identified monitoring well C-2 as monitoring well C-1 in my November 13, 1995 cover letter. As you know, Sierra Environmental Services at the request of Chevron search for this well, but was unable to locate it. This well was probably abandon as it was stated in my August 26, 1993 cover letter. Based on my predecessor's cover letters this well was always "dry", and they contemplated abandoning it. I apologize for any inconvenience this may have caused. If you have any questions or comments, please call me at (510) 842-8752. Otherwise, I will again assume this issue is closed.

Sincerely,
Chevron U.S.A. Products Co.



Kenneth Kan
Engineer

LKAN/90329R04

cc : Mr. Kevin Graves, RWQCB -San Francisco Bay Region
2101 Webster St., Suite 500, Oakland, CA 94612

Mr. Frank Hoffman, Hoffman Investment Company
1760 willow Road, Hillsborough, CA 94010

Mir Ghafari, Chevron Service Station
340 Highland Ave., piedmont, CA 94611

Ms. Bette Owen, Chevron U.S.A. Products Co.

PACIFIC
ENVIRONMENTAL
GROUP INC.

January 8, 1996
Project 320-160.1A

Mr. Kenneth Kan
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583-0804

Re: **Work Plan for Additional Soil and Groundwater Investigation**
Chevron U.S.A. Service Station 9-0329
340 Highland Avenue at Vista Avenue
Piedmont, California

Dear Mr. Kan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) on behalf of Chevron U.S.A. Products Company (Chevron), presents a work plan to investigate soil and groundwater conditions at the site referenced above (Figures 1 and 2). The purpose of this work is to delineate the lateral and vertical extent of petroleum hydrocarbons in soil and groundwater crossgradient and downgradient of the site .

This work plan includes a brief discussion of site background, previous investigations, proposed scope of work, and schedule. Field and laboratory procedures are presented as Attachment A.

## SITE BACKGROUND

The subject site is an operating Chevron service station located at 340 Highland Avenue, Piedmont, Alameda County, California. The site is on a hillside which slopes to the west. Site elevation is approximately 95 feet above mean sea level (MSL). Land use in the site vicinity is residential and commercial. The nearest surface water to the site is a small ephemeral creek located approximately 500 feet south of the site (Figure 1).

Available information indicates that the product facilities include gasoline underground storage tanks (USTs) in a common excavation, one waste oil UST, and one product island.

Hydrogeologic data were obtained from previous investigations and on-going groundwater monitoring. These data indicate that the site is underlain by unconsolidated deposits of silty gravel, silt, and silty sand. Groundwater is anticipated to occur at a depth of approximately 1 to 5 feet below ground surface. However, in May 1995, Canonie Environmental installed an off-site groundwater monitoring well southeast of the site which encountered artesian flow and was subsequently abandoned. Historic groundwater flow direction has been generally to the west.

## PREVIOUS INVESTIGATIONS

In 1983, Gettler-Ryan installed four groundwater monitoring wells (C-1 through C-4) at the site. Total purgeable petroleum hydrocarbons as gasoline (TPPH-g) and benzene have been found in Well C-2 (located near the used oil tank) at maximum concentrations of 56,000 and 2,500 parts per billion (ppb), respectively, and at Well C-4 at maximum concentrations of 1,300 and 2.9 ppb, respectively. At groundwater Monitoring Well C-3, TPPH-g has not been detected and benzene has sporadically been detected at a maximum concentration of 4 ppb.

In 1993, RESNA Industries installed four shallow off-site borings (B-1 through B-4), installed temporary monitoring wells in the borings, and performed a 1-mile radius off-site source search. Petroleum hydrocarbons were not detected in soil samples collected from the off-site borings. Groundwater was not encountered in Borings B-1 and B-3. Petroleum hydrocarbons were not detected in groundwater collected from Borings B-2 and B-4. Piedmont City Hall was identified as an off-site source of diesel. In May 1995, Canonie drilled off-site Boring B-6 and installed Well MW-6. No petroleum hydrocarbons were detected in soil samples collected from Boring B-6. The day after Well MW-6 was installed artesian conditions were encountered. The well was not suitable for groundwater sampling and was subsequently destroyed.

## PROPOSED SCOPE OF WORK

The scope of work for this investigation has been proposed primarily to evaluate the soil and groundwater conditions crossgradient and downgradient of the site. The specific scope of work is discussed below.

- **Permits.** PACIFIC will obtain the appropriate soil boring and groundwater monitoring well permits from the Alameda County Flood Control and Water Conservation District, Zone 7 Water Agency, and the City of Piedmont prior to initiating field work.
- **Utility Location.** PACIFIC will hire a utility locator to identify underground utilities in the vicinity of all subsurface activities.

Underground Service Alert will be properly notified prior to drilling activities.

- **Traffic Control.** In the event that traffic control or lane closure is required for drilling activities, PACIFIC will provide traffic control and lane closure services.
- **Site Safety Plan.** Prior to commencing drilling activities, the Site Safety Plan will be reviewed and signed by all persons performing on-site work. The Site Safety Plan is presented as Attachment A.
- **Soil Boring and Well Installation.** Two soil borings will be drilled and two groundwater monitoring wells will be installed (C-5 and C-6) to investigate soil and groundwater conditions crossgradient and downgradient of the USTs, product piping, and product islands (Figure 2). Previously, an exhibition of artesian conditions was evident in the vicinity of the proposed groundwater monitoring wells. In the event that artesian conditions develop during the current scope of work, PACIFIC will be prepared to manage these circumstances.
- **Well Elevation Survey, Well Development, and Well Sampling.** The newly installed wells will be surveyed to MSL by a state-certified surveyor. The wells will then be developed and sampled in accordance with procedures outlined in Attachment B.
- **Soil and Groundwater Analysis.** Selected soil samples and groundwater samples will be submitted to a California State-certified laboratory and analyzed for the presence of TPPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX compounds), and methyl tert-butyl ether as outlined in the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites dated October 10, 1990 (Table 2).*
- **Report.** A report will be prepared after completion of field work. The report will include boring logs, site map, soil and groundwater analytical results, chain-of-custody documentation, and findings.

Field and laboratory procedures are presented as Attachment B.

## SCHEDULE

PACIFIC is prepared to initiate field work within 1 week of obtaining the appropriate permits. A report documenting the findings of the investigation is anticipated to be submitted approximately 3 weeks after completion of field work.

If there are any questions regarding the contents of this work plan, please call.

Sincerely,

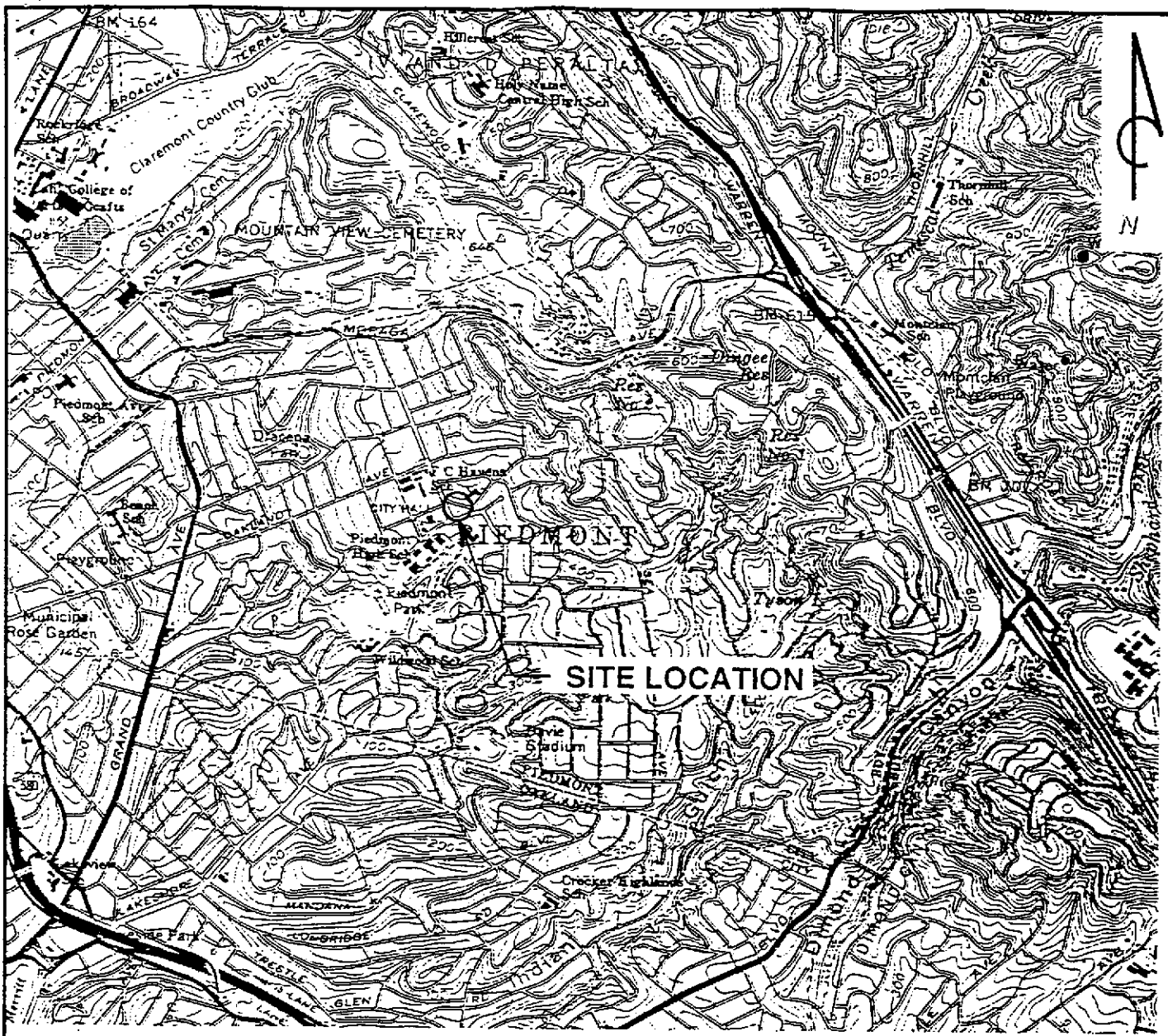
**Pacific Environmental Group, Inc.**

Mark D. Sullivan
Staff Engineer

Erin Garner
Senior Geologist
CHG 0243

REGISTERED GEOLOGIST
ERIN GARNER
No. 0243
CERTIFIED
HYDROGEOLOGIST
EXP 12/96
STATE OF CALIFORNIA

Attachments: Figure 1 - Site Location Map
Figure 2 - Proposed Well Location Map
Attachment A - Site Safety Plan
Attachment B - Field and Laboratory Procedures





QUADRANGLE LOCATION

**REFERENCES:**
USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: OAKLAND EAST, CALIFORNIA
DATED: 1959 REVISED: 1980

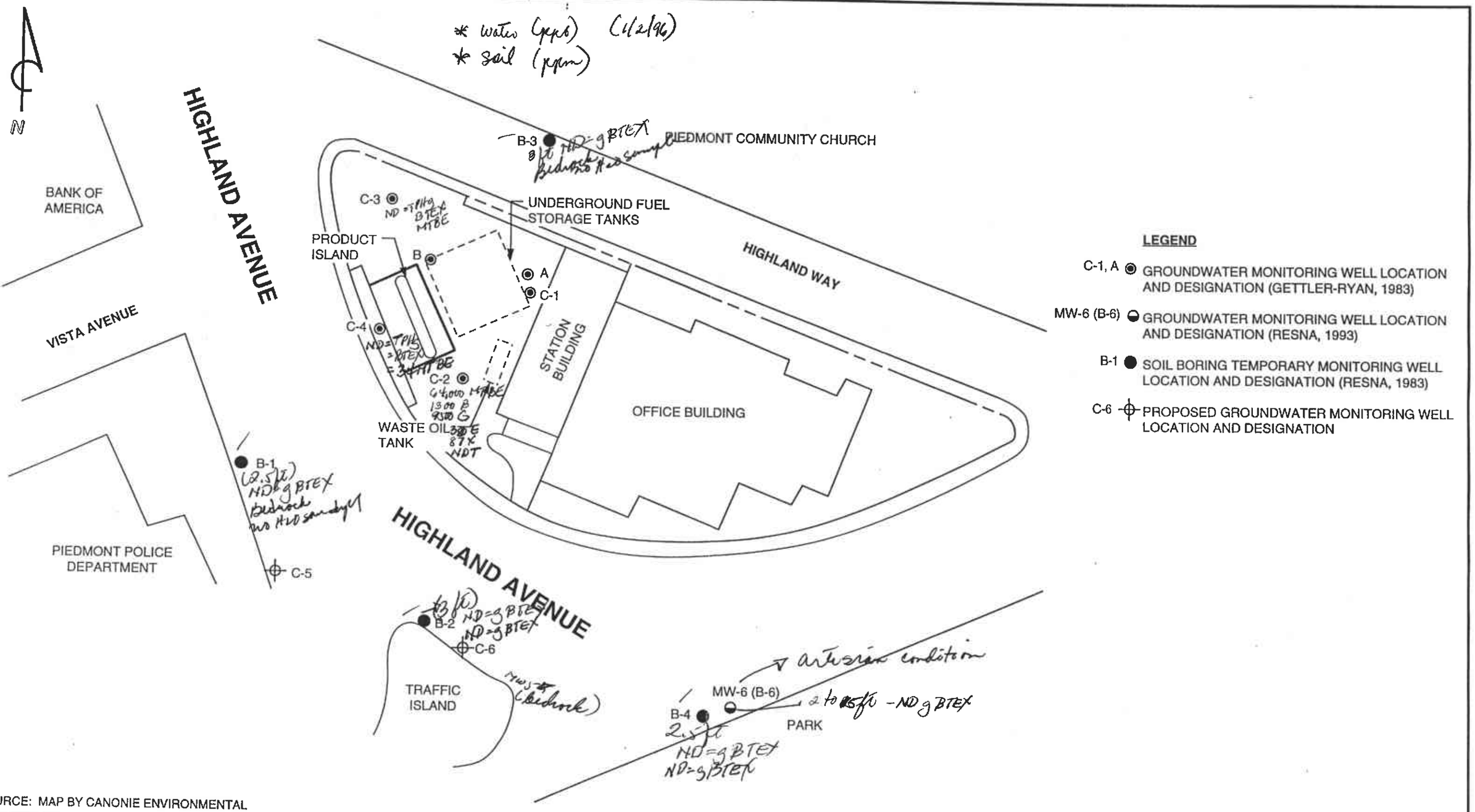
SCALE IN FEET
2000 0 2000

PACIFIC ENVIRONMENTAL GROUP, INC.

**CHEVRON SERVICE STATION 9-0329**
340 Highland Avenue at Vista Avenue
Piedmont, California

**SITE LOCATION MAP**

FIGURE: 1
PROJECT: 320-160.1A




SOURCE: MAP BY CANONIE ENVIRONMENTAL

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 40 80 FEET

**CHEVRON SERVICE STATION 9-0329**
340 Highland Avenue at Vista Avenue
Piedmont, California

**SITE MAP**

FIGURE: 2
PROJECT: 320-160.1A

# ATTACHMENT A

# SITE SAFETY PLAN

# Site Health & Safety Plan

**Chevron Service Station 9-0329**
**340 Highland Boulevard**
**Oakland, California**

Prepared for

Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583

January 8, 1996

Prepared by

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Project 320-160.1A

## CONTENTS

# SITE HEALTH & SAFETY PLAN

## 1.0 INTRODUCTION

### A. OVERVIEW

The site is a former Chevron U.S.A. Products Company Service Station located at 340 Highland Avenue, Piedmont, California. The scope of work to be completed includes drilling and installation of two groundwater monitoring wells.

## 2.0 PROJECT SAFETY AUTHORITY

### A. ON-SITE PROJECT SAFETY

Personnel responsible for the project safety are:

| | |
|---|---|
| Mr. Kenneth Kan | Engineer<br>Chevron U.S.A. Products Company |
| Mr. Doug Andrews | Project Safety Officer<br>(Pacific Environmental Group, Inc.) |
| Mr. Mark Sullivan | Company Safety Officer<br>(Pacific Environmental Group, Inc.) |

The Project Safety Officer has the authority to upgrade or downgrade the provisions of this Site Safety Plan as site conditions change. In addition, the Project Safety Officer shall be responsible for the following:

- Safety Supplies & Equipment Inventory for the Project Site
- Accident/Incident Reporting
- Decontamination/Contamination Reduction Procedures.

## B. PACIFIC ENVIRONMENTAL GROUP, INC. SAFETY OFFICER

The Company Safety Officer reports to the Pacific Environmental Group, Inc. (PACIFIC) Senior Management and is responsible for assuring on-site safety and loss prevention functions.

Responsibilities include:

- Health surveillance of all PACIFIC employees.
- Assuring that safety procedures in effect are in compliance with all appropriate federal, state, and company regulations.
- Maintenance of personnel exposure monitoring records.
- Assuring appropriate personal protective equipment is adequate for actual hazards of on-site conditions.

# 3.0 JOB HAZARD ANALYSIS

## A. CHEMICAL HAZARDS

The possible major contaminants to be encountered on the project are petroleum hydrocarbons. The major area of concern regarding petroleum hydrocarbons are inhalation and dermal (absorption) hazards. Results of toxicological studies on animal exposure to pure concentrations of the VOCs that have been detected at the site are detailed in *Handbook of Toxic and Hazardous Chemicals*, by M. Sittig (1981), and *Dangerous Properties of Industrial Materials*, by N. Irving Sax (1984). Permissible exposure limits (PELs) are eight hour time weighted averages developed by OSHA and are published in the California Code of Regulations, Title 8, Section 5144. Additional reference sources used for the development of this Site Safety Plan is the *Documentation of the Threshold Limit Values*, published by the ACGIH (American Conference of Governmental Industrial Hygienists, Inc.).

Gasoline

Gasoline has an appearance of a clear, aromatic, volatile liquid, and is a mixture of aromatic and aliphatic hydrocarbons. The flash point is listed at -45 degrees Fahrenheit, and has an LEL (Lower Explosive Limit) of approximately 1.4 percent. The PEL for gasoline is 300 parts per million (ppm) in air.

Benzene

Benzene is a common constituent of gasoline and other petroleum product materials. It is a clear, colorless liquid, with a flash point of 12 degrees Fahrenheit. The PEL for Benzene is 1 ppm in air.

Toluene

Toluene is a common constituent of gasoline. Toluene is a flammable, colorless liquid, with a benzol-like odor. The flash point of toluene is 40 degrees Fahrenheit. The currently established PEL for toluene is 100 ppm in air.

Ethylbenzene

Ethylbenzene is a common constituent of gasoline. Ethylbenzene is a flammable, colorless liquid with an aromatic odor. The flash point of ethylbenzene is 59 degrees Fahrenheit. The currently established PEL for ethlybenzene is 100 ppm in air.

Xylene Compounds

Xylene compounds are common constituents of gasoline. Xylenes are clear liquids with flash points of 100 degrees Fahrenheit The currently established PEL for xylenes is 100 ppm in air.

CHEMICAL RISK ASSESSMENT

It is not anticipated that the potential levels of exposure will reach personal exposure limit (PEL) or threshold limit value (TLV) limits, but this is based solely on limited available specific information. It is expected that inhalation and dermal contact will be the potential exposure pathways of concern.

**B. Physical Hazards**

Existing utilities on the site must be avoided in the process of normal site work. Overhead power lines which may be located throughout the site present a potential for electrical contact. All overhead lines located in the work area will be noted prior to starting work. A minimum distance of 10 feet from power lines will be maintained at all times. Underground utilities may also be encountered during drilling activities. Efforts will be made to locate such utilities, and to prevent contact during the drilling.

There is a small risk of hazards based upon the Lower Explosive Limit (LEL) of the specific compounds encountered on the project site. As the majority of the petroleum fuel hydrocarbon materials have low flash points, it is important to measure the presence of the concentrations or amounts of vapor present. This will be accomplished using a photoionization detector.

A potential for elevated noise exposure exists when operating or working around heavy equipment. The use of hearing protection such as ear plugs and/or ear muffs will be required, as necessary.

Additionally there is a potential for physical hazards resulting from falling objects such as tools or equipment, from falls from elevations, or from tripping over pipes, tools hoses, and other equipment laying on the ground. Improper use and/or maintenance of equipment and tools is another potential source of physical hazards on site. These sorts of physical hazards must be avoided through proper site management and control of the work area by the Project Safety Officer.

## 4.0 RISK ASSESSMENT SUMMARY

It is anticipated that there will be no significant or major potential source of exposures due to the scope of work to be followed on this project. The potential of any increased risk of exposure on other workers or the surrounding community is minimal. The basic potential exposure would probably originate from airborne dusts, during the drilling of the monitoring wells, and those dusts containing low level concentrations of VOC materials in the soils.

Due to this potential, the Contractor will have equipment on-site to provide for dust control during the drilling activities, if it appears that dust control is warranted. Also, perimeter air monitoring, to detect potentially migrating contaminants, may be conducted to ensure no hazardous materials are migrating to the surrounding community.

## 5.0 EXPOSURE MONITORING PLAN

### A. General

An air quality monitoring program shall be implemented to provide baseline and on-going air quality data for site operations. This program shall include an on-going evaluation of on-site atmospheric contaminant concentrations during work site activities that involve significant surface disturbances using organic vapor detection instruments and/or detector tubes.

Additionally, the program may include a preliminary survey of existing air quality conditions, prior to any surface disturbances and, if possible, under anticipated "worst case" weather conditions, to be used to establish baseline levels for input into the respiratory protection selection process. The Project Safety Officer may also decide to perform perimeter monitoring of downwind air quality conditions during significant surface disturbances.

### B. Action Levels

If it is determined based on PID readings that total hydrocarbon levels in the work area reach 10 ppm in the breathing zone for 5 minutes, half mask respirators with organic vapor cartridges will be required.

If PID readings indicate total hydrocarbon levels reach 25 ppm in the breathing zone for 5 minutes, work activities will be suspended until the airborne hydrocarbon concentrations decrease to less than 10 ppm. If airborne levels remain at 25 ppm or more, all work will cease until all personnel working in the exclusion zone are equipped with full face or if necessary supplied air respiratory protection including pressure demand air supplied respirators or self contained breathing apparatus (SCBA).

Should respiratory irritation occur, appropriate air-purifying respiratory protective devices will be worn, with organic vapor cartridges and dust pre-filters, or with high efficiency organic vapor/HEPA stack-type cartridge. Typically, the cartridge will require replacement daily.

## 6.0 PERSONAL PROTECTIVE EQUIPMENT

### A. Introduction

It is important that personal protective equipment and safety requirements be appropriate to protect against the potential hazards at the site. Protective equipment will be selected based on the contaminant type(s), concentration(s), and route of entry. In situations where the type of materials and possibilities of contact are unknown or the hazards are not clearly identifiable, a more subjective determination must be made of the personal protective equipment.

A minimum of modified Level D safety equipment and clothing will be required for all workers and visitors on the site. All personnel must be prepared to step up to higher levels of protective equipment as conditions warrant.

### B. LEVELS OF PROTECTION

The basic required work uniform for the site is modified Level D protection which will include:

- hardhat
- steel toed boots
- safety glasses
- polyvinyl gloves for handling soil or liquid samples
- neoprene overgloves for handling augers or other contaminated items

If Level C protection is deemed necessary by the Site Safety Officer based on field conditions, the protective equipment will include:

- modified Level D equipment including gloves and polycoated Tyvek coveralls,
- respiratory protection which may include half face respirator with organic vapor cartridges depending on respiratory action levels listed above.

The necessity for Level A or Level B protection is not expected to be encountered on this or other PACIFIC sites. If site conditions indicate that Level C protection is inadequate, all site activities are to be ceased pending further review by the Company Safety Officer and PACIFIC Senior Management.

## 7.0 WORK ZONES AND SECURITY MEASURES

### A. General

A site must be controlled to reduce the possibility of exposure to any contaminants present and their transport by personnel or equipment from the site.

The possibility of exposure or translocation of contaminants can be reduced or eliminated in a number of ways, including:

- Setting up security or physical barriers to exclude unnecessary personnel from the general area
- Minimizing the number of personnel and equipment on-site consistent with effective operations
- Establishing work zones within the site
- Conducting operations in a manner to reduce the exposure of personnel and equipment
- Minimizing the airborne dispersion of contaminants
- Implementing the appropriate personnel and equipment decontamination procedures

### B. Field Operations Work Area

Work areas (zones) will be established based on anticipated contamination. Within these zones prescribed operations will occur utilizing appropriate personal protective equipment. The planned zones are:

1. Exclusion Area (contaminated). The actual areas where work is being performed are considered to be the exclusion areas. Access to these areas will be strictly limited to the personnel needed to conduct the work being performed.

2. Contamination Reduction Area. An area near to each active work zone will be designated as the contamination reduction area. Disposable protective gear will be removed and placed in garbage bags prior to leaving the reduction zone. Heavy equipment and non-disposable gear will be cleaned at a decontamination area within this zone.

3. Support Area (non-contaminated). Areas located away from active work areas and out of the zone of potential impact of hazards will be used for staging and support of the work being performed on site. Any materials, equipment, or clothing of personnel must be fully decontaminated prior to entering these areas.

## 8.0 DECONTAMINATION PROCEDURES

As part of the system to prevent or reduce the physical transfer of contaminants by people and/or equipment from on-site, procedures will be instituted for decontaminating anything leaving the Exclusion Area and Contamination Reduction Area. These procedures include the decontamination of personnel, protective equipment, monitoring equipment, clean-up equipment, etc. In cases where the Contamination Reduction Zone is not directly adjacent to the Exclusion Area, gross decontamination will occur in the Exclusion Area, followed by more detailed cleaning in the Reduction Area. This gross decontamination will be performed to the extent necessary to keep contaminants from spreading to other "clean" areas of the site. In general, decontamination at the site consists of rinsing equipment, personnel, etc., with copious amounts of water and washing with detergent water solutions. The spent solution, brushes, sponges, containers, stands, etc., used in the decontamination process must be properly disposed.

## 9.0 GENERAL SAFE WORK PRACTICES

The project operations shall be conducted with the following minimum safety requirements employed:

1. Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of materials is prohibited in any area where the possibility of contamination exists.

2. Hands must be thoroughly washed upon leaving a contaminated or suspected contaminated area before eating, drinking, or any other activities transpire.

3. Legible and understandable precautionary labels shall be prominently affixed to containers of raw materials, intermediates, products, mixtures, scrap, waste, debris, and contaminated clothing.

4. Contaminated protective equipment shall not be removed from the regulated area until it has been cleaned or properly packaged and labeled.

5. Removal of materials from protective clothing or equipment by blowing, shaking, or any other means which may disperse materials into the air is prohibited.

6. Personnel on-site must use the "buddy" system when wearing any respiratory protective devices. Communications between members must be maintained at all times. Emergency communications shall be prearranged in case of encountering unexpected situations. Visual contact must be maintained between "pairs" on-site, and each team should remain in closed proximity to assist each other if necessary.

7. Personnel should be cautioned to inform each other of subjective symptoms of chemical exposure such as headache, dizziness, nausea, and irritation of the respiratory tract.

8. No excessive facial hair which interferes with a satisfactory fit of the facepiece-to-face seal, will be allowed on personnel required to wear respiratory protective equipment.

9. All respiratory protection selection, use, and maintenance shall meet the requirements of established PACIFIC procedures, recognized consensus standards (AIHA, ANSI, NIOSH), and shall comply with the requirements set forth in 29 CFR 1910.134.

10. Contact with surface and groundwater shall be minimized.

In addition, the following precautions shall be implemented for all personnel working on the project:

- Gross decontamination and removal of all personal protective equipment shall be performed prior to exiting the facility. Contaminated personal protective clothing of worn, will be removed and collected in a drum for disposal.
- Field operations personnel shall be cautioned to inform each other of non-visual effects of the presence of toxics, such as: headaches, dizziness, or nausea.

## 10.0 STANDARD OPERATING PROCEDURES

### A. Respiratory Protection Program Guidelines

Respirators will be provided by PACIFIC when such equipment is deemed necessary to protect the health of PACIFIC employee. PACIFIC shall provide respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of this respiratory protection program. The Company Safety Officer will approve the selection, purchase, and inspection of the models and types of respiratory protective devices.

A medical evaluation is required prior to wearing any respirator, except where emergency escape respirators are provided. The contract physician shall determine annually if any health or physical conditions exist which would prohibit a worker from being assigned to an area requiring respiratory protection. A record will be retained in the employee's medical file, which will be retained at the medical clinic or doctor's office.

Respirators shall not be worn when conditions prevent a facepiece-to-face seal. Such conditions as facial hair, scars, wrinkles, facial diseases, dentures removal, or other disorders could prevent a proper facepiece-to-face seal. In these cases, corrective action will be taken to ensure a proper seal. Contact lenses shall not be worn when using any respirator.

For the safe use of any respirator, it is essential that the user be properly instructed in its operation and maintenance. Both supervisors and employees shall be so instructed. Employees shall be instructed and trained in the proper selection and use of respirators and their limitations. The employee shall use the provided respirator in accordance with instructions and training received. All training shall be documented with records retained in the employee's training files.

The PACIFIC Respirator Program will meet the 11 points as specified in Title 29 CFR 1910.134*, and CAC Title 8.

## 11.0 EMERGENCY PROCEDURES

### A. Site Emergency Warnings

Several warning systems may be utilized depending on the work site conditions or emergency involved:

1. Verbal Communications

2. Vehicle Horns

Verbal instructions between crew members are typically adequate to communicate steps that are required in emergency situations. In cases where parts of the crew are distant from the center of activity, vehicle horns may be necessary to indicate site emergencies. This type of communication needs to be followed by verbal instructions on necessary emergency actions.

### B. Emergency Equipment

The following equipment comprises the basic elements for emergency preparedness. All or some of these items will be available at the work site:

1.Fire extinguishers - dry chemical

2.First aid kits

### C. General Emergency Procedures

In case of an emergency or hazardous situation, the person that observes this condition shall immediately sound the alarm.

1. Upon hearing an alarm, all non-emergency communications will cease and the person giving the alarm will proceed to give the Project Safety Officer all pertinent information.

2. Power equipment will be shut down and operators will stand by for instruction.

3. Injured personnel will be transported to the Contamination Reduction Line.

4. The PACIFIC office will be notified immediately.

5. In case of a fire, explosion, or hazard alarm, personnel will immediately proceed to assigned pre-arranged safe locations.

6. Upon arrival at the safe locations, a complete head count will taken by the Project Safety Officer and personnel will stay at the safe locations until the area is secured.

**D. Personal Injury**

If an injury occurs due to an accident or exposure to a hazardous substance, the PACIFIC office will be notified. The Company Safety Officer will be given all appropriate information concerning the nature and cause of the injury so that treatment preparations can be initiated. The injured person will be transported to the Contamination Reduction line where appropriate first aid and treatment can begin. The Project Manager will be informed and will investigate the cause of the injury and make any necessary changes in work procedures.

**In the event of an accident resulting in physical injury, first aid will be administered, and the injured worker will be transported to Kaiser Hospital for emergency treatment.**

**Hospital:** **Kaiser Hospital**
**280 West MacArthur Boulevard**
**Oakland, CA**
**(510) 596-1000**

**Directions to Hospital:**

**Go north on Highland Avenue.**

**Left (southwest) on Oakland Avenue**

**Right (north) on MacArthur Boulevard to Hospital.**

## EMERGENCY CONTACT LISTING

| Nature of Emergency | Phone Number | Alternate Phone Number |
|---|---|---|
| Ambulance | 911 | 911 |
| Fire | 911 | 911 |
| Police | 911 | 911 |
| Poison Control Center | 911 | 1-800-662-9886 |
| Chemical Spills | 1-800-424-8802 | |
| Hospital | (510)-596-1000 | |
| Other Contingencies | Pacific Environmental Group, Inc.>----------> | (408) 441-7500 |

## 12.0 TRAINING REQUIREMENTS

All personnel assigned to this project will be required to demonstrate that they have completed the Initial Training Requirements (40 hours), according to Federal OSHA Standards under 29 CFR 1910.120.

Field personnel from PACIFIC and their sub-contractors will attend a project briefing for safety issues and project work task review before beginning work. All PACIFIC site personnel shall have completed training relative to the project operations plans, and the materials to be encountered during the project.

## 13.0 MEDICAL SURVEILLANCE

PACIFIC personnel and sub-contractors engaged in project operations shall be participants in the Medical Surveillance program, and must be cleared by the examining physician(s) to wear respiratory protection devices and protective clothing for working with hazardous materials. The applicable requirements under Federal OSHA, 29 CFR 1910 will be observed.

### A. Examination Requirements

All PACIFIC personnel on-site shall have successfully completed a pre-placement or periodic medical examination in accordance with established PACIFIC policies and procedures, and consistent with the provisions of the OSHA carcinogen standards. This examination shall include a complete medical and occupational history, physical examination, and selected biological sampling. Laboratory studies include a complete blood count (CBC), urinalysis, chemistry panel (SMAC), pulmonary function (FEV and FVC), chest X-ray, audiometry, and vision screening.

## 14.0 RECORDKEEPING

### A. General

Recordkeeping shall be consistent with OSHA regulations in all respects. The following permanent records will be maintained in the PACIFIC offices:

1. Safety Inspection Reports
2. Personnel Exposure Monitoring Records
3. OSHA 200 - Current to within 90 days
4. Accident reports consistent with established PACIFIC procedures

### B. Medical Records

Permanent medical records shall be maintained in confidential files by the contract physician/medical clinic. The physician will supply PACIFIC with a medical status document, certifying that the personnel assigned to the project are physically capable of performing their individual work tasks.

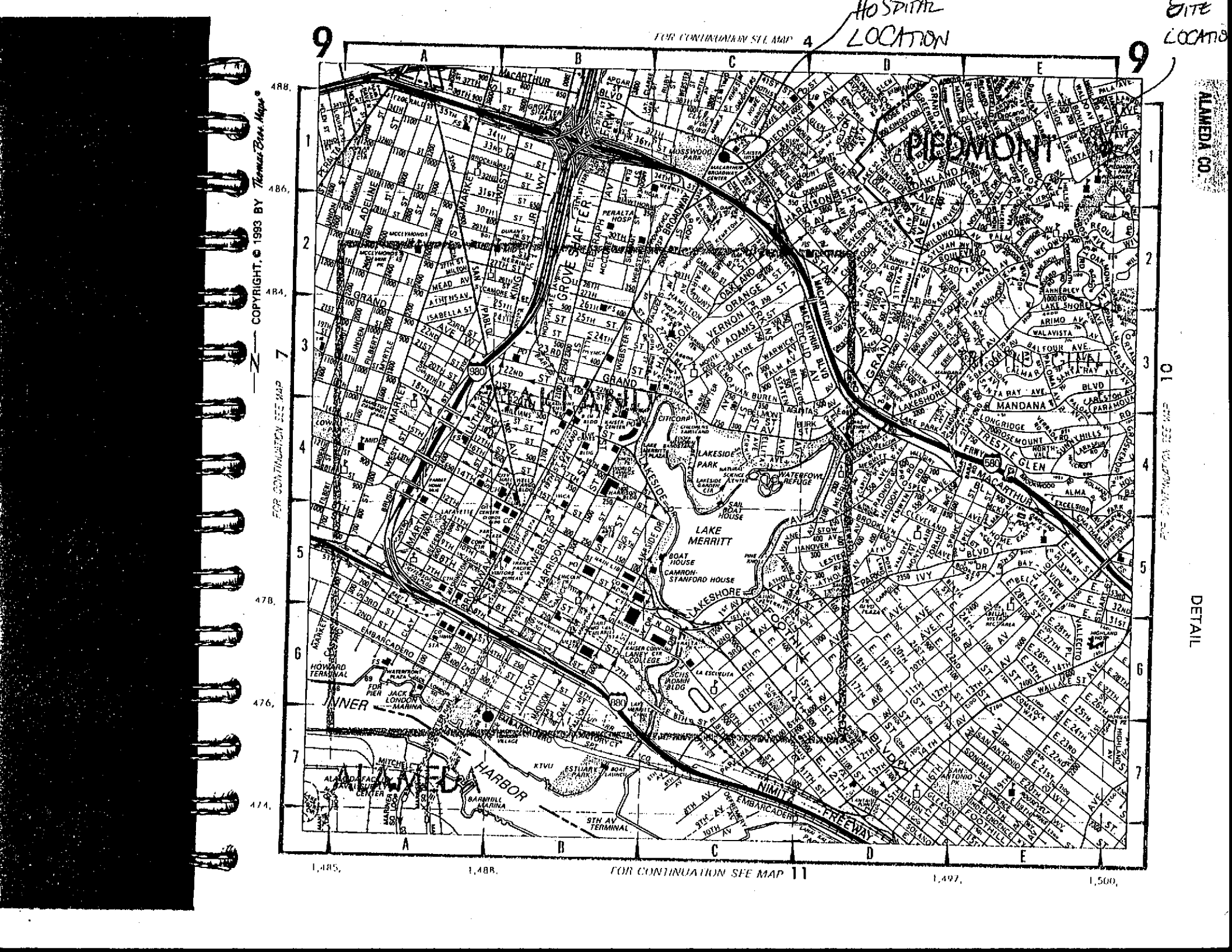
## 15.0 SIGNATURES

Site Health & Safety Plan Approved By:

Signature: _____ Date: 1-8-96

Name:

Title: Mark Sullivan, Project Manager
Pacific Environmental Group, Inc.


HOSPITAL LOCATION
SITE LOCATIO
9
FOR CONTINUATION SEE MAP 4
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C
D
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PIEDMONT
OAKLAND
ALAMEDA
LAKE MERRITT
LAKESIDE PARK
WATERFOWL REFUGE
SAIL BOAT HOUSE
BOAT HOUSE
CAMRON-STANFORD HOUSE
INNER HARBOR
MACARTHUR FREEWAY
NIMITZ FREEWAY
FOOTHILL BLVD
EMBARCADERO
GRAND AVE
LAKESHORE AVE
MACARTHUR BLVD
TRESTLE GLEN
MANDANA BLVD
ALAMEDA CO.
DETAIL
FOR CONTINUATION SEE MAP 7
FOR CONTINUATION SEE MAP 10
FOR CONTINUATION SEE MAP 11
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1,488.
1,497.
1,500.
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## CONTRACTOR AND SUB-CONTRACTOR AGREEMENTS

1. Contractor certifies that the following personnel to be employed on the subject project have met the following requirements of the OSHA Hazardous Waste Operator Standard (29 CFR 1910.120) and other applicable OSHA standards.
2. Contractor certifies that in addition to meeting OSHA requirements, it has received a copy of this Site Health & Safety Plan and will ensure that its employees are informed and will comply with both OSHA requirements and the guidelines in this Site Health & Safety Plan.
3. Contractor further certifies that it has read and understands and will comply with all provisions of this Health & Safety Plan and will not hold Pacific Environmental Group, Inc. responsible or liable for any injury or health problems that may arise.

| Print Name | Signature | Date |
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# ATTACHMENT B

# FIELD AND LABORATORY PROCEDURES

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# FIELD AND LABORATORY PROCEDURES

## Groundwater Monitoring Well Installation

The soil borings will be drilled using 8-inch hollow-stem auger drilling equipment and logged by a Pacific Environmental Group, Inc. geologist using the Unified Soil Classification System and standard geologic techniques. Total depth of the borings is anticipated to be 20 feet. Soil samples for logging will be collected at 5-foot depth intervals using a California-modified split-spoon sampler. The sampler will be driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis will be retained in brass liners, capped with Teflon® squares and plastic end caps, taped, and sealed in clean zip-lock bags. The samples will be placed on ice for transport to the laboratory accompanied by chain-of-custody documentation. Down-hole drilling and sampling equipment will be steam-cleaned following the completion of each soil boring. Down-hole sampling equipment will be washed in a tri-sodium phosphate solution between samples.

The borings will be converted to groundwater monitoring wells by installing 2-inch diameter, flush-threaded, Schedule 40 PVC casing with 0.020-inch factory-slotted screen. Approximately 15 feet of screen will be placed in the bottom of each boring. An RMC 2 x 12 sand pack will be placed in the annular space across the entire screened interval, and will extend approximately 3 feet above the top of the screen for the well. A bentonite and Portland cement seal will extend from the sand pack to the ground surface. Artesian conditions may be encountered during field operations and special attention will be paid to this situation by the driller and field geologist.

Following well completion, the vault box elevation and the elevation of the top of the PVC well casing of the monitoring wells will be surveyed to the nearest 0.01 foot, relative to mean sea level, by a licensed surveyor. The boring logs will show well construction details and the well head elevations.

## Organic Vapor Procedures

Soil samples collected at 5-foot depth intervals during drilling will be analyzed in the field for ionizable organic compounds using the HNU Model PI-101 (or equivalent) photo-ionization detector (PID) with a 10.2 eV lamp. The test procedure will involve measuring approximately 30 grams from an undisturbed soil sample, placing this subsample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar will be warmed for approximately 20 minutes (in the sun), the foil pierced, and the head-space within the jar tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument will be calibrated prior to drilling using a 100-ppm isobutylene standard (in air) and a sensitivity factor of 55 which relates the photo-ionization potential of benzene to that of isobutylene at 100 ppm. The results of the field testing will be noted on the boring logs. PID readings are useful for indicating relative levels of contamination, but cannot be used to evaluate hydrocarbon levels with the confidence of laboratory analyses.

## Well Development and Groundwater Sampling

The groundwater monitoring wells will be developed and sampled a minimum of 24 hours after completion of the wells. Well development procedure will include swabbing and bailing and/or pumping. Water will be removed from the well until relatively turbid free water is produced, or until a minimum of ten casing volumes have been removed. The groundwater sampling procedure will consist of first measuring the water level in the well, and checking it for the presence of separate-phase hydrocarbons (SPH) using an MMC oil-water interface probe. If SPH are not present, the well will be purged of a minimum of five casing volumes of water. During purging, temperature, pH, and electrical conductivity will be monitored until stable to document that a representative sample is collected. After the water level recovers, a sample will be collected from each well using a Teflon bailer and placed into appropriate EPA-approved containers. The samples will be labeled, logged onto a chain-of-custody document, and transported on ice to the laboratory.

## Rinsate, Purge, and Development Waters, and Soil Cuttings Storage and Disposal

Waters produced during field activities will be transported via a purge trailer and disposed of at a state-certified treatment and disposal facility. When necessary, waters will temporarily be stored on site in DOT-approved 55-gallon drums pending transport and disposal.

Soil cuttings generated during drilling will be placed on visqueen and covered with plastic. Samples of the cuttings will be collected and sent to a state-certified laboratory for analysis. Pending analytical results, the soil cuttings will be hauled by a state-certified waste hauler to a state-certified treatment and disposal facility.

## Laboratory Procedures

Selected soil samples and groundwater samples will be analyzed by a California State-certified laboratory for the presence of total purgeable petroleum hydrocarbons calculated as gasoline (TPPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) using modified EPA Methods 8015 and 8020.