ADVANCED ENVIRONMENTAL CONCEPTS INC

Advanced Environmental Concepts, Inc. is pleased to present the following:

SUBSURFACE SOIL AND GROUNDWATER INVESTIGATION WORKPLAN

for

Prestige Products Corporation
240 West MacArthur Boulevard
County of Alameda • Oakland, California

This report has been prepared for:

Mr. Warren Dodson
Dodson Limited

June 1997

4400 ASHE ROAD, #206 • BAKERSFIELD, CA 93313 805/831-1646 • FAX 805/831-1771

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1.0 INTRODUCTION

Mr. Warren Dodson, owner of the subject property, has authorized **Advanced Environmental Concepts, Inc. (AEC)** to prepare this monitoring well installation and assessment of risk workplan. The former service station facility is located at 240 West MacArthur Boulevard, Oakland, California. The regulatory contact for this project is Ms. Madhulla Logan, Alameda County Health Care Agency (ACHCA). The location of the facility is shown on **Figure 1**.

1.1 Purpose

The soil boring and groundwater monitoring well installation described in this workplan has the following objectives:

- To further evaluate the vertical and lateral limits of the hydrocarbon plume.
- Demonstrate that the groundwater plume is stable within the capillary fringe and is passively degrading.

1.2 Scope of Work

The scope of services described in this workplan are summarized below for clarification purposes. Detailed investigative methods are presented in section 4.0 of this report:

1. Locating underground utilities using Client records and Underground Service Alert (USA);
2. Drilling seven soil borings and convert four of the soil borings to 2-inch diameter groundwater monitoring wells;
3. Sample the soil borings at intervals of 5-feet, and at the capillary fringe, and have selected soil samples analyzed for TPH-gasoline, BTXE, and MTBE.
4. Prepare a report detailing our findings complete with conclusions and recommendations.

1.3 Schedule

Advanced Environmental Concepts, Inc. anticipates beginning the services described in this workplan within one week upon approval by the ACHCA and authorization to proceed from Mr. Warren Dodson. Drilling will commence only after applicable permits have been obtained from the Zone 7 Water Agency. The installation of the monitoring wells should be completed within two day of mobilization to the site.

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2.0 BACKGROUND

On February 14, 1991 a magnetometer survey was conducted by Mittlehauser Corporation to evaluate whether underground fuel storage tanks (USTs) remained on the site. The report of findings described a large magnetic anomaly in the northwestern portion of the former service station property. The anomaly was not characteristic of USTs, however, it was the opinion of the surveyor that the anomaly represented wide-spaced reinforcement placed for the support following the UST removals. However, a 350 gallon waste oil UST was identified west of the service bays.

In March of 1991 Mittlehauser removed the waste liquid from the UST and onsite sump. The sump was also steam cleaned prior to removal. Soil staining was observed in soil around the sump and soil samples indicated 2,600 mg/kg total oil and grease was present. Analyses for kerosene and diesel were below detectable limits. Contaminated soil was removed from the area of the sump and confirmed by sampling.

On October 3, 1996 AEI removed the 350 galloon waste oil UST. Visual staining was identified on the sidewalls and excavation floor. AEI overexcavated the impacted soil and then collected confirmation soil samples to ensure that adequate removal had occurred.

On January 8, 1997 AEI drilled and sampled six soil borings around the former UST and island locations. Three of the soil borings (BH-4, BH-5, and BH-6) exhibited significant gasoline range contamination in the soil and grab groundwater samples.

Based on the soil and "grab" groundwater sample data, the ACHCA is requesting additional subsurface investigation to further evaluate the soil and groundwater contamination at the site. Following is AEC's workplan.

3.0 WORK PLAN

AEC proposes to drill and sample seven soil borings at the subject site. The soil borings will be advanced to approximately 15 feet BGL, and the borings to be completed as groundwater wells will be drilled to approximately 20-feet BGL. Soil sampling will occur at intervals of 5-feet, and at the capillary fringe. The monitoring wells will be positioned to evaluate the residual gasoline concentrations in the capillary fringe, and identify the stability of the plume migration. The monitoring wells will be designated MW-1, MW-2, MW-3, and MW-4. Location of the proposed borings and groundwater monitoring wells are plotted on **Figure 2**. Well construction details are presented on **Figure 3**.

3.1 Drilling Methods

The borings will be advanced using Gregg Drilling's Rhino track-mounted limited access rig, equipped with 8-inch O.D., hollow-stem, continuous-flight augers in accordance with ASTM Method D 1452-80 for soil investigations and sampling by auger borings.

Prior to drilling, the augers will be steam cleaned to minimize any chance of affecting a potentially "clean" location. Also, at no time will any water or other liquid be added to the boring.

Cuttings generated from the borings will be enveloped in plastic sheeting or drums and stored on-site. If analytical results indicate that the soil is impacted by hydrocarbons, disposal or treatment will be the responsibility of the Client.

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Once groundwater is encountered the boring will be advanced an additional 5 feet into the water-bearing zone and completed as a 2-inch diameter groundwater monitoring well. Prior to any boring activity AEC will apply for groundwater well permits.

4.0 INSTALLATION OF MONITORING WELLS

The monitoring wells will be constructed according to **Figure 3** and installed in the following manner: Approximately 20-feet of 2-inch, flush-threaded, Schedule 40 PVC casing with an end cap, will be set in the well through the auger. The bottom 10-feet will consist of 0.010-inch factory slotted liner, thus 5-feet of slotted casing will be above the potentiometric surface allowing for seasonal fluctuations in the water table and to permit sampling of the air/water interface. Number 2/12 Monterey sand will be slowly poured down the annulus while removing five feet of auger at a time. The filter pack will be placed one foot above the screened interval. Six feet of bentonite chips will be poured and hydrated to form a seal above the sand pack. A cement slurry will be used to fill the annular space to within one foot of grade level. The well cover box will then be cemented in and sloped to minimize water accumulation.

4.1 Well Development/Sampling

The monitoring wells will be developed using a submersible pump after installation. The wells will be pumped until the effluent is clear and free of fines. They will then be allowed to stand and regain equilibrium before sampling and measuring depth to groundwater.

Prior to sampling, the monitoring wells will be purged of a minimum of three casing volumes of groundwater. The groundwater will be pumped into appropriately labeled DOT approved 55-gallon drums and stored on-site. Groundwater measurements will be monitored and allowed to stabilize within 10-percent of the previous measurements for pH, conductivity, temperature, and turbidity. Groundwater samples will be collected using a stainless steel bailer washed in a solution of Alconox and triple rinsed with distilled water. The water samples will be transferred to clean 40 ml VOA vials having teflon septa, and 1 Liter amber jars. Care will be exercised to ensure that no air pockets are present in any of the vials.

The VOA vials and jars will be labeled, placed in a protective covering, stored on blue ice, and recorded on the Chain-Of-Custody Record. Samples will be analyzed for TPH-g,d BTEX, and MTBE according to EPA methods 8015 modified and 602, respectively. In addition, the following parameters will be measured: dissolved oxygen, redox potential, nitrate, sulfate, and ferrous iron.

The purpose of this work is to demonstrate plume stability and potential for natural degradation, therefore, AEC recommends four quarters of sampling to ensure confirmation.

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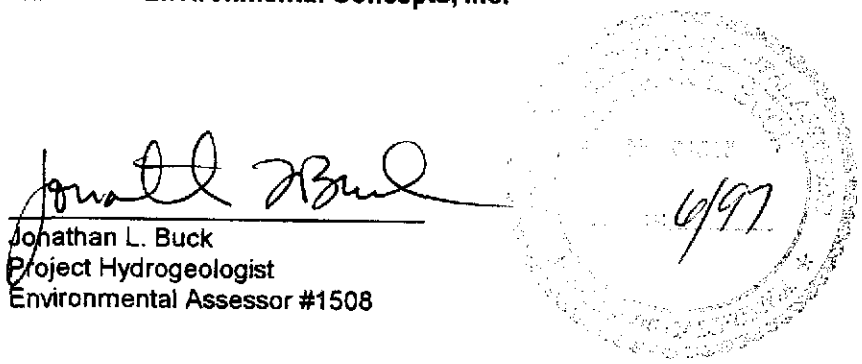
5.0 REMARKS/SIGNATURES

This work plan represents **Advanced Environmental Concepts, Inc.'s** professional opinions. These opinions are based on currently available data and were arrived at in accordance with accepted hydrogeologic and environmental engineering practices. No other warranty, expressed or implied, is given.

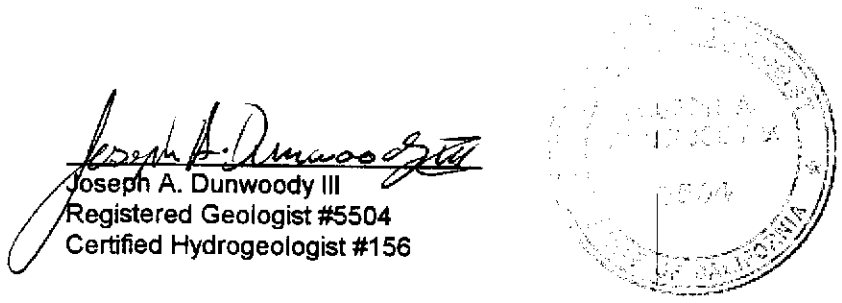
This work plan was prepared by:

Advanced Environmental Concepts, Inc.



Jonathan L. Buck
Project Hydrogeologist
Environmental Assessor #1508

This work plan has been prepared under my direct supervision:



Joseph A. Dunwoody III
Registered Geologist #5504
Certified Hydrogeologist #156

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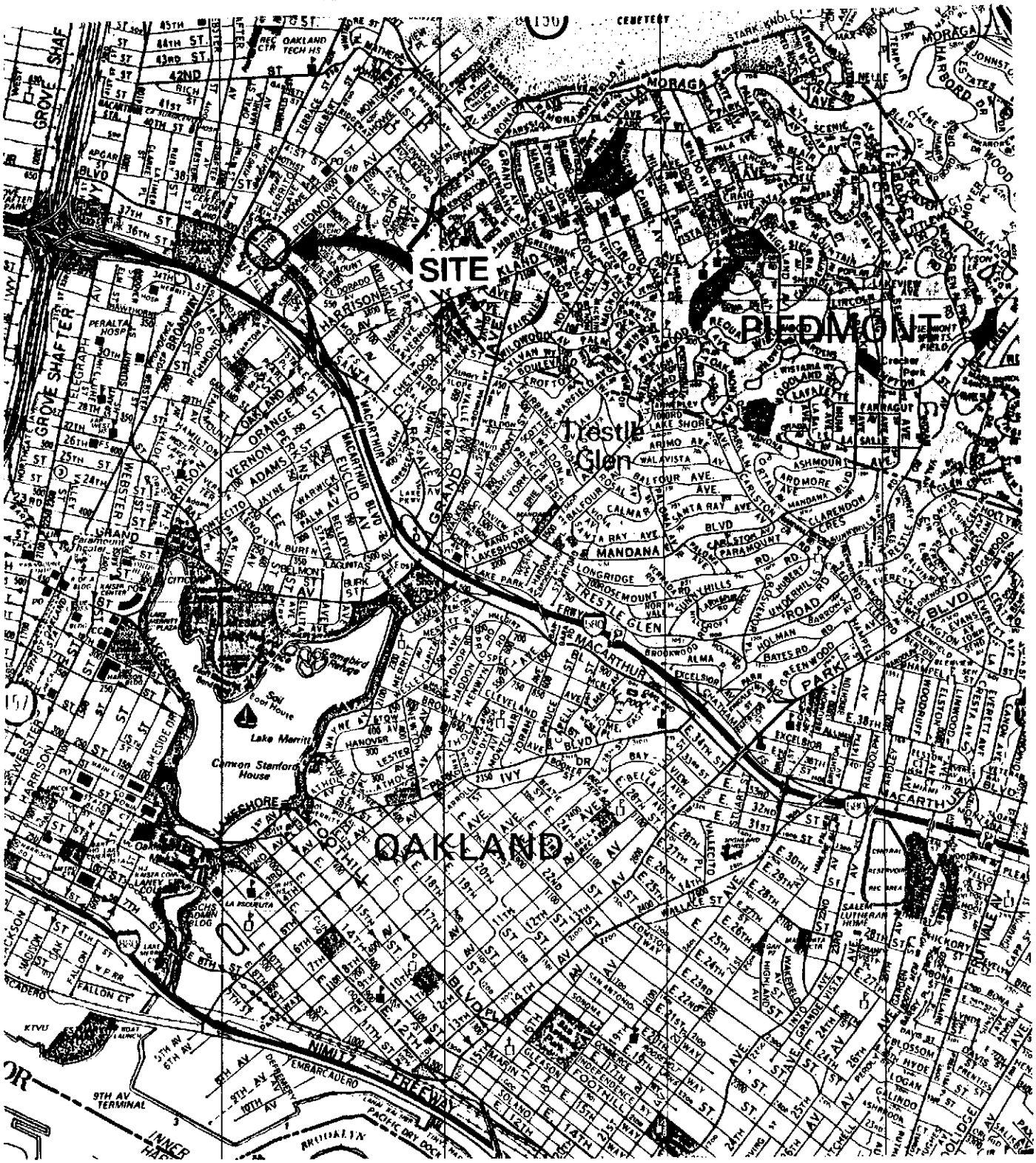


Map Source: Thomas Maps

ADVANCED ENVIRONMENTAL CONCEPTS INC

ADVANCED ENVIRONMENTAL CONCEPTS
P.O. BOX 40672 BAKERSFIELD, CA 93384

- SITE AREA -

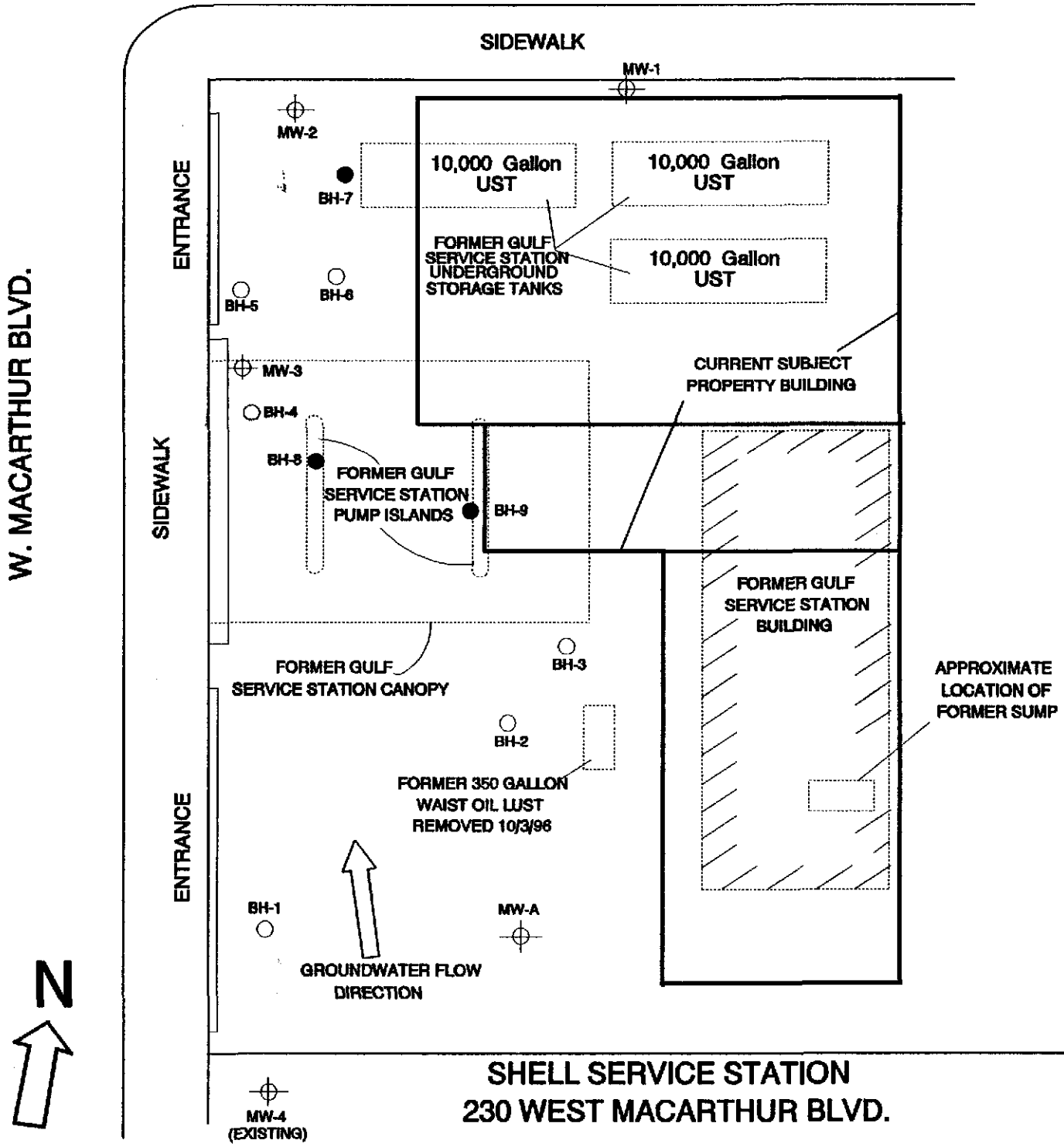
Prestige Products Corporation

240 West MacArthur Blvd.

County of Alameda - Oakland, California

FIGURE

1



ADVANCED ENVIRONMENTAL CONCEPTS INC

ADVANCED ENVIRONMENTAL CONCEPTS
P.O. BOX 40672 BAKERSFIELD, CA 93384

- SITE LOCATION -

Prestige Products Corporation

240 West MacArthur Blvd.

County of Alameda - Oakland, California

FIGURE

2

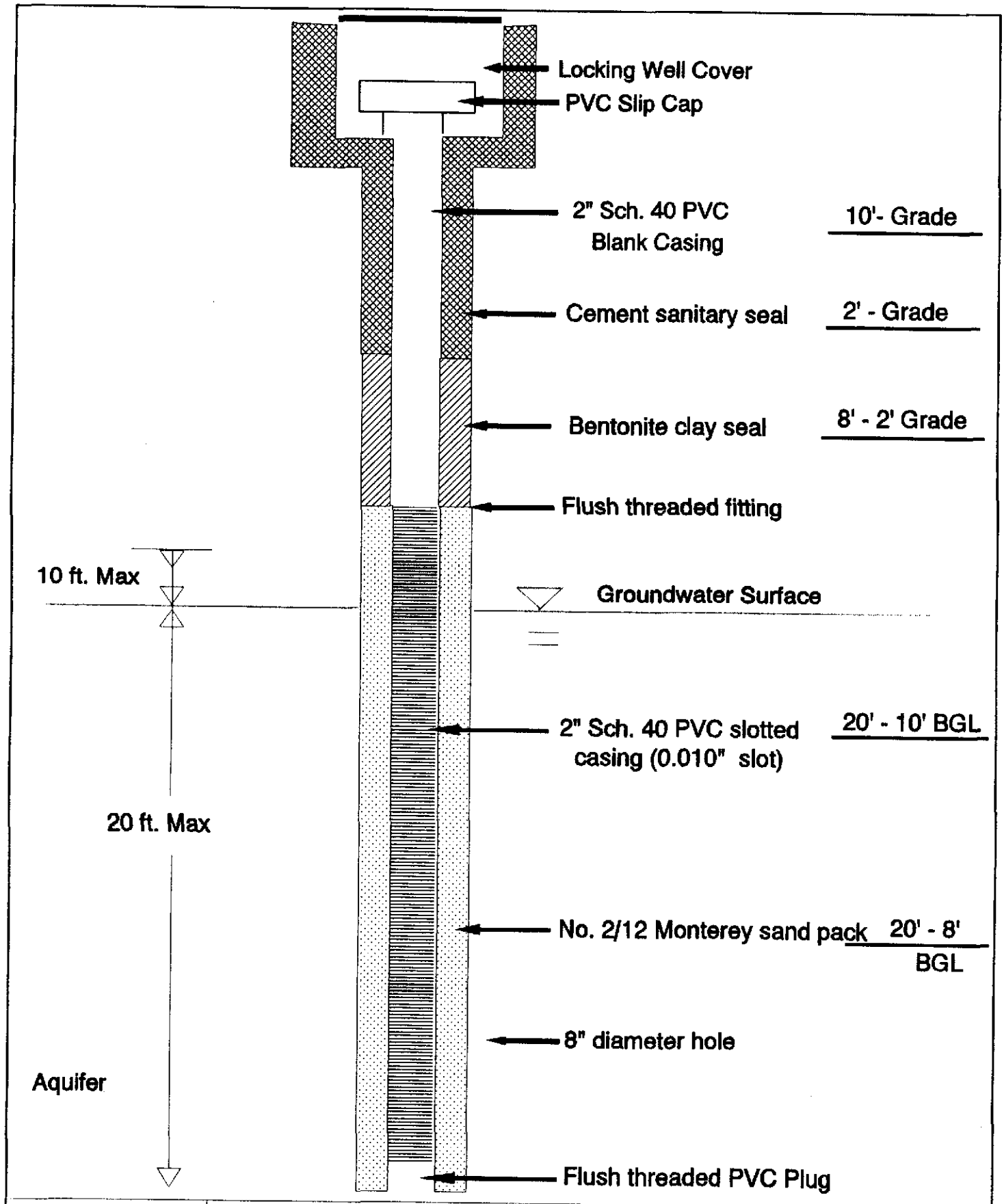


Diagram of Groundwater Monitoring Well

FIGURE 3

Health & Safety Plan

for

Warren Dodson Property

240 West MacArthur Boulevard
County of Alameda • Oakland, California

Introduction:

A Site Safety Plan (SSP) has been designed to address safety provisions needed during the site soil assessment/remediation. Its purpose is to provide established procedures to protect all on-site personnel from direct skin contact, inhalation, or ingestion of potentially hazardous materials that may be encountered at the site. The SSP establishes personnel responsibilities, personal protective equipment standards, decontamination procedures and emergency action plans.

Advanced Environmental Concepts, Inc. seeks to enter the property described above for the purpose of conducting a site assessment. The work will consist of hollow-stem augering and soil sampling in order to access hydrocarbon-impacted soil and groundwater.

Undisturbed soil samples will be collected to assess the extent of hydrocarbon impacted soil at the subject site. Each sample to be chemically analyzed will be collected in a brass sleeve, capped with lined plastic lids, sealed with tape, and immediately stored in a cooler with frozen Blue Ice immediately. All Chain-of-Custody protocol will be followed.

Drilling equipment will be brought to the site and operated by:

Gregg Drilling
1014 E. South Street
Anaheim, California 92805

Contractor's License # C57-574490

This SSP describes the means for protecting all on-site personnel from deleterious contamination of personal injury while conducting on-site activities. As described below, we will strive to meet all requirements promulgated by the California Department of Health Services.

Responsibilities of Key Personnel:

All personnel on-site will have assigned responsibilities. Mr. Jonathan L. Buck will serve as Project Manager and on-site geologist. He will also serve as Site Safety Officer (SSO). As SSO, Mr. Buck will assure that on-site personnel have received a copy of the SSP. Personnel will be required to document their full understanding of the SSP before admission to the site. Compliance with the SSP will be monitored at all times by the SSO. Appropriate personal protective equipment, listed below, will be available and utilized by all on-site personnel. Prior to beginning work, the SSO will conduct a training session to assure that all are aware of safe work practices. In the training session, personnel will be made aware of hazards at the site.

Mr. Buck will also be responsible for keeping field notes, collecting and securing samples, and assuring sample integrity by adherence to Chain-of-Custody protocol.

All on-site employees will take reasonable precautions to avoid unforeseen hazards. After documenting their understanding of the SSP, each on-site employee will be responsible for strict adherence to all points contained herein. Any deviation observed will be reported to the SSO and corrected. On-site employees are held responsible for performing only those tasks for which they believe they are qualified. Provisions of this SSP are mandatory and personnel associated with on-site activities will adhere strictly hereto.

Job Hazard Analyses:

Hazards likely to be encountered on-site include those commonly encountered when operating any mechanical equipment, such as the danger of falling objects or moving machinery. Simple precautions will reduce or eliminate risks associated with operating such equipment.

A drilling contractor has been employed to deliver and operate all drilling equipment. Qualified personnel only will have any contact with this equipment. All on-site personnel, including the excavation contractor and his employees, are required to wear hard hats when in close proximity to excavating equipment. Latex sampling gloves will be worn by persons collecting or handling samples to prevent exposure to contaminants. Gloves will be changed between samples and used ones discarded, to avoid cross-contamination. Proper respiratory equipment will be worn if vapor contamination levels on-site exceed action levels as determined using a Photoionization Detector (PID). Action levels requiring respiratory apparatus will be 10-ppm above background level in the breathing zone. Furthermore, no on-site smoking, open flames or sparks will be permitted in order to prevent accidental ignition.

Risk Assessment Summary:

Exposure to chemicals anticipated on-site include gasoline, diesel, and benzene, toluene, and xylene (BTX). These chemicals represent a hazard because they are moderately to extremely toxic and most are highly flammable.

Threshold Limit Values (TLV's), Short Term Exposure Limits (STEL's) and Toxicity levels (LD50, oral-rat), all in mg/kg (ppm), are listed below:

Compound	STLV	STEL	Toxicity
Gasoline	200	300	----
Diesel	50	75	----
Benzene	10	25	4894
Toluene	100	150	5000
Xylene	100	150	4300

Benzene is considered an extreme cancer hazard.

Exposure Monitoring Plan:

A PID will be used to monitor vapor concentrations around the site. Should concentrations exceed TLV's, protective measures will be taken. Passive dosimeter badges will be placed in downwind locations if PID readings indicate high levels of volatile organics in the breathing space.

Personal Protective Equipment:

Personnel on-site will have access to respirators with organic vapor cartridges. Replacement cartridges will be available on-site as needed. When handling samples, the on-site Geologist will wear latex gloves. Hard hats will be worn by all personnel on-site when in proximity of drilling equipment.

Work Zones and Security Measures:

Access to the site will be restricted to authorized personnel. A set of cones, placards, or wide yellow tape surrounding the site will define the perimeter, if needed. The Project Manager will be responsible for site security.

Decontamination Measures:

Avoidance of contamination whenever possible is the best method for protection. Common sense dictates that on-site personnel avoid sitting, leaning or placing equipment on possible contaminated soil. All personnel will be advised to wash their hands, neck and face with soap and water before taking a break or leaving the site. Respirators will be washed with soap and water following each day's use.

Drilling and sampling equipment used will be decontaminated by steam-cleaning. Sampling equipment will be decontaminated before each sample is collected.

General Safe Work Practices:

On-site personnel will be briefed each day in "tailgate" meetings as to the day's goals and equipment to be used. Anticipated contaminants and emergency procedures will be reviewed. Appropriate personal protective equipment will be put on and verified correct by the SSO, including respirator fit.

Drilling and sampling equipment will be steam-cleaned before arriving on-site. Split-spoon sampling equipment will be cleaned before each use. Augers will be steam-cleaned between borings.

The on-site engineer will oversee operations and log borings. The Sample Coordinator will assure that proper protocol is used at all times in collecting and handling samples.

Training Requirements:

The SSO will conduct a "tailgate" training session before work begins which will include contaminant properties, warning signs, health hazard data, risk from exposure and emergency first aid. All chemicals are to be covered and the SSO will assure that everyone fully understands site hazards.

Medical Surveillance Program:

According to CFR 29, 1910.120, Paragraph (f), employees who wear respirators thirty (30) days or more during one (1) year or who have been exposed to hazardous substances or health hazards above established permissible exposure limits are required to be monitored medically. All site personnel are required to have had a complete physical (including blood chemistry) within the past year.

Record Keeping:

Documentation will be kept on personnel exposed to contaminant hazards on the job site according to OSHA regulations. These will include documentation that employees have received training on the SSP, respiratory protection, MSDS forms and all emergency procedures. These will be reviewed during the pre-work training meeting.

Exposure records on each job will be kept for thirty (30) years to meet requirements. Included will be names and social security numbers of employees, medical evaluations, on-the-job logs from entry to exit, First Aid administered, visits on-site by outside persons and personal air-monitoring records.

Contingency Plans:

In the event of an accident, injury, or other emergency, the Project Director, Senior Project Manager, or other person, will notify the appropriate government agencies or individuals as follows:

1. Alameda County
   Health Care Services
   1131 Harbor Bay Parkway, Suite 250
   Alameda, CA
   (510) 567-6700

2. Police, Fire, or Ambulance Emergency
   9 - 1 - 1

3. Emergency Hospital:
   Kaiser Hospital
   280 W. MacArthur Boulevard
   Alameda, CA 94611
   (510) 596-1000

I have read the Health and Safety Plan and understand the contents herein:

NAME:	COMPANY