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Dana Thurman  
Project Manager

**RECEIVED**

By DEHLOPTOXIC at 9:04 am, Jun 30, 2006

June 23, 2006

(date)

**ChevronTexaco**

Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: Chevron Service Station # 9-8341

Address: 3530 MacArthur Blvd, Oakland, California

I have reviewed the attached report titled Revised - Investigation Workplan  
and dated June 23, 2006.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Cambria Environmental Technology, Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,



Dana Thurman  
Project Manager

Enclosure: Report

Mr. Barney Chan  
Alameda County Health Care Services Agency (ACHCS)  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Re: **Revised Investigation Workplan**  
Chevron Service Station # 9-8341  
3530 MacArthur Boulevard  
Oakland, California



Dear Mr. Chan:

Cambria Environmental Technology, Inc. (Cambria) is submitting this *Revised Subsurface Investigation Workplan* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. Cambria proposes advancing six soil borings with depth discrete groundwater sampling to further define the lateral and vertical extent of hydrocarbons in soil and groundwater. The site background and the proposed scope of work are described below.

## **SITE DESCRIPTION AND BACKGROUND**

The site is currently an active United Gasoline branded service station located on the northern corner of the intersection of MacArthur Boulevard and Magee Avenue in Oakland, California (Figure 1).

The site is approximately 210 feet above sea level and local topography slopes gently toward the southwest. The site is surrounded by small commercial properties, with residential properties located upslope to the northeast. Current station facilities include a station building with two dispenser islands beneath a common canopy. Three gasoline USTs, in a common pit, are located directly north of dispenser islands (Figure 2).

The site was previously occupied by a Chevron station until February 2004. Chevron renovated the site in 1994. As part of renovation activities, one 1,000-gallon single-walled fiberglass used-oil underground storage tank (UST) with associated product lines was replaced at the site.

**Site Geology:** Sediments beneath the site are characterized as alluvial deposits, consisting primarily of sand, sandy clay, silty clay, silty sand, silt and gravel with silt and sand to the total depth explored of 45 feet below grade (fbg).

**Cambria  
Environmental  
Technology, Inc.**

2000 Opportunity Drive  
Suite 110  
Roseville, CA 95678  
Tel (916) 677-3407  
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**Site Hydrology:** Depth to groundwater has varied from approximately 2.5 fbg to 10 fbg. Groundwater flow has been predominantly southward to southeastward at a gradient ranging from 0.02 to 0.08. A rose diagram showing the flow direction and gradient since 1999 is presented in Figure 2. The nearest surface water to the site is Peralta Creek located approximately 400 feet north-northwest of the site and a small ephemeral creek is located approximately 1,200 feet west of the site.

## PROPOSED SCOPE OF WORK



To evaluate the lateral and vertical extent of hydrocarbons in soil and groundwater, Cambria proposes one up-gradient and five down-gradient Geoprobe® soil borings with discrete grab groundwater samples. Boring locations are shown on Figure 2. Cambria's standard operating procedures are presented as Attachment A. The specific scope of work is discussed below.

**Underground Utility Location:** Cambria will notify underground service alert (USA) prior to field work to clear boring locations with utility companies. A private utility line locator will be contracted to additionally clear boring locations of utility lines.

**Site Health and Safety Plan:** Cambria will prepare a site safety plan to inform site workers of known hazards and to provide health and safety guidance. The plan will be kept on site at all times and signed by all site workers.

**Permits:** Cambria will obtain boring permits from the Alameda County Health Services Agency (ACHSA) and an encroachment permit from the City of Oakland prior to beginning field operations. A minimum of 72-hours notice will be given to the ACHSA prior to field work.

**Soil borings:** Cambria proposes advancing six Geoprobe® soil borings. After clearing to 8 fbg using a hand auger to ensure no utilities are present, each boring will be advanced to approximately 15 feet below first encountered groundwater. Soil will be logged and sampled at 5 foot intervals beginning at 5 fbg. Upon completion of each boring and collection of groundwater sampling as described below, the borings will grouted to surface with neat Portland cement. Cambria's Standard Field Procedures are presented as Attachment A.

**Soil Screening:** Soil samples will be screened using a photoionization detector (PID). PID readings, evidence of discoloration, stratigraphic location, the depth to groundwater, and the collection depth of previous samples containing hydrocarbons will be used to select soil samples for laboratory analysis.

**Grab Groundwater Sampling:** A grab groundwater sample will be collected from each borehole at first encountered groundwater, and a second sample will be collected at approximately 10 to 15 feet below first encountered water. The ground water samples will be decanted into the appropriate containers supplied by the analytic laboratory. Samples will be labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

**Chemical Analysis:** The grab-groundwater and select soil samples will be analyzed for:

- TPHg by Northern California LUFT method,
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), fuel oxygenates methyl tert-butyl ether (MTBE), tert-butyl alcohol (TBA) di-isopropyl ether (DIPE) tert-amyl methyl ether (TAME) and ethyl tert-butyl ether (ETBE) by EPA Method 8260B, and
- Ethanol by EPA Method 8260B.



**Soil and Water Disposal:** Soil cuttings will be temporarily stockpiled and covered with plastic or placed in sealed DOT-approved drums on-site. Rinse water will be stored in drums pending proper disposal. Following review of laboratory analytical reports, wastes will be transported to a Chevron approved disposal facility.

**Reporting:** Upon completion, Cambria will document all field activities and analytical results in a report that, at a minimum, will contain:

- A brief summary of the site background and history,
- Boring logs,
- Tabulated soil and groundwater sample analytic results,
- A figure illustrating the location of the borings,
- Analytic reports and chain-of-custody forms,
- Soil/water disposal methods,
- A discussion of hydrocarbon and oxygenate distribution at the site, and
- Cambria's conclusions and recommendations.

## SCHEDULE

Cambria will coordinate and perform the above activities after receiving written approval of this work plan from the ACHCS. Cambria will submit an investigation report approximately six to eight weeks after completion of field activities.

**CLOSING**

We appreciate this opportunity to work with you on this project. Please contact Mr. John Bostick at (916) 677-3407 (ext. 107) if you have any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc.**



John Bostick  
Staff Scientist

David W. Herzog  
Senior Project Geologist # 7211

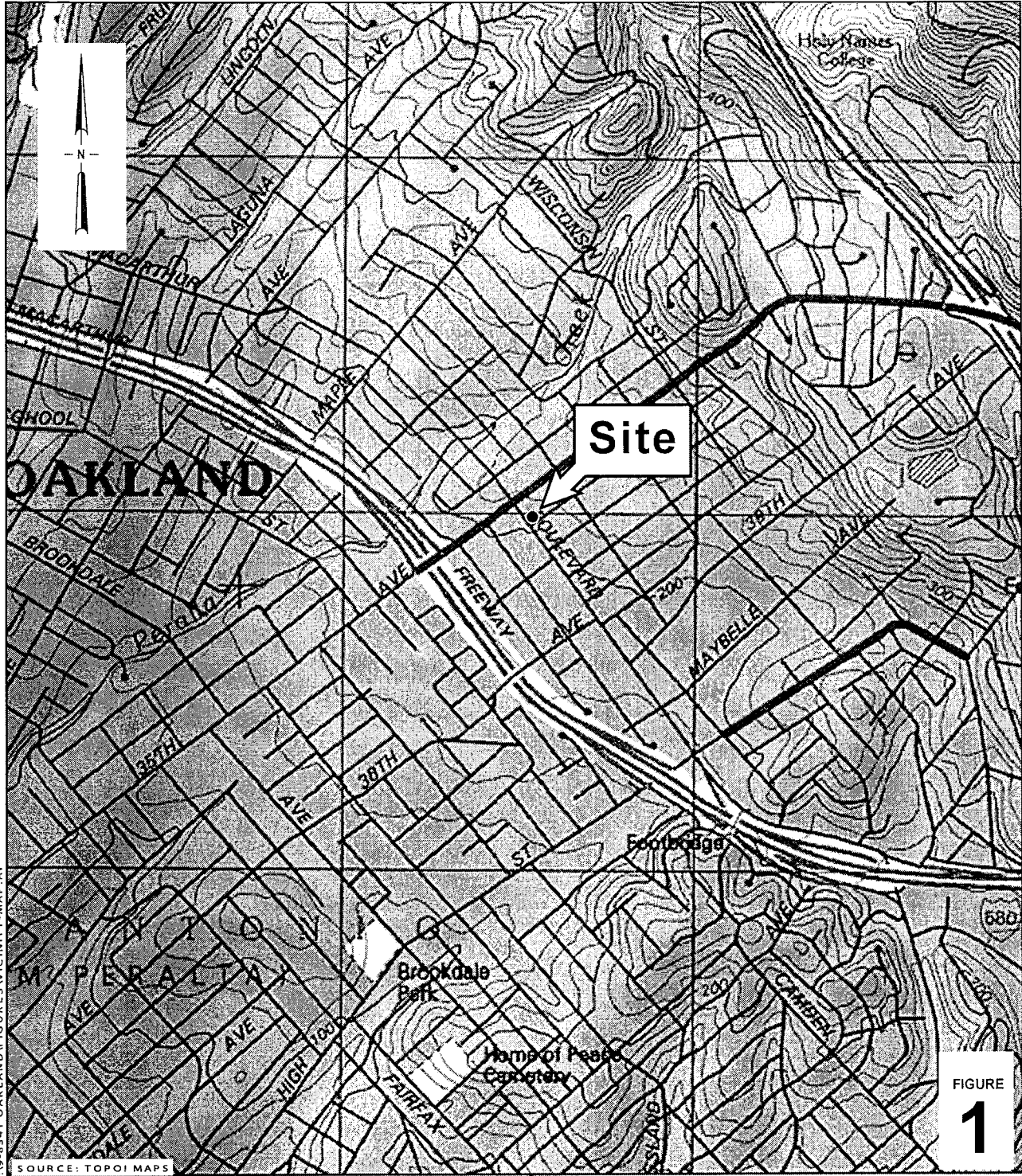


Figures:        Figure 1 – Vicinity Map  
                     Figure 2 – Site Plan

Attachments:   A - Standard Field Procedures for Soil Borings

cc:                Mr. Dana Thurman, Chevron Environmental Management Company  
                     P.O. Box 6012, K2236, San Ramon, CA 94583

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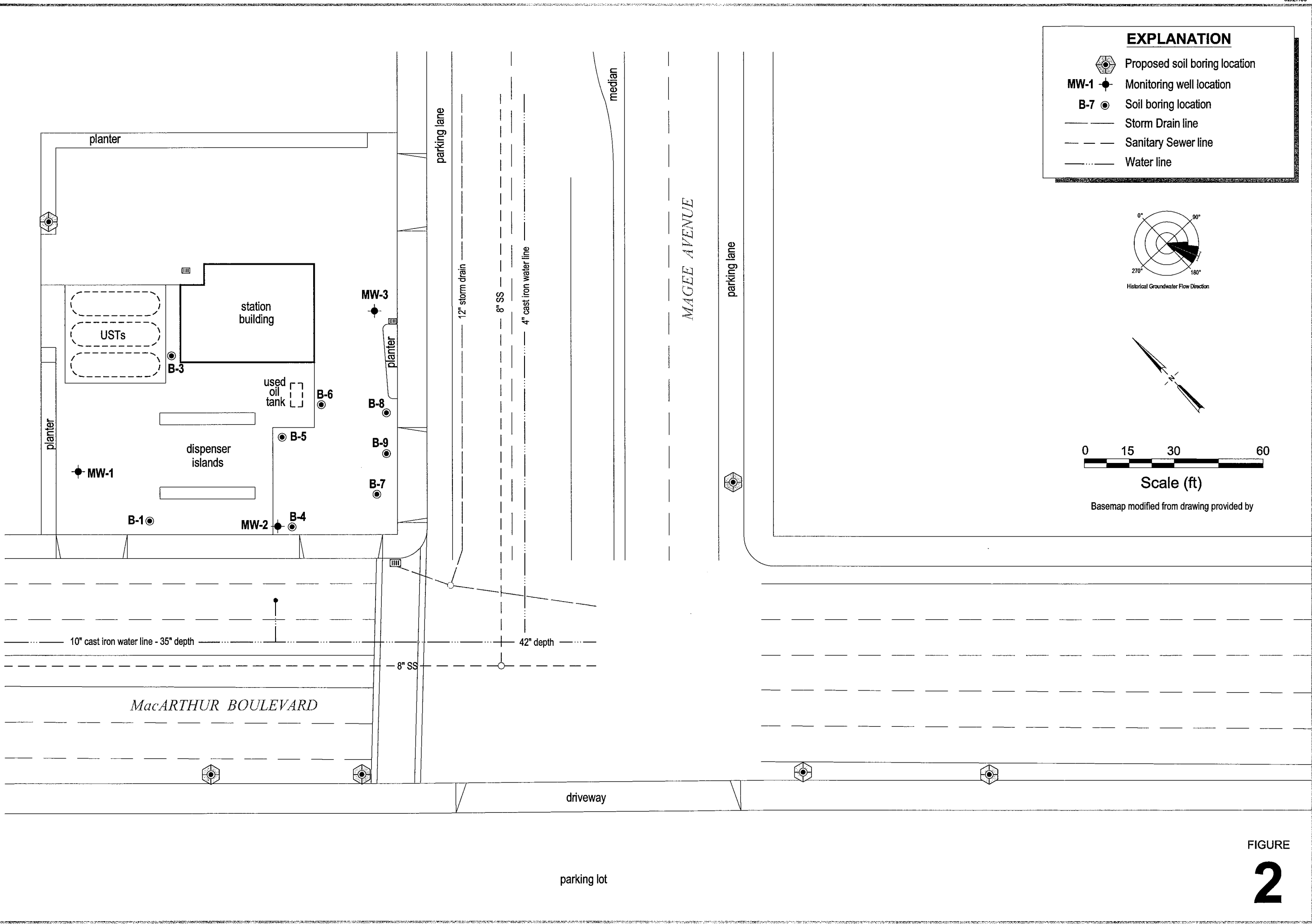
**Chevron Service Station 9-8341**  
 3530 Mac Arthur Boulevard  
 Oakland, California



C A M B R I A

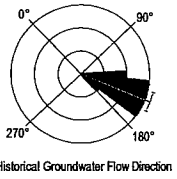
Vicinity Map

R:\9-8341\FIGURES\9-8341\_SITPLAN W-PROP BOR LOC.DWG



**EXPLANATION**

- Proposed soil boring location
- MW-1** Monitoring well location
- B-7** Soil boring location
- Storm Drain line
- Sanitary Sewer line
- Water line



Scale (ft)

0 15 30 60

Basemap modified from drawing provided by

FIGURE 2

C A M B R I A



**ATTACHMENT A**

**Standard Field Procedures for Soil Borings**



## STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Cambria Environmental Technology, Inc.'s standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

### Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

### Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Professional Geologist (PG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration, and
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy).

### Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

### Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

## **Field Screening**

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

## **Water Sampling**

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

## **Duplicates and Blanks**

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

## **Grouting**

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

## **Waste Handling and Disposal**

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.