Chevron

July 9, 1999

Chevron Products Company
6001 Bollinger Canyon Road
Building L, Room 1080
PO Box 6004
San Ramon, CA 94583-0904

Philip R. Briggs
Project Manager
Site Assessment & Remediation
Phone 925 842-9136
Fax 925 842-8370

Mr. Scott Seery
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station #9-6991
2920 Castro Valley Blvd., Castro Valley, California

Dear Mr. Seery:

Enclosed is the Subsurface Utility Investigation Workplan that was prepared by our consultant Cambria Environmental Technology, Inc. for the above noted site. This workplan was prepared in response to your letter of June 16, 1999, requesting an intrusive evaluation of the sewer trenches that skirt the site.

Cambria will install three to four soil borings by direct push technology and will collect soil samples directly above the water table in the unsaturated zone and groundwater samples will be obtained at about 10 to 12 feet below grade in the utility trench backfill.

Cambria is ready to proceed with the work outlined upon your approval. Any questions or comments to the work plan should be directed to Mr. Robert Foss of Cambria at (510) 420-3330 or to me at (925) 842-9136.

Sincerely,
CHEVRON PRODUCTS COMPANY

Philip R. Briggs
Site Assessment and Remediation Project Manager

Enclosure

Cc. Bill Scudder, Chevron

Mr. Chuck Headlee
RWQCB-San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Robert Foss
Senior Project Geologist
Cambria Environmental Tech., Inc.
1144 65th Street, Suite B
Oakland, CA 94608 (less report)

CAMBRIA

June 28, 1999

Mr. Scott Seery
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Subsurface Utility Investigation Workplan**
Chevron Station #9-6991
2920 Castro Valley Blvd
Castro Valley, California
Cambria Job No.310-1633

Dear Mr. Seery:

In response to a request from the Alameda County Department Health Care Services Department of Environmental Health (ACDEH), Cambria Environmental Technology, Inc. (Cambria) has prepared this Subsurface Utility Investigation Workplan on behalf of Chevron. The objective of this investigation is to determine if subsurface utility trenches are acting as conduits for the migration of contaminants and if residual soil and groundwater contamination poses a risk to human health. The site description, background, and current conditions, and Cambria's proposed scope of work are presented below.

SITE DESCRIPTION

The site is located at the northeast corner of Castro Valley Blvd. and Anita Ave. in a commercial area of Castro Valley, California (Figure 1). A dry cleaner is located across Anita Ave. to the west of the site. The site elevation is approximately 170 feet (ft) above mean sea level and the topography slopes gently southward toward South Reservoir, a distance of approximately 0.7 mile. The nearest surface water is an unnamed intermittent creek approximately 1,100 ft west of the site. Chevron owns the site property and has operated a service station there from 1961 to the present. The service station was remodeled into its current configuration in 1990 and presently operates with three fuel underground storage tanks (USTs) and two dispenser islands.

The site is located within the Castro Valley groundwater basin in a valley between ridges of the Diablo Range. The unconfined water-bearing zone lies within unconsolidated alluvial sediments and exhibits a generally southwest flow direction toward San Francisco Bay. These water bearing

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

sediments overlie the sedimentary Chico Formation, considered a non-water-bearing formation based on its historically poor groundwater yields.

SITE BACKGROUND

1990 Tank Removal/Station Remodel: In September 1990, Chevron removed one 1,000 gallon waste oil UST and one 6,000 gallon unleaded gasoline UST from the site and left three existing gasoline USTs in place. All product piping at the site was removed and replaced. Records indicate that approximately 700 cubic yards of soil was excavated during tank removal activities. Samples taken beneath the product lines and USTs showed only low concentrations of TPHg, TPHd, benzene and O&G in the remaining unsaturated soil.

1991 Well Installation: In September 1991 Groundwater Technology Inc. (GTI) installed three 3/4 inch wells, MW-1, MW-2 and MW-3.

1992 Well Installation: In September and October 1992 GTI installed three 2 inch diameter wells, MW-4, MW-5 and MW-6 to further define the extent of hydrocarbons in soil and groundwater beneath the site.

1993 Offsite Source Investigation: In March 1993 GTI reviewed public project files of RWQCB and ACDEH and reviewed Castro Valley Sanitary District maps in an attempt to determine possible sources of hydrocarbons detected in well MW-6 on the south side of Castro Valley Blvd. The former service station site at 2896 Castro Valley Blvd. was determined to be a possible source, as was the 36 inch diameter storm drain line located adjacent to MW-6.

1995 Well Installation: Well MW-7 was installed in August 1995 to further assess soil and groundwater conditions in the vicinity of the former pump islands and exsting USTs.

SITE CONDITIONS

Site Lithology: The site is primarily underlain by clay and silty clay with lesser amounts of sand and gravel. Groundwater occurs primarily within dense clayey sand with interbedded clay and silty clay.

Nearby Subsurface Utilities: Castro Valley Department of Public Works and East Bay Municipal Utilities District (EBMUD) were contacted regarding utilities. Buried utilities adjacent to the site include the following:

- one sanitary sewer line beneath Anita Ave,
- two sanitary sewer lines beneath Castro Valley Blvd,
- a storm drain in Castro Valley Blvd. with a 60 ft long lateral up Anita Avenue,
- an EBMUD water line beneath Anita Ave. and
- two water lines beneath Castro Valley Blvd.

Groundwater Monitoring Wells: Chevron maintains five onsite and two offsite wells at this location. Currently 4 of the 7 wells are monitored and sampled. Well MW-1 is sampled annually, well MW-2 is sampled semi-annually and wells MW-3 and MW-7 are sampled quarterly.

Groundwater Depth: Historically, depth to groundwater beneath the site has varied from approximately 8 ft bgs (MW-3, 10/91) to a maximum depth of 12 ft bgs (MW-2, 10/92). Groundwater elevations in individual wells have fluctuated seasonally by as much as 3.33 ft.

Groundwater Flow Direction and Gradient: Groundwater flow direction has ranged from northwest to southeast with an approximate average gradient of 0.01 ft/ft.

Hydrocarbon Concentrations in Groundwater: The highest hydrocarbon concentrations in groundwater are present in the areas down-gradient of the former dispenser islands and the USTs. These general areas are monitored by wells MW-2 and MW-7, respectively. Recent groundwater sampling performed in March 1999 detected TPHg concentrations ranging from <250 (MW-2) to 1280 ppb (MW-7), benzene concentrations from <5.0 ppb (MW-7) to 14.8 ppb (MW-1) and MTBE concentrations from <2.5 ppb (MW-1) to 5850 ppb (MW-3).

PROPOSED SCOPE OF WORK

To determine whether the subsurface utilities adjacent to the subject site are providing for preferential migration of groundwater and, if so, to assess the potential risk of this contaminant transport to human health, Cambria proposes to perform the following tasks.

Underground Utility Location: Cambria will contact Underground Service Alert and Alameda County Public Works and use an underground utility locator to more precisely locate subsurface utilities along Anita Avenue and Contra Costa Blvd. to insure proper placement of borings prior to performing any drilling/sampling activities. Based on the results of the utility search, Cambria will conduct the boring program described below.

Site Health and Safety Plan: Cambria will prepare a site safety plan to protect site workers. The plan will be kept on site at all times and signed by all site workers.

Permits: Cambria will obtain soil boring permits from the ACDEH and an encroachment permit from the City of Castro Valley, prior to beginning drilling/sampling activities.

Soil Borings and Sample Collection: Cambria proposes drilling 3 to 4 soil borings along subsurface utilities by Geoprobe® direct push technology. The proposed borings are located based on predominant historic groundwater flow direction and intermittent variations. Because of the tight spacing of utilities, the first three feet of each boring will be hand augered Soil samples will be collected directly above the watertable in the unsaturated zone and groundwater samples will be obtained at approximately 10 to 12 ft below ground surface (bgs) in the utility trench backfill. Based on field screening results, additional soil boring locations may be proposed. Grab groundwater samples will be collected from each soil boring using a clean disposal bailer. All soil and groundwater samples will be placed in an iced cooler and transported under chain of custody to a State-certified laboratory for analysis. Soil borings will be grouted to the surface with neat cement and their horizontal location will be measured in the field relative to a permanent onsite reference using a measuring wheel or tape measure. Cambria's standard field procedures for Geoprobe® boring installation and soil and grab groundwater sampling are presented as Attachment A.

Chemical Analysis: Selected soil samples and groundwater samples will be analyzed for:

- TPHg as gasoline by modified EPA Method 8015,
- TPHd as diesel by modified EPA Method 8015 (with silica gel cleanup),
- Benzene, toluene, ethyl benzene, xylene (BTEX), and MtBE by EPA Method 8020, and
- MtBE confirmation and other oxygenates by EPA Method 8260.

Mr. Scott Seery
June 28, 1999

Reporting: After the analytical results are received, a subsurface investigation report will be prepared that, at a minimum, will contain:

- A summary of the site background and history,
- Descriptions of the drilling and sampling methods,
- Tabulated analytical results,
- A figure illustrating sampling locations and subsurface utilities,
- Analytical reports and chain-of-custody forms,
- A discussion of the hydrocarbon distribution along the subsurface utilities adjacent to the site,
- An evaluation of potential migration along the utility pathways and,
- Conclusions and recommendations

SCHEDULE

Cambria will perform the proposed activities following written approval of the work plan from the ACDEH. We will submit the subsurface investigation report approximately six weeks after completing the field activities. If you have any questions or comments please contact Robert Foss at (510) 420-3330.

Sincerely,
Cambria Environmental Technology, Inc.

Robert Foss

Robert Foss
Senior Project Geologist

Stephan Bork, CEG, CHG
Senior Project Hydrogeologist

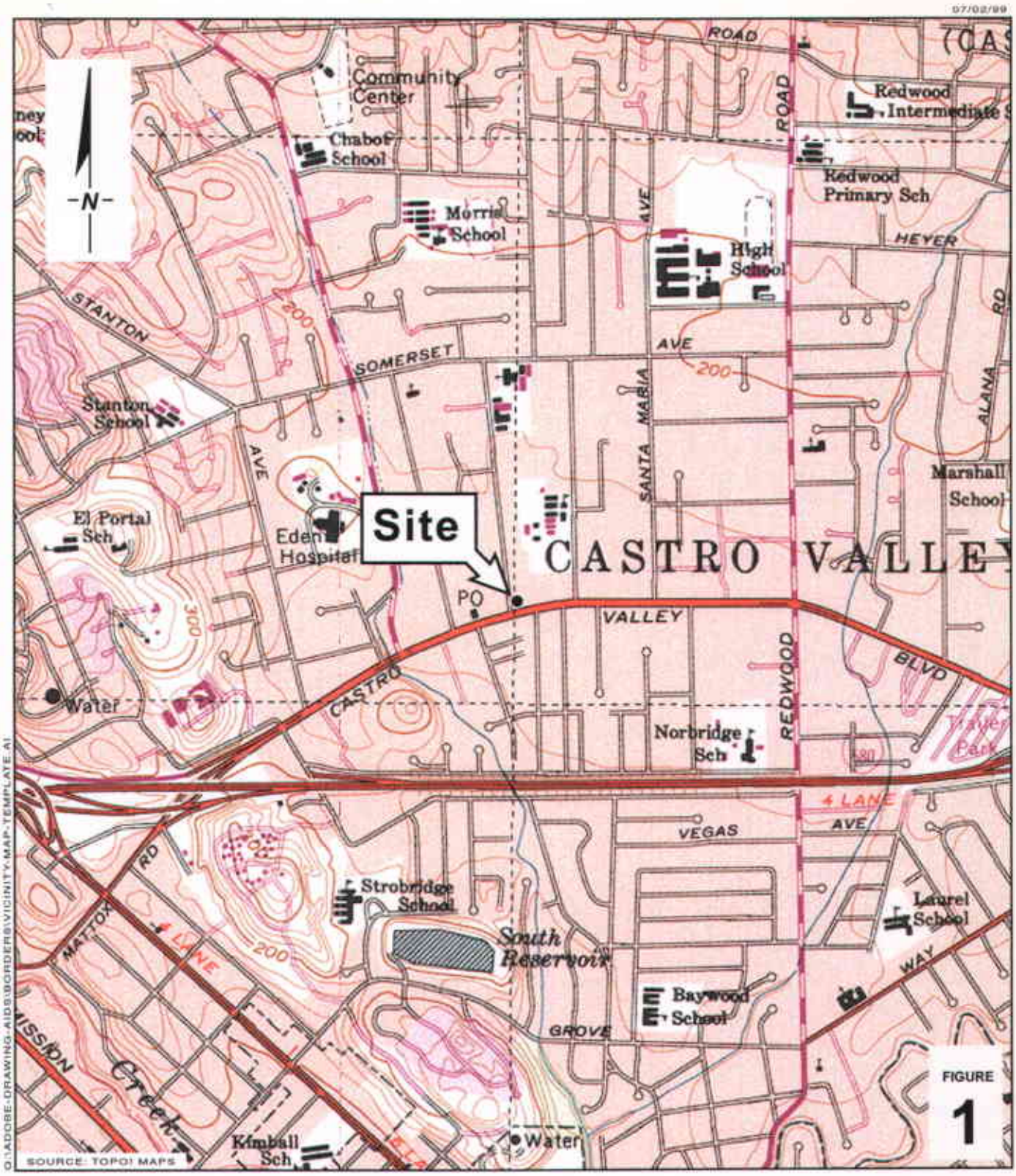
REGISTERED GEOLOGIST
STEPHAN A. BORK
No. HG 425
CERTIFIED
HYDROGEOLOGIST
STATE OF CALIFORNIA

cc: Mr. Phil Briggs, Chevron Products Company
Mr. Bill Scudder, Chevron Products Company (w/o attachments)

Mr. Scott Seery
June 28, 1999

Figures: 1 - Site Vicinity Map
2 - Proposed Geoprobe® Boring Locations

Attachments: A - Standard Field Procedures for Geoprobe® Sampling



Chevron Service Station 9-6991

2920 Castro Valley Boulevard

Castro Valley, California

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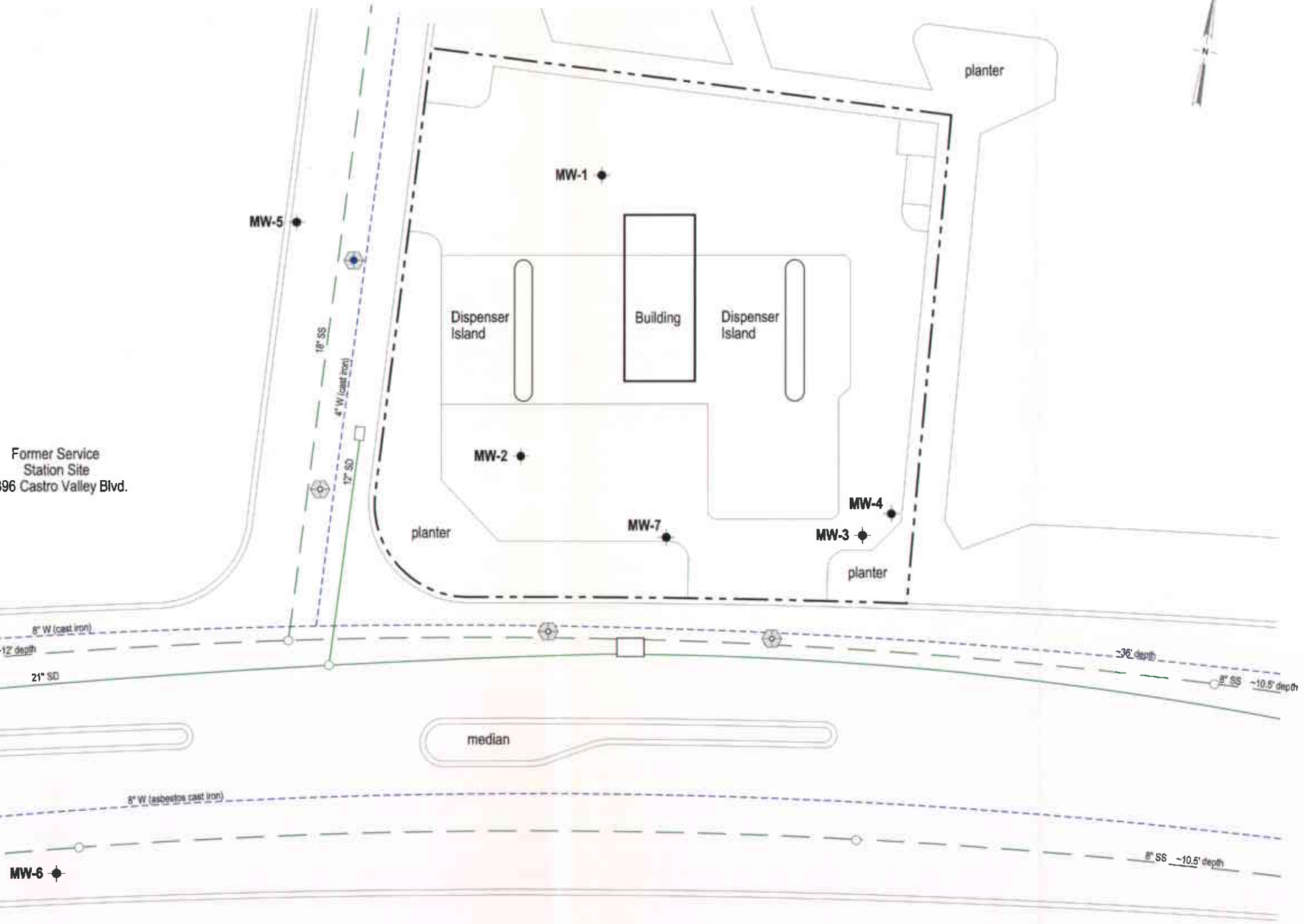
Vicinity Map

EXPLANATION

- MW-1 ● Monitoring Well Location
- Proposed Geoprobe Location
- Contingent Geoprobe Location
- Storm Drain
- Water Line
- Sanitary Sewer



FIGURE

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Conduit Study Map

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Chevron Service Station 9-6991
2920 Castro Valley Boulevard
Castro Valley, California

I:\9-6991 CASTRO VALLEY\FIGURES\UTILITIES.DWG

ATTACHMENT A

Standard Field Procedures
For Geoprobe® Sampling

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STANDARD FIELD PROCEDURES FOR GEOPROBE® SAMPLING

This document describes Cambria Environmental Technology's standard field methods for GeoProbe® soil and ground water sampling. 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 Registered Geologist (RG) 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 separate-phase hydrocarbon saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

GeoProbe® soil samples are collected from borings driven using hydraulic push technologies. A minimum of one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples can be collected near the water table and at lithologic changes. Samples are collected using samplers lined with polyethylene or brass tubes driven into undisturbed sediments at the bottom of the borehole. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned or washed 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

After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Grab Ground Water Sampling

Ground water samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting ground water using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. 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 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 quality assurance/quality control (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.