A·C·C
ENVIRONMENTAL
CONSULTANTS

February 18, 2004

Mr. Joseph Aldridge
727 East 24th Street
Oakland, CA 94606

RE: Revised Limited Subsurface Soil Boring Investigation Work Plan
1636 Trestle Glen Road, Oakland, California
ACHCSA Fuel Leak Case # RO0002599

Dear Mr. Aldridge:

ACC Environmental Consultants, Inc., (ACC) presents this Revised Work Plan (WP) to perform a limited subsurface soil boring investigation in the vicinity of one former underground storage tank (UST) which contained heating oil at 1636 Trestle Glen Road, Oakland, California (Site). The goals of the investigation will be to: 1) further characterize subsurface conditions and define the extent of suspect heating oil impact in soil and groundwater (if present); 2) collect representative soil and grab groundwater samples adjacent to the former heating oil underground storage tank (UST) and analyze samples for heating oil constituents and methyl tertiary butyl ether (MTBE); and 3) prepare a report of findings requesting full regulatory closure. This revised WP incorporates comments of the original WP made by the Alameda County Health Care Services Agency (ACHCSA).

INTRODUCTION

The Site is located along Trestle Glen Road in Oakland, California (Figure 1). While preparing to sell the subject property, a heating oil UST was identified in the front yard of the Site. ACC coordinated and oversaw all heating oil UST removal activities. These activities were summarized in ACC's Heating Oil Tank Removal Report (Report) submitted on October 24, 2003 to the Oakland Fire Services Agency (OFSA).

During removal, the heating oil UST was observed in good condition, with no observable holes. The heating oil UST was found to be in excellent condition and contained heating oil up into the fill pipe prior to removal. However, soil underneath the fill port end for the UST reported total petroleum hydrocarbon as diesel (TPHd) concentrations of 700 and 4,400 milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).

ACC directed the Contractor to excavate to approximately 11 feet below ground surface (bgs) and observed bedrock beneath the former UST. Heating oil-impacted soil generated during excavation was segregated and disposed of properly. Following review of the Tank Removal Report, the OFSA referred the case to the ACHCSA as the lead regulatory agency.

SCOPE OF WORK

In order to further characterize subsurface conditions at the Site in regards to suspect heating oil impact, and address concerns of the ACHCSA, ACC proposes the following scope of work:

- Advance five (5) exploratory soil borings to total depths of approximately sixteen (16) feet below ground surface (bgs) *or* to bedrock refusal anticipated at approximately 12 feet bgs at select locations adjacent to the former heating oil UST (Figure 2);

- Continuously core each soil boring to observe and log each foot of soil encountered and allow continuous screening of encountered soils with a ppbRAE photoionization detector (PID);

- Collect one soil sample in each soil boring at approximately 7 feet bgs (approximately 1 to 2 feet below former tank bottom) and one soil sample at the interface between the silty clay (CL) soil and bedrock at approximately 11 to 12 feet bgs for chemical analysis;

- Collect a minimum of two representative soil and one grab groundwater sample (if groundwater is encountered) in each soil boring in order to maximize the quality of data regarding subsurface conditions, the degree and extent of impact, and further assess the migration potential in soil and groundwater;

- Submit select samples to a state certified analytical laboratory for analysis of TPHd as heating oil by EPA Method 8021 for both soil and groundwater and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8015/8021B for groundwater only;

- Analyze one soil sample and one grab groundwater samples for MTBE by EPA Method 8260B; and

- Prepare a summary report of findings for submission to the ACHCSA. Included with the summary report will be an evaluation of sample analytical results, a discussion of hydrogeological conditions, discussion, and conclusions to approve the Site for regulatory closure as a "low risk groundwater case."

All work will be performed according to SWRCB Resolution No. 68-16, requirements of the DPH-LOP, and Tri-Regional Guidelines set forth by the Regional Water Quality Control Board (RWQCB).

RATIONALE FOR PROPOSED SCOPE OF WORK

ACC proposes to advance five Geoprobe® soil borings to total depths of 16 feet bgs or to bedrock refusal. ACC proposed soil boring locations are shown on Figure 2. Based upon previous subsurface investigation performed during UST removal, ACC believes that five soil borings are more than adequate to assess current residual concentrations of heating oil in soil adjacent to the former heating oil UST, further characterize subsurface conditions, and evaluate the potential for residual heating oil constituents to migrate in the subsurface. Two soil borings (EB-1 and EB-2)will be advanced in proximity to the former heating oil UST and three soil borings (EB-3 through EB-5) will be advanced at appropriate "step out" distances from the former UST. According to the area United States Geologic Survey Topographic Map, Trestle Glen Road is oriented approximately northeast-southwest along Indian Gulch (Figure 3). Indian Gulch and the topographic gradient is to the southwest, therefore "step out" soil borings EB-3, EB-4, and EB-5 are located south and southwest of the former UST.

Exploratory soil boring locations have been chosen based on their proximity to the former UST, physical restrictions at the Site, and the approximate southwest topographic gradient. All soil borings will be continuously cored, with soil logged by a staff geologist and screened for field indications of petroleum hydrocarbon impact such as characteristic odor, soil discoloration, or elevated PID readings. ACC will utilize a ppbRAE PID capable of reading parts per billion volatile constituents in air to aid in prioritizing soil samples for chemical analysis.

During excavation performed at the time of UST removal, ACC observed silty clay soils underlain by competent bedrock. No groundwater or soil capable of becoming saturated was observed and the likelihood of collecting grab groundwater samples is small. To maximize characterizing the competence of bedrock observed at approximately 11 feet bgs, ACC proposes to use a truck-mounted Geoprobe® 5400. This rig has the capability to core through weathered bedrock and refusal is typically only encountered in highly crystalline competent bedrock, and aid in assessing the migration potential of heating oil in the surface bedrock.

To optimize grab groundwater sample collection, perforated PVC pipe will be placed down each soil boring, and the soil boring left open for the maximum time feasible. ACC estimates that soil borings EB-4 and EB-5 can remain open approximately four to five hours, soil boring EB-3 can remain open approximately two to three hours, and soil borings EB-1 and EB-2 can remain open approximately one to two hours. Due to their proximity to disturbed soil around the former heating oil UST, ACC estimates that water will most likely be encountered in these two soil borings and require the minimum time to collect an adequate water sample volume. In addition, ACC will specifically evaluate the moisture content and estimated permeability of encountered soils in each soil boring to aid in evaluating migration potential in the subsurface.

Sample analysis will be for constituents of concern only. ACC proposes that soil samples be analyzed for TPHd by EPA Method 8021 and grab groundwater samples be analyzed for TPHd by EPA Method 8021, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8015/8021B, and one soil sample and one grab groundwater sample (if encountered) be analyzed for MTBE by EPA Method 8260B.

ACC would like to perform this investigation as soon as this Revised Work Plan is approved. ACC will obtain a soil boring permit and can schedule field work within one week of Revised Work Plan approval.

DRILLING PROGRAM

ACC will contact Underground Services Alert to locate any underground public utilities prior to performing boring and sampling activities and obtain the necessary soil boring permit from the Alameda County Public Works Agency (ACPWA). The proposed soil boring locations are illustrated on Figure 2.

The five proposed soil borings will be advanced with a truck-mounted Geoprobe® drilling rig from the surface to a depth of approximately 16 feet bgs or to bedrock refusal. Samples will be collected for analysis from each boring at depths estimated to provide the optimum information about subsurface conditions as summarized in "Scope of Work." All soil and grab groundwater sampling will be performed according to ACC sampling protocols approved by the ACHCSA.

Standard turnaround time for analytical results is 5 working days. Following drilling and sample collection, each soil boring will be abandoned with neat cement to just below the surface (3 to 6 inches). The soil boring will then be completed with concrete or soil to grade to match the surrounding material. Attached are ACC's "Soil Sampling in Boreholes" and "Grab Groundwater Sampling in Boreholes" protocols.

REPORT PREPARATION

A technical report discussing field work, observations and findings, analytical results, conclusions, and recommendations will be prepared for submission to the ACHCSA.

HEALTH AND SAFETY PLAN

A site-specific health and safety plan which encompasses the proposed work at the site and complies with the requirements of 29 CFR Part 1910.120 will be prepared and present during field activities.

If you have any questions or comments, please contact me at (510) 638-8400, ext. 109 or by email me at ddement@accenv.com.

Sincerely,

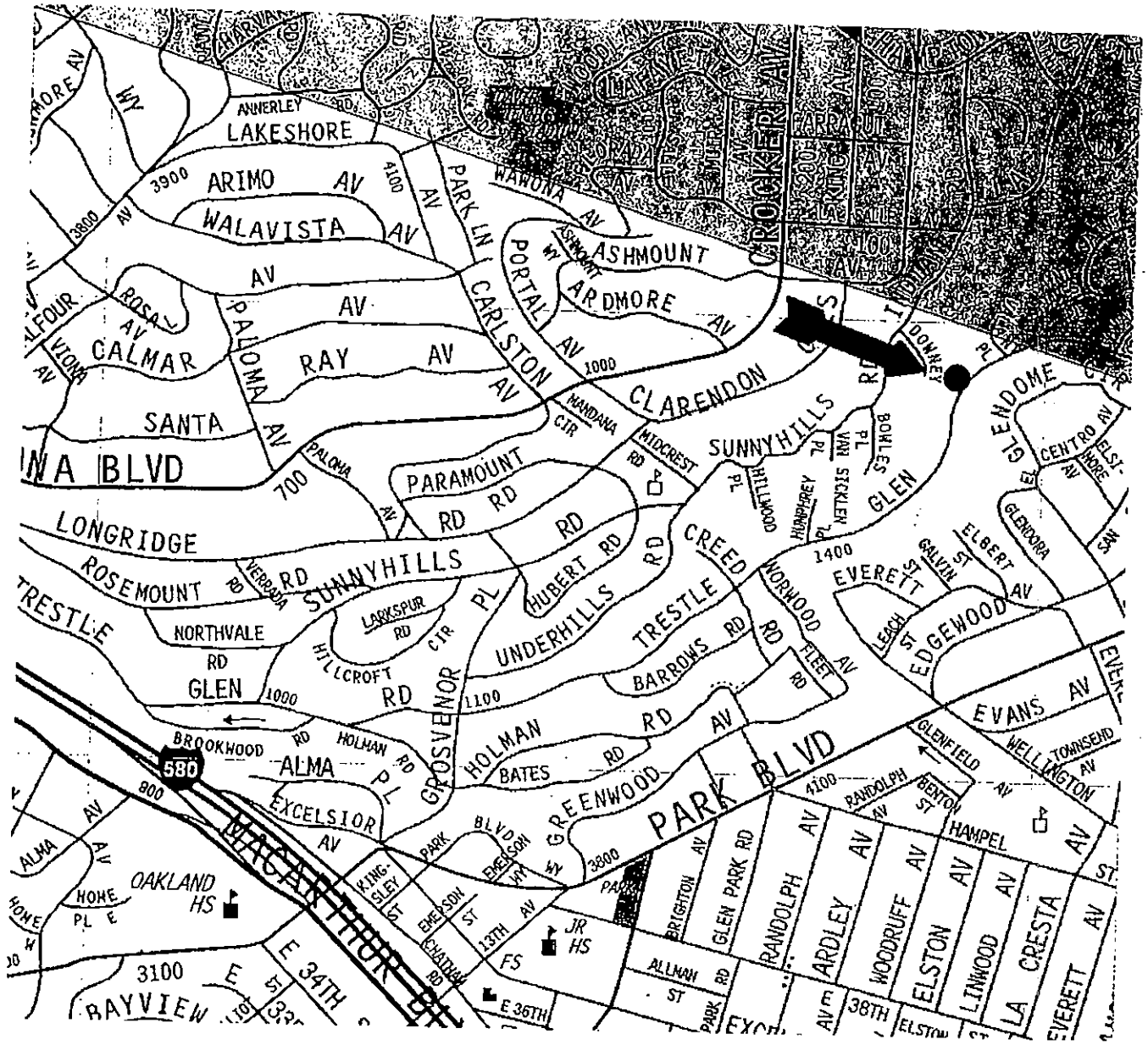
David R. DeMent, RG, REA II
Environmental Division Manager

REGISTERED GEOLOGIST
DAVID R. DEMENT
NO. 5974
STATE OF CALIFORNIA

/trb:drd

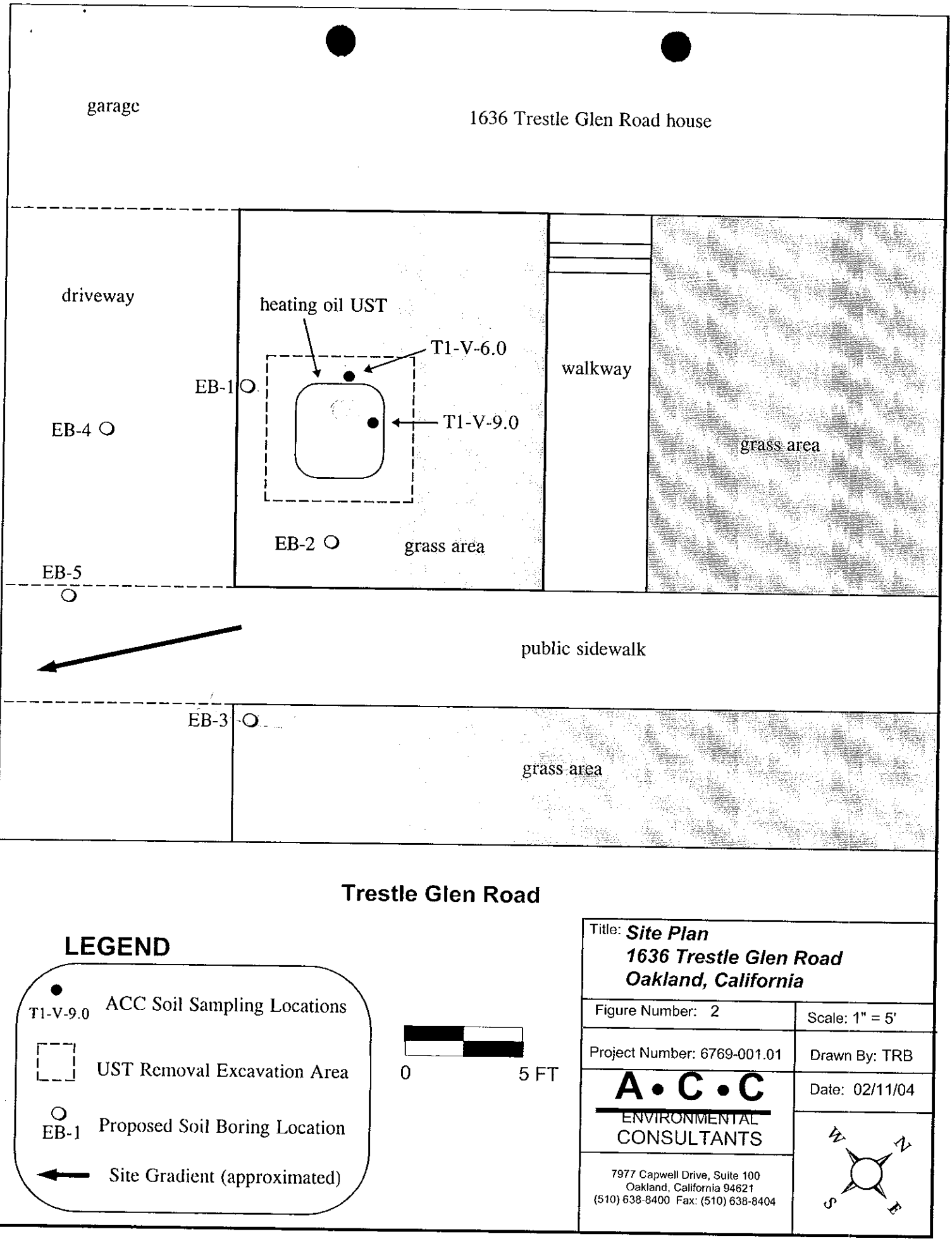
Enclosures

cc: Mr. Don Hwang, ACHCSA



Source: Thomas Guide, Bay Area 2002

Title: ***1636 Trestle Glen Road Oakland, California***	
Figure Number: 1	Scale: None
Project No: 6769-001	Drawn By: TRB
A•C•C ENVIRONMENTAL CONSULTANTS	Date: 10/14/03
7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	N W E S



LEGEND

- T1-V-9.0 — ACC Soil Sampling Locations
- UST Removal Excavation Area
- EB-1 — Proposed Soil Boring Location
- Site Gradient (approximated)

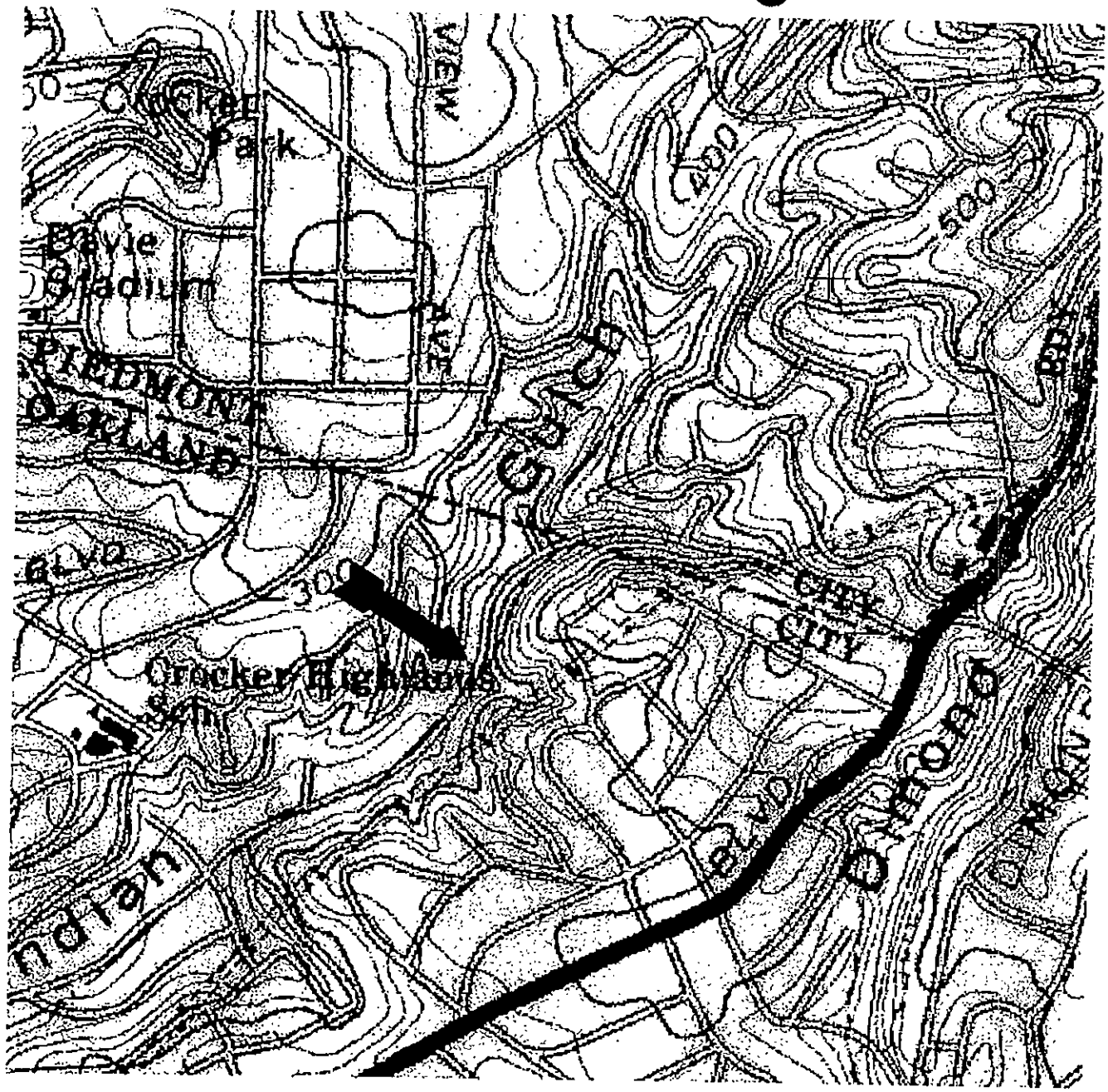
0 5 FT

Title: ***Site Plan***
1636 Trestle Glen Road
Oakland, California

Figure Number: 2	Scale: 1" = 5'
Project Number: 6769-001.01	Drawn By: TRB
A • C • C ENVIRONMENTAL CONSULTANTS	Date: 02/11/04

7977 Capwell Drive, Suite 100
Oakland, California 94621
(510) 638-8400 Fax: (510) 638-8404

W N S E



Source: USGS Datum WGS84

Title: ***Topographic Map 1636 Trestle Glen Road Oakland, California***	
Figure Number: 3	Scale: 1 : 8,000
Project No: 6769-001.01	Drawn By: TRB
A•C•C ENVIRONMENTAL CONSULTANTS	Date: 02/20/04
7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax (510) 638-8404	N W E S

SOIL SAMPLING IN BOREHOLES

U.S. Environmental Protection Agency standards serve as the foundation for all field sampling operations performed by ACC. EPA SW 846 is the primary publication from which procedures are derived. Some aspects of field and laboratory work may be regulated by guidelines of the California Environmental Protection Agency (Cal EPA) Department of Toxic Substances Control (DTSC), the Bay Area Regional Water Quality Control Board (RWQCB), and the Alameda County Health Care Services Agency (ACHCSA).

Sample Intervals

Undisturbed soil samples are generally obtained for chemical analysis and lithologic classification at three to five-foot intervals or at distinct lithologic changes. Sampling in a soil boring that will be converted into a monitoring well begins at approximately five feet below grade.

Collection Devices

When using a mobile drill rig, samples are collected using a 2-inch inside diameter Modified California Split Spoon Sampler containing three six-inch-long brass tubes or two three-inch-long tubes between two six-inch-long brass tubes. The sample collection device and tubes are decontaminated before and after each use by steam cleaning or by an Alconox solution wash, tap water rinse and deionized water rinse. The sampler will be driven ahead of the auger using a 140-pound drop hammer. The average blow counts required to drive the sampler the last 12 inches will be recorded on the boring logs.

When using hydraulic or pneumatic "direct push" sampling devices and stainless steel hydropunch-type samplers, soil samples are collected using a 1-inch or 2-inch inside-diameter stainless steel probe equipped with new, clear acetate liners, either two or four feet long. Either the vertical column of soil is sampled continuously, or if a specific interval is to be investigated, the probe is advanced to the desired depth, the retaining pin removed, and the probe advanced to collect the desired sample interval. The probe containing the undisturbed soil sample is removed from the ground and the process can be repeated for additional intervals of interest. In gravel and coarse-grained soils, stainless steel liners are used if acetate liners are being damaged during the sampling process. The probe ends are dismantled and the liner containing the undisturbed soil sample is removed. Depth intervals selected for analysis are immediately capped with teflon tape and tight fitting plastic caps are placed on each end. All sampled intervals are logged and characterized. The sample collection device is decontaminated before and after each use by steam cleaning or by an Alconox solution wash, tap water rinse and deionized water rinse. The acetate and stainless steel liners are certified clean by the manufacturer. Acetate liners are disposable, and stainless steel liners are recovered, decontaminated, and reused.

Preservation and Handling

After collection, soil sample containers are labeled, sealed at each end with new Teflon® sheeting and PVC end caps, and stored in pre-chilled insulated containers (approximately 4 degrees centigrade) to be delivered to a state-certified laboratory for analysis. Sample containers are labeled with self-adhesive, pre-printed tags.
Labels contain the following information in waterproof ink:

- Project number (or name)
- Sample number (or name)
- Sample location (well number, soil boring number, etc.)
- Date and time samples are collected
- Treatment (preservative added, filtration method, etc.)
- Name of sample collector

Soils Classification

Soil recovered in the clear acetate liners is examined by a geologist for obvious signs of contamination and classified according to the Unified Soil Classification System. These observations are recorded in the boring logs.

Selection of samples for laboratory analysis are based primarily on headspace readings using a photoionization detector (PID) and position within the soil boring. In general, samples with headspace readings over 50 ppm or that have visual or olfactory indications of contamination are submitted for analysis. Headspace readings are obtained by removing approximately four inches of soil from a 1-inch-diameter liner or one inch of soil from a 2-inch-diameter liner and immediately placing the soil in a resealable plastic bag. The soil in the sealed plastic bag is homogenized, allowed to sit for one minute, the sensor probe of the PID is inserted into the sealed bag, and the maximum PID reading is recorded. When contamination is encountered, one sample is selected from one or two sampling intervals below the apparent lower limit of soil impact to obtain a "zero line" value. During investigation of impact associated with underground storage tanks, the sample closest to the depth of the storage tank invert is submitted for analysis. If the water table is above the tank invert, the sample closest to the water table is selected.

GRAB GROUNDWATER SAMPLING IN BOREHOLES

Sample Collection

Borings are sampled using new, clean, disposable Teflon® bailers attached to new, clean rope or nylon string. Sample vials and bottles are filled to overflowing and sealed so that no air is trapped in the vial or bottle. Once filled, samples are inverted and tapped to test for air bubbles. Samples are contained in vials and bottles approved by the US EPA and the Regional Water Quality Control Board. Some analyses may require separate sample containers in accordance with EPA methods described in 40 CFR Part 136 and SW-846.

Water samples intended for volatile hydrocarbon analysis (EPA Methods 8010, 8020, or 8260) are contained in 40 milliliter (mL) volatile organic analysis (VOA) vials which contain a small amount of hydrochloric acid preservative (HCl) in the vial. Samples intended for analysis by EPA Methods 3500 or 3510/8015M procedures may not be preserved. Water samples intended for low-level diesel analysis are stored in amber glass 1-liter bottles to reduce degradation by sunlight. HCl preservative may be added to the sample if a holding time longer than seven days is expected prior to analysis.

All samples are stored in pre-chilled insulated containers (approximately 4 degrees centigrade) to be delivered to a state-certified laboratory for analysis.

Documentation

Sampling information is recorded in ink on the field boring logs or in a bound notebook with consecutively numbered pages. Pages are not to be removed for any reason. Alternatively, specially formatted field data sheets may be used to record the information collected during monitoring well water quality sampling. Errata may be marked out with a single line and initialed by the person making the change. The log book and data sheets will be placed in the project file when sampling is completed.

Field Equipment Decontamination Procedures

Bailers and string are properly decontaminated and disposed of offsite. All other sampling equipment, such as buckets and stands, are decontaminated after each use by washing in an Alconox solution, followed by tap water and deionized water rinses. Equipment will be sealed in plastic bags or sealed containers to prevent contact with potential contaminants prior to use.

All rinsate used in the decontamination process is stored onsite in steel DOT-approved drums or may be used to mix grout cement. Drums are labeled as to contents, suspected contaminants, date the container is filled, expected removal date, company name, contact and phone number. These drums are sealed and left onsite for subsequent disposal pending receipt of analytical results. Rinsate is disposed of at an accepting facility.

Sample Labeling and Chain of Custody

Sample containers will be labeled with self-adhesive, pre-printed tags. Labels will contain the following information in waterproof ink:

- Project number (or name)
- Sample number (or name)
- Sample location (well number, etc.)
- Date and time samples were collected
- Treatment (preservative added, filtered, etc.)
- Name of sample collector

The same information will be recorded on the chain of custody.