



ENGINEERING INC.

ALCO
HAZMAT
RCE #27011 LIC. #537901

SEP 10 PM 1:56

**UNDERGROUND TANK REMOVAL
WORKPLAN
OAKLAND MAINTENANCE STATION
AUGUST, 1994**

Prepared by:

GHH Engineering, Inc.
8084 Old Auburn Road, Suite E
Citrus Heights, California 95610

Prepared For:

Department of Transportation
District 4
P.O. Box 23660
Oakland, California 94623-0660

TABLE OF CONTENTS

DESCRIPTION OF WORK	1
CONSTRUCTION DETAILS	1
Underground Tank Removal	2
PREPARATION OF WORKPLAN	4
FIGURES	
Figure 1	Vicinity Map
Figure 2	Site Plan
ATTACHMENTS	
Attachment A	Tank Removal and Sampling Protocol
Attachment B	Site Health and Safety Plan
Attachment C	Groundwater Sampling Protocol

August 19, 1994

Mr. Barney Chan
Alameda County Environmental Health
1131 Harbor Park Way, Room #250
Alameda, California 94502

**SUBJECT: UNDERGROUND STORAGE TANK REMOVAL WORKPLAN
HEGENBERGER ROAD
OAKLAND, CALIFORNIA**

Dear Mr. Chan:

GHH Engineering, Inc. (GHH) has been retained by the California Department of Transportation, District 4 (Caltrans) to remove two (2) 6,500-gallon gasoline underground fuel storage (USTs) and two (2) 2,000-gallon diesel USTs, in accordance with Caltrans Contract No. 56S067 and Work Order No. 04-56S067-14. The site is located at 555 Hegenberger Road, California, as shown on Figure 1. The site is non-active and is a Caltrans right-of-way property.

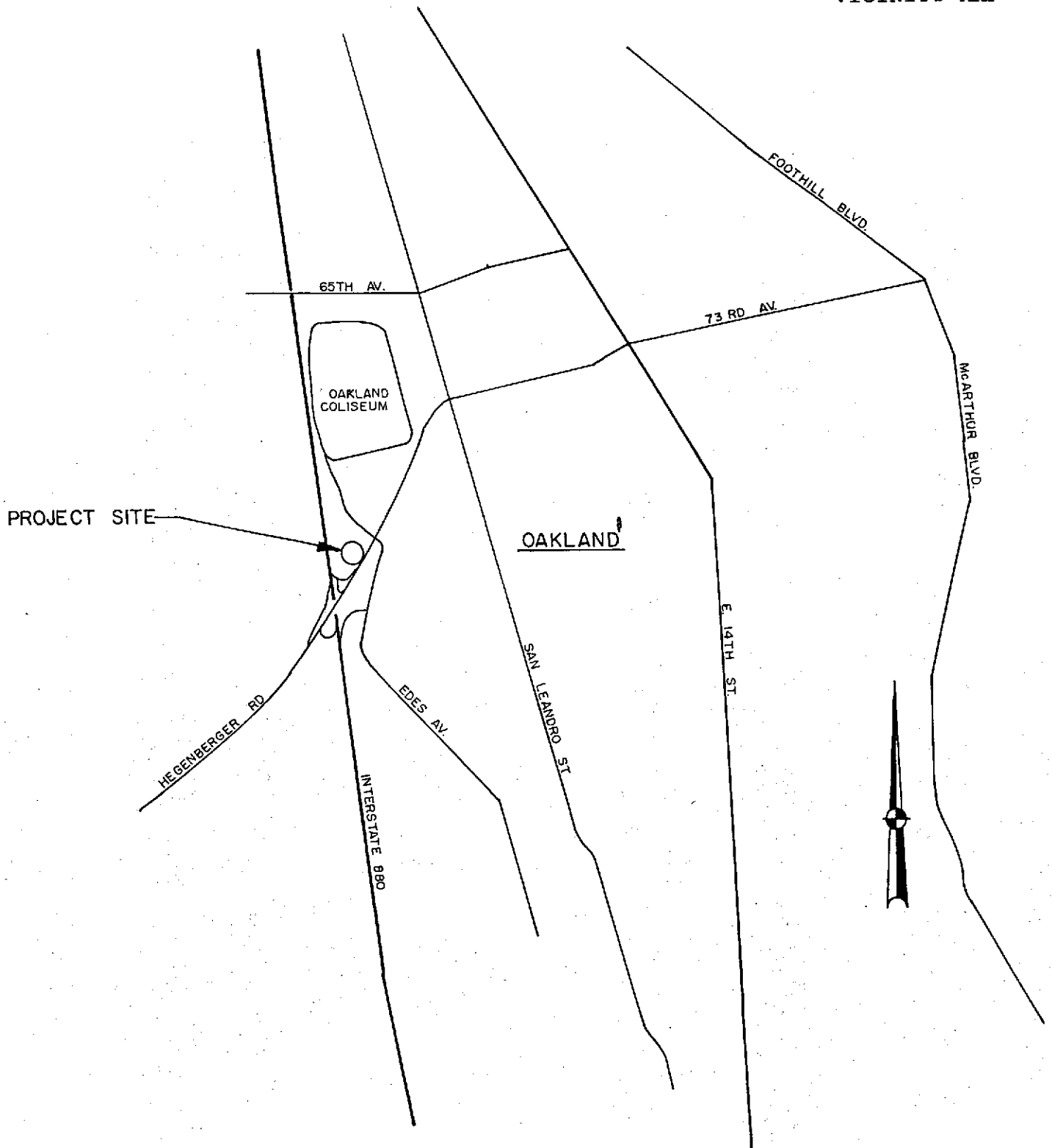
DESCRIPTION OF WORK

The tank removal will consist of the excavation, removal, and disposal of the four (4) USTs, product piping, vent lines, pump island, and fuel dispensers. The UST removal will also include residual product and rinseate disposal, concrete disposal and asphalt debris disposal. The location of the USTs are shown on Figure 2. The work has been scheduled for the week of September 19, 1994.

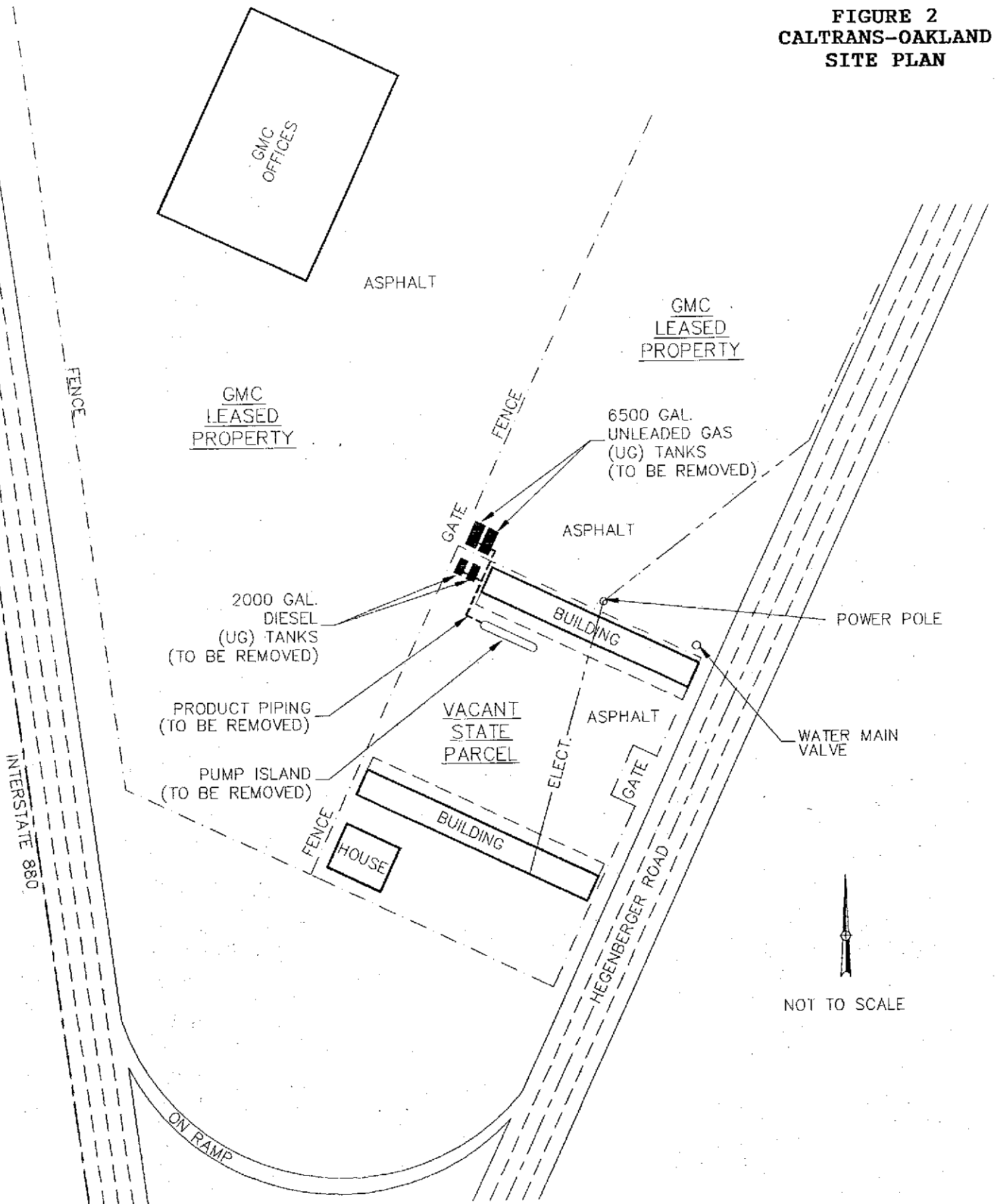
CONSTRUCTION DETAILS

GHH will complete all work in accordance with all local, federal, and state codes and regulations and acceptable practices of the trade.

FIGURE 1
CALTRANS-OAKLAND
VICINITY MAP



**FIGURE 2
CALTRANS-OAKLAND
SITE PLAN**



TANK REMOVAL WORKPLAN - OAKLAND AUGUST, 1994

Underground Tank Removal

The tanks will be removed in accordance with the tank removal and sampling protocol included in Attachment A and as described below:

- o GHH will obtain the necessary permits from Alameda County Environmental Health Department (Alameda County) and the City of Oakland Fire Prevention District. A Site Health and Safety Plan, included in Attachment B, will be maintained on site.
- o Caltrans will obtain a Right of Trespass Agreement for GHH to remove the two USTs from the leased property north of the site.
- o Temporary fencing will be installed around the northern end of the excavation during the tank removal work.
- o The existing fence separating the tanks will be removed prior to excavating and will be replaced prior to resurfacing.
- o Prior to excavation of the tank area, the tanks will be pumped of residual product. All residual product will be transported to an appropriate disposal facility under a hazardous waste manifest.
- o The top and sides of the tanks and all piping will be exposed. The product piping and dispenser island will then be removed.
- o Approximately 15-pounds of dry ice per 1,000-gallon capacity will be placed into each tank two-hours prior to the removal of the tank from the excavation. All regular openings in each tank will be sealed with plugs or caps. One plug will have a 1/8-inch vent hole for purging of the tank. During this time the tanks will be monitored with a percent lower explosion limit (LEL) meter and an oxygen meter. Once the percent LEL is below 20 percent and the oxygen level is below 10 percent the tanks will be removed from the excavation with approval from Alameda County. The exterior of each tank will be cleaned for inspection.
- o Once inspection is completed the tanks will be placed on a truck under a hazardous waste manifest and transported to Erickson, Inc. for recycling. A certificate of destruction will be obtained and included in the tank removal report.

**TANK REMOVAL WORKPLAN - OAKLAND
AUGUST, 1994**

- o Upon completion of the tank removal and under direction of Alameda County two (2) soil samples will be collected from approximately two-feet below the bottom of each end of the former tank location; one (1) soil sample will be collected for every 20 linear feet of product piping, and one (1) soil sample will also be collected from under each fuel dispenser. The soil samples will be analyzed by a state certified laboratory total petroleum hydrocarbons in the gasoline and diesel range (TPH G and D; EPA 8015 Modified/5030), benzene, toluene, ethylbenzene, and xylenes (BTEX; EPA 8020).

The soil samples will be collected in accordance with the soil sampling protocol contained in Attachment A. If groundwater is encountered in the excavation samples will be analyzed as outlined above and collected in accordance with the groundwater sampling protocol also contained in Attachment C.

- o A flagperson will be used to temporarily direct traffic while trucks back into the site to off load fill material for the southern end of the excavation.
- o Material trucks will utilize the GMC Truck entrance on Edes Avenue to off load fill material for the north end of the excavation.
- o After completion of sample collection, the excavation will be backfilled and compacted with imported fill material or native material with the approval of Alameda County. Once the backfilling is completed, the area of the excavation will be resurfaced.
- o If impacted soil is encountered within the tank and piping excavations the impacted soil will be contained on site and encapsulated with plastic. Additional soil characterization samples will be collected from the impacted spoils pile prior to disposal.
- o Concrete hold down pads for each tank will be left in place unless contamination is present, if necessary, they will be removed to access any impacted material. Removal of tank pads will require authorization from Caltrans.
- o If impacted soil is encountered, the excavation will be lined with plastic and backfilled with imported material. Additional excavation of impacted soil will require authorization from Caltrans.

**TANK REMOVAL WORKPLAN - OAKLAND
AUGUST, 1994**

PREPARATION OF WORKPLAN

Firm Preparing Workplan

GHH Engineering, Inc.
8084 Old Auburn Road, Suite E
Citrus Heights, California 95610



Workplan Prepared by:

This workplan was prepared by GHH Engineering, Inc. Mr. Gary H. Hall, RCE #27011, Principal Engineer, is the qualified person responsible for overseeing this project. This workplan was written by Mr. Calvin D. Pratt, Soil Scientist, for GHH.

The analyses and recommendations submitted in this workplan are based upon the best available information obtained from the field investigation, persons knowledgeable about the site, and local government agencies. All evidence presented is believed to be factual unless proven otherwise. This workplan was prepared to assist the property owner in the evaluation of the site.

Any conclusions and recommendations are based on our expertise and experience with the site. However, they may be rejected or revised by the regulatory agencies after they have reviewed and evaluated the data.

This workplan has been reviewed by Caltrans and they concur with the information contained herein. If you have any questions or need additional information please call me at (800) 877-1739.

Thank You,

Gary H. Hall
Gary H. Hall, P.E.
President

Calvin D. Pratt
Calvin D. Pratt
Soil Scientist

Tim Mehta 9/2/94
Date
Tim Mehta
Caltrans, District 4

F:\4231\CP\naj\Oakland.wkp

cc: Ms. Margaret Gabil, Caltrans, District 4

ATTACHMENT A

TANK REMOVAL PROCEDURES

TANK REMOVAL PROTOCOL

1.0 Tank Removal and Disposal

Upon determination to remove a particular underground tank, the necessary permits for such removal will be obtained. The tank will then be scheduled for removal and disposal in accordance with the local regulatory requirements.

1.1 Utilities Clearance

An environmental specialist reviews all available tank data including tank material, age of installation, cover (asphalt, concrete, earth), piping, depth of tank, direction of tank, and any as-built drawings. Any underground piping/conduit will be located with the use of an underground pipe locator, and marked on the ground surface. Underground Service Alert will be requested to assist in determining location of underground utilities and provide clearance information. Fire extinguishers, no smoking signs, and barricades are situated on the site. All sources of possible ignition at the tank site are eliminated. The tank is rendered inert by inserting 15-pounds of solid carbon dioxide for each 1,000-gallons of tank volume and allowing a minimum of one hour for oxygen displacement which is checked using a lower explosive limit (LEL) meter and oxygen meter. All appropriate regulatory agencies are notified 48-hours in advance of the actual tank removal.

1.2 Excavation

Asphalt or concrete pavement coverings are removed with the most cost effective method available, using either a concrete cutter or jackhammer/air compressor. The backhoe initially removes broken paving to an isolated area for later removal. The soil above the tanks will be stored separately for reuse with approval of the County.

Of primary concern to the excavation team (backhoe with operator and laborer) is not disturbing the existing tank/piping installation with the backhoe. The laborer will probe and hand-excavate near and around all external product piping and vent lines. Soil is removed along one side of the tank and two ends of the tank, to a depth of the tank bottom and a width of 24". Periodic examination continues through the excavation process for any possibility of contaminated soil. In the event of encountering soil contamination, the soil is isolated on a sheet of 10 mil visquene. A determination for disposal of contaminated soil will be negotiated with the appropriate regulators.

The tank excavation will be closed immediately and secured if not closed by fencing.

1.3 Tank Removal

The tank is disconnected at appropriate fittings, with existing lines capped and tank plugged. One plug is vented, to allow for vapor dispersal. Installation lift lugs are located, and chains are secured to lugs (nylon rope for a fiberglass tank) and to lifting equipment.

The lifting equipment is checked for proper capacity before moving the tank. Prior to lifting the tank from the excavation, the oxygen content shall be less than 10% and lower explosive limit less than 20%.

10

1.4 Tank Soil Investigation

Upon arrival of the regulatory representatives, the tank is lifted from the excavation, set on smooth ground, free of rocks and foreign objects and chocked. The tank and surrounding backfill is then inspected for leakage. Upon excavation of soil to native soil, a soil sampling is then completed in accordance with the attached soil sampling protocol. Should widespread contamination have been encountered during excavation, a site characterization and remediation plan will be developed under separate contract.

1.5 Tank Transport and Disposal

Once the tanks have been inspected, they will be placed on a truck for transport. The truck will be certified to carry hazardous materials, if needed. The tanks will be transported under an appropriate waste manifest to a State certified disposal facility where the tank will be properly recycled.

1.6 Backfill

The excavation will be lined with plastic, backfilled with clean fill, compacted and resurfaced per the specifications or direction of the engineer, as so not to come in contact with clean soil.

1.7 Plan

If during the tank removal it is determined that extensive impacted soil remains beyond the limits of the excavation(s), verification soil samples will be collected from the impacted soil and analyzed for TPH and BTEX. The excavation(s) will then be lined with plastic, backfilled, compacted and resurfaced. During excavation, any contaminated material will be protected by placing it on and covering with an impermeable material. A site investigation/remediation program will then be developed in accordance with the site assessment guidelines developed by the Central Valley Regional Water Quality Control Board (CVRWQCB) Tri-Regional Guidelines dated August 31, 1991, but is not included in Caltrans' scope of work for the tank removals.

1.8 Water Analysis

Should groundwater be encountered during tank removal, appropriate water samples will be collected as directed by the County.

SOIL SAMPLING PROTOCOL

- A. Notify Environmental Health or Public Health Branch of the County Health Department in advance of all activity.
- B. Collect soil samples from the tank and piping excavation in brass tubes using a drive sampler from the backhoe bucket, seal tubes with Teflon tape and Teflon end caps. Immediately label and place samples in ice chest for storage and transport to state certified laboratory under chain-of custody.
- C. Test the submitted soil samples, at a State certified laboratory as outlined in the text of the tank removal workplan.
- D. Clean sample equipment to prevent cross contamination. Use detergent TSP and water, and/or steam cleaner. Use disposable gloves during sampling and discard after each sample is collected. Dry equipment with clean disposable paper towels and stored in a clean, dry environment.

ATTACHMENT B

SITE SAFETY PLAN

**SITE SPECIFIC HEALTH & SAFETY PLAN
SITE INVESTIGATION
CALTRANS MAINTENANCE FACILITY - OAKLAND**

This Site Safety Plan (Plan) describes basic safety requirements for the site investigation at the subject site. This plan addresses the expected potential hazards that may be encountered on the worksite for this project. The provisions set forth in this Plan apply to GHH Engineering, Inc. (GHH) and subcontractors working on this project. GHH may elect to modify these provisions, but only to upgrade or increase the safety requirements, and only with the concurrence of Caltrans.

Authority for Site Safety

GHH personnel responsible for project safety are the Project Manager or a designated staff Geologist, Soil Scientist or Engineer. The Project Manager is responsible for implementing the provisions of this plan, and for providing a copy of this plan to the designated representative and for advising the designated representative on health and safety matters.

The designated representative is responsible for communicating the information contained in this plan to the field personnel assigned to the project and to the responsible representative of the subcontractors on this project.

Mr. Dennis Steed will act as the Site Safety Officer (SSO) for GHH. Mr. Steed is responsible for the following items:

- o Implementing the Site Safety Plan;
- o Requiring and maintaining adequate safety supplies and equipment inventory onsite;
- o Conducting daily safety meetings and advising workers regarding hazards;
- o Site control, decontamination, contamination reduction procedures; and
- o Reporting accidents or incidents.

Safety and Orientation Meeting

Field personnel from GHH and subcontractors will attend a project specific health and safety meeting and review the project tasks at the site prior to commencement of any work. The SSO for GHH will conduct the safety meeting and will check for subsequent compliance with this plan by personnel and all subcontractors. Subsequent site health and safety meetings may be held by the SSO at his or her discretion.

Site Personnel

Project Manager: Calvin D. Pratt, Soil Scientist
Project Engineer: Gary H. Hall, P.E.
Site Foreman: Dennis Steed, Equipment Operator

Subcontractor Representatives: Various - Will be logged at daily tail gate meetings.

Possible Chemical Contaminant

<u>Contaminant</u>	<u>Medium</u>	<u>Anticipated Concentrations</u>
Gasoline	Soil	Unknown
Benzene	Soil	Unknown
Toluene	Soil	Unknown
Ethylbenzene	Soil	Unknown
Xylenes	Soil	Unknown
Metals	Soil	Unknown

Physical Hazards

<u>Hazard</u>	<u>Procedures to Reduce Hazard</u>
Heavy Equipment	Be alert and aware of what is going on at all times. Wear proper safety equipment (hard hat, steel toe boots).
Material Handling	Use proper lifting procedures. Know what type of material is being handled.
Noise	Use adequate ear plugs.

Required Health and Safety Equipment

- o hard hat
- o steel toe boots
- o respirator that fits (with organic vapor cartridge)
- o gloves
- o protective eyewear
- o protective clothing
- o ear plugs
- o PID or TLV meter
- o First aid kit

Safety Procedures

Site Entry/Access - Prior to entering areas where drilling or excavation operations are taking place, personnel should be aware of the status of the operation and the possible levels of contamination. If there is a question, information will be available from the SSO.

Excavation/Trenching - No persons may enter a trench or excavation deeper than 5 feet without proper shoring in place or the proper sloping of the walls of the trench or excavation. Excavating/trench procedures will comply with CAL-OSHA Competent Persons Act and 8 CCR 1504 and 1540-47.

Fencing - Excavation/trenches will be properly fenced or taped and barricaded if they are to be left open pending laboratory analyses.

Monitoring - Monitoring will be done primarily using visual and olfactory methods. However, field screening will be accomplished with a PID or TLV meter and Draeger tubes to check for airborne constituents such as benzene, toluene, ethylbenzene and xylenes. The PID or TLV meter shall be calibrated for 1 ppm benzene.

Egress - If airborne levels are determined to exceed the action limits (see next section) all personnel shall evacuate to a predetermined isolation zone. The SSO shall notify all personnel onsite that levels have been exceeded and of proper evacuation procedures. A predetermined warning method shall also be established such as three short blasts of a car horn.

Action Levels

Action Level A:

Action Level A is applicable for airborne benzene, toluene, ethylbenzene and xylene levels less than the time weighted average (TWA) exposure limits. The TWA exposure limits are: benzene 1 ppm, toluene 0.1 ppm, ethylbenzene 100 ppm, and xylene 100 ppm. Personal protective equipment for these areas should be level D (see Levels of Protection).

Action Level B:

Action Level B is for airborne contaminants exceeding the TWA exposure limits. If Action Level B is reached, respirators should be donned and personnel should retreat to the isolation zone, until further direction is given. A signal designated at the pre-work "tailgate meeting" will be used to warn personnel of the need to retreat as previously described.

Levels of Protection

Level C

Level C protection should be used when the types and concentrations of respirable material have been assessed, the types of hazards are known, and employee protection will be assured.

1. Equipment

- o Full face, air-purifying respirator
- o Tyvek suit
- o Inner gloves
- o Outer gloves
- o Chemical resistant boots with steel toe
- o Disposable booties (optional)
- o Cloth coveralls, (inside suit, optional)
- o Hard hat
- o Two-way radio

2. Criteria

- o Atmosphere greater than the TLV/PEL, but not exceeding cartridge capacity;
- o Air sample readings from background to 5 ppm above background; and
- o When the possibility of incidental respiratory or skin exposure exists.

Level D

Level D is the basic work uniform and should be worn only when operations are identified as presenting no chemical hazards to personnel.

1. Equipment

- o Coveralls
- o Chemical resistant boots with steel toe
- o Safety glasses
- o Chemical resistant gloves

2. Criteria

- o General work activities where incidental, low hazard situations exist.

Emergency Contacts

Police:	911
Fire:	911
Ambulance:	911
Hospital:	Humana Hospital 13855 East 14th Street San Leandro, California (510) 357-6500
State Agency:	Cal EPA
Federal Agency:	Federal EPA
Local Agency:	Alameda County Environmental Health Department

Emergency contacts shall also be listed on a Field Site Safety Plan and will include additional numbers for personnel on site.

ATTACHMENT C

GROUNDWATER SAMPLING PROTOCOL

GROUNDWATER SAMPLING PROTOCOL

- A. Upon arriving at the sample site, all sampling equipment will be washed in a solution of trisodium phosphate (TSP), dishwashing soap and water, and rinsed twice with tap water. The sampling equipment washing procedure will be carried out on site before sampling other monitoring wells in cases when more than one monitoring well is to be sampled.
- B. Immediately prior to purging, the static water level (SWL) in the excavation will be recorded. The thickness of product, if present, on top of the groundwater will be measured using both a product probe and a disposable bailer.
- C. The groundwater sample is collected by inserting a disposal bailer into the water column. Immediately after the bailer is removed from the excavation, a disposal sample port is affixed to the bottom of the bailer. The sample container is filled so that no headspace remains in the container.
- D. The following containers are used for groundwater sample collection:
- | | | |
|--------------|-----|--|
| TPH (GC-FID) | (2) | 1 quart amber glass bottle with Teflon lined cap |
| BTEX (602) | (2) | 40 ml VOA vials with Teflon lined caps |
- E. Immediately after sample collection, samples are stored in an ice chest for transportation under chain-of-custody to a state certified laboratory.