COPY

WORK PLAN

MAY 1994

ADDITIONAL ENVIRONMENTAL INVESTIGATION AND REMEDIAL ACTIVITIES
2662 Fruitvale Avenue
Oakland, California

For:

City of Oakland
Oakland, California

94204-D0

BASELINE

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (510) 420-8686

BASELINE

ENVIRONMENTAL CONSULTING

TRANSMITTAL

TO: Mr. Barney Chan
Alameda County Health Agency, Hazardous Materials Div.
80 Swan Way, Room 200
Oakland, CA 94621

Date: May 10, 1994

Project No: 92404-D0

SUBJECT: Work Plan for Additional Environmental Investigation and Remedial Activities, 2662 Fruitvale Ave., Oakland, CA.

ENCLOSED:

No. of copies	Description:
1	Work Plan

#4457

COMMENTS:

Disposition:

- [X] As requested
- [ ] For signature
- [ ] For review and comment
- [ ] Returned after loan to us

Via:

- [ ] Mail
- [X] Overnight
- [ ] UPS ground
- [ ] Courier

ALCO HAZMAT
94 MAY 11 AM 9:16

TRANSMITTED BY:

Yane Nordhav, Principal

5900 Hollis Street, Suite D • Emeryville, CA 94608 • (510) 420-8686 • FAX (510) 420-1707
Emeryville *Petaluma*

Comments to WP 5/12 Kevin O'Dea + Andrew C. Clark

(1) ✓ 1 soil boring beneath dump is sufficient if all constituents are low to N.D.

(2) PLs contact me prior to any field sampling.

(3) ✓ PLs designate on a map the locations of the new MW.

(4) ✓ Any gtlds reports (wells installed in 8/93), if not must eliminate QM. — possibly one sampling prior to actuals

(5) Since a RRA is being considered, what clean up levels are going to be used during excavation? Based on what guidelines. 1000? TPHg.

(6) Appears that GW extraction will be necessary if Chevron's well is representative of City of Oakland's problem.

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10 May 1994
92404-D0

Mr. Andrew Clark-Clough
Office of Public Works
Environmental Affairs Division
City of Oakland
1333 Broadway, Suite 330
Oakland, CA 94612

Subject: WORK PLAN for Additional Environmental Investigation and Remedial Activities, 2662 Fruitvale Avenue, Oakland, California

Dear Mr. Andrew:

Enclosed please find one copy of the Work Plan for additional soil investigation in the vicinity of the former sump location, excavation of soils containing elevated levels of petroleum hydrocarbons, and installation and sampling of one groundwater monitoring well at 2662 Fruitvale Avenue in Oakland. Should you have any questions regarding this work plan, or need further information, please do not hesitate to contact us at your convenience.

Sincerely,

Yane Nordhav
Principal
R.G. No. 4009

Kevin O'Dea
Senior Geologist

YN:KOD:cr
Enclosure

92404wp.413-5/10/94

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WORK PLAN FOR
ADDITIONAL ENVIRONMENTAL INVESTIGATION
AND REMEDIAL ACTIVITIES
2662 Fruitvale Avenue
Oakland, California

INTRODUCTION

BASELINE Environmental Consulting as been retained to conduct additional environmental activities at 2662 Fruitvale Avenue in Oakland (Figure 1). The proposed activities include 1) soil sampling in the vicinity of the former sump location, 2) excavation of soils that contain elevated concentrations of petroleum hydrocarbons, 3) repair or replacement of one groundwater monitoring well, and 4) installation and sampling of an off-site, downgradient groundwater monitoring well. The purpose of the proposed work is to 1) identify if any releases from the sump, formerly located on the site, impacted soil quality, and 2) to remove soil containing petroleum hydrocarbons and reduce the potential for soil at the site to act as a source of contaminants to the groundwater, and 3) further investigate groundwater quality downgradient of the site.

BACKGROUND

A Phase I site assessment conducted at the site indicated that a service station, which included an auto repair facility, was present on the site from the 1940s to the 1980s. In 1983, the City of Oakland purchased the site from Texaco. The site was subsequently rented for use as a produce stand and Christmas tree sales lot.

In January and August 1993, BASELINE performed soil and groundwater investigations at the site. The results of these investigations identified the presence of petroleum hydrocarbons at varying concentrations in the soil throughout the site. The groundwater investigation indicated that groundwater quality beneath the site was not significantly impacted.

Following the completion of these investigations, the City of Oakland demolished the structures on-site. Since the oil sump was part of the concrete floor of the station building, the sump was removed with it. The contents of the sump had been previously removed, and the sump had undergone multiple cleanings in August 1993. However, no soil samples were collected at the time of removal to assess whether any releases from the sump had occurred. During demolition activities, the top of monitoring well MW-F3 was also damaged and buried.

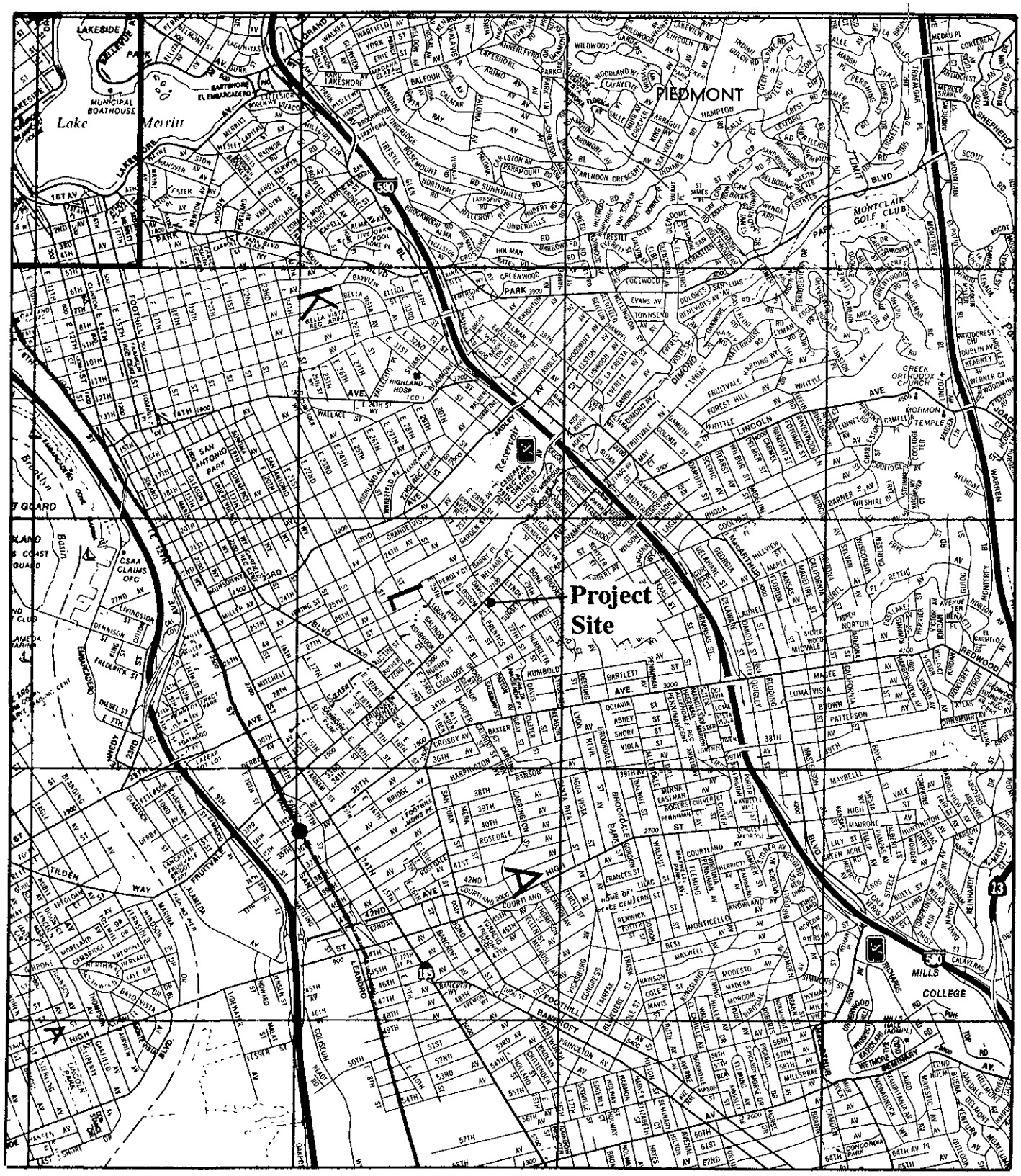
PROPOSED WORK

Soil Investigation

BASELINE proposes to drill up to five soil borings, one on each side and one in the center, of the former sump location (Figure 2). The soil borings would be advanced to the depth of the groundwater table using hollow-stem augers. Soil samples would be collected at depths of approximately 5 feet below ground surface (the assumed base of the sump), and immediately above the water table, approximately 10 feet below ground surface from each boring for lithologic description and chemical analyses. Sampling techniques are described in Appendix A. The soil samples would be submitted to a California-certified analytical laboratory for total petroleum

REGIONAL LOCATION

Figure 1



2662 Fruitvale Avenue
Oakland, California

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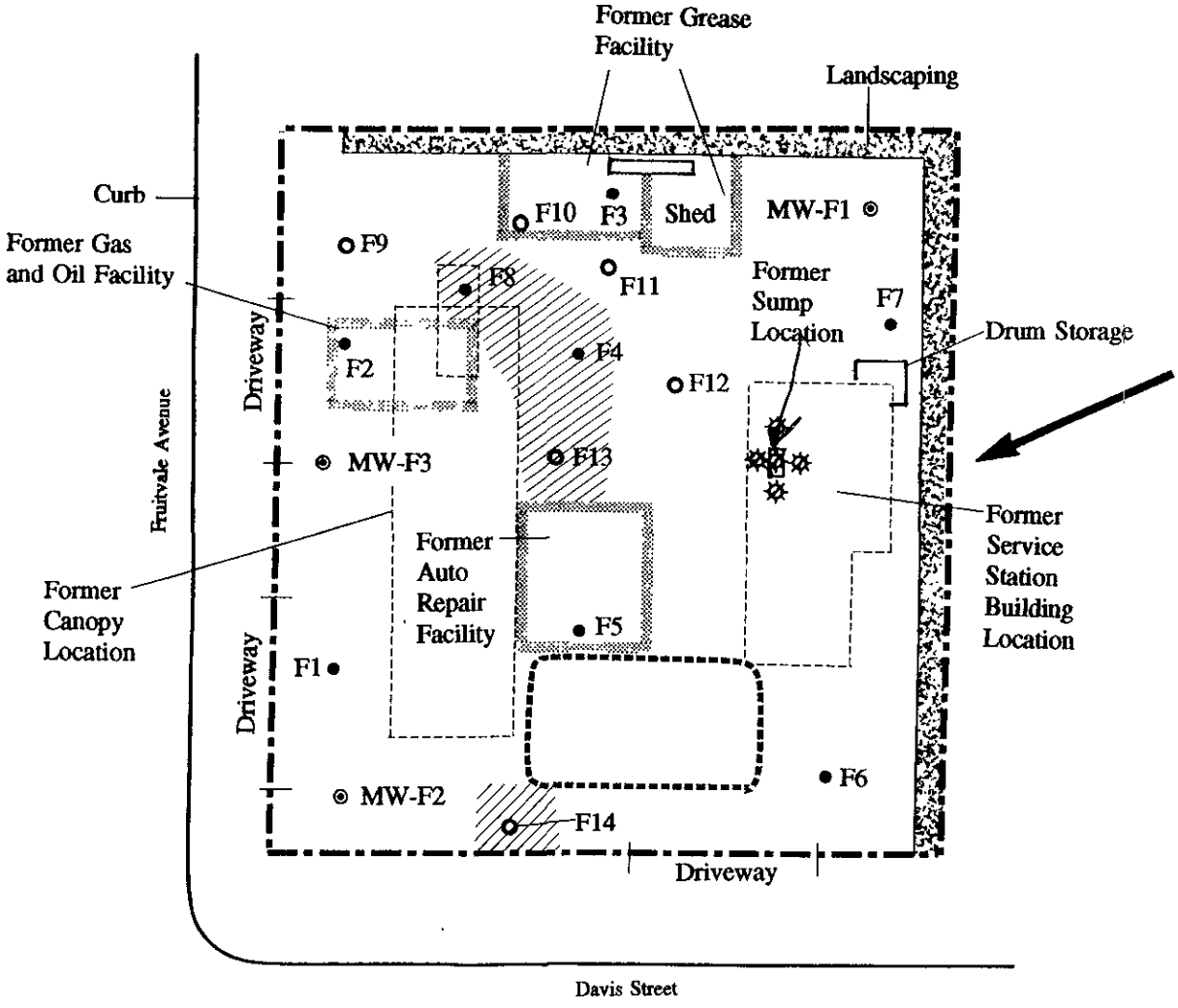
SITE PLAN

Figure 2



Legend

- Outline of Former Service Station Facilities (1946 Sanborn Map)
- Approximate Location of Tanks Removed in 1978 (Trans Pacific, 1986)
- Areas with Elevated TPH Concentrations
- Proposed Soil Boring Locations
- F1-F8 • Soil Boring Location - Phase II
- F9-F14 ○ Soil Boring Location - Phase III
- MW-F2 ◉ Monitoring Well Location
- Approximate Geophysical Anomaly (Possible Underground Tank) (BCA Geophysics, 1993)
- Groundwater Flow Direction
- Project Site Boundary

0 30 Feet

2662 Fruitvale Avenue
Oakland, California

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hydrocarbons (TPH) as gasoline, TPH as motor oil, oil and grease, benzene, toluene, ethylbenzene, and xylenes (BTXE), volatile organics (EPA 8240), and total and soluble lead. The results of the soil sampling activities would be used to assess whether the soil quality in the vicinity of the sump has been affected by potential releases from the sump, and whether remedial actions would be necessary.

Excavation of Soils Affected by Petroleum Hydrocarbons

Soils would be excavated from areas identified during previous investigations as containing elevated concentrations of petroleum hydrocarbons (Figure 2). The excavations would not extend beyond the depth of the water table, approximately 10 feet below ground surface. The soils would be screened in the field using a photo-ionization detector (PID) to assess the relative extent of volatile organic contamination. Soil samples would be collected from the sidewalls of each excavation at a rate of one sample per 20 linear feet, or a minimum of one per sidewall. Sampling methods are described in Appendix A. The soil samples would be analyzed for TPH as gasoline, TPH as kerosene/motor oil, and BTXE.

It is estimated that up to 200 cubic yards of soil containing concentrations of petroleum hydrocarbons of 1,000 mg/kg or greater would be excavated. The excavated soil would temporarily be stored on-site pending the results of laboratory testing. The soil would be placed in stockpiles on and under 10-mil plastic located on a relatively flat area of the interior of the site. Samples of the stockpiled soil would be collected at a frequency of one composite (four sampling locations) per 100 cubic yards or as required by the recycling/treatment or disposal facility. Following characterization, the soil would be transported to a facility permitted to recycle/dispose of soil containing nonhazardous levels of petroleum hydrocarbons.

The excavations would be lined with 10-mil plastic and backfilled with clean fine-grained soil. The soil would be compacted by the excavation contractor to a density equal to or greater than 90 percent of the modified Proctor density for the backfill soil.

Groundwater Monitoring Well Repair and Installation and Sampling

Monitoring well MW-F3 was damaged and buried during demolition activities at the site. BASELINE would locate, uncover, and inspect MW-F3 to determine whether it can be repaired. If the integrity of the well has not been compromised, an extension, if needed, water-tight locking cap, and traffic-rated Christie box would be installed. The well would then be re-developed to remove any sediment that may have entered the well when damaged or during repair activities. If it can not be repaired, the well would be abandoned by overdrilling and grouting with a bentonite-cement mixture, and a new well would be installed as a replacement.

A new off-site well is proposed to be installed downgradient of the site, south-southwest of the former underground storage tank locations. Groundwater monitoring wells installed by other consultants downgradient of the site have been found to contain petroleum hydrocarbons significantly above concentrations detected in the groundwater on-site. The purpose of the new well is to assess the quality of groundwater migrating from the project site.

The well boring would be advanced to the groundwater table with hollow-stem augers. Soil samples would be collected at five foot intervals for lithologic description. Two unsaturated soil samples

would be collected from the well boring and submitted for TPH as gasoline, TPH as motor oil, and BTXE analyses. location? width?

The new monitoring well and replacement well for MW-F3, if needed, would be constructed with 2-inch diameter PVC casing and machine-slotted well screen in a nominal 8-inch diameter boring. A sand filter pack (#2/12) and approximately 2-foot bentonite pellet seal would be tremied through the hollow-stem augers into the annular space between the borehole and the well casing. The remainder of the annular space would be filled with a cement-bentonite grout. A locking well cap and a traffic-rated christie box would complete each well installation. A typical well construction diagram is shown on Figure 3. The location of the well screen interval would depend on field conditions, but would be installed to account for shallow groundwater fluctuations.

All work associated with well installation would be supervised by a California-registered geologist. Copies of the well logs would be submitted to the California Department of Water Resources (DWR) for their files. The laboratory analyses would be performed according to methods specified in the Tri-Regional Guidelines for gasoline tank sites.

Decontamination of the drilling and sampling equipment would occur in a plastic-lined trough assembled at the project site. Sampling equipment would be washed with a trisodium phosphate solution and rinsed with deionized water between each sampling attempt. The augers and other drilling equipment would be steam-cleaned between use at each boring location. All rinseate and sediment generated during decontamination activities would be stored on-site in sealed steel drums.

Well Development and Sampling. The wells would be developed at least 24 hours after well installation by surging and pumping with a double diaphragm pump and disposable PVC hose until the wells were relatively clear of fine sediment. After 24 hours, the new well(s) and existing wells on-site would be sampled according to procedures outlined in Appendix A. The groundwater samples and one quality control sample would be submitted to an analytical laboratory for TPH as gasoline and BTXE analyses.

Survey. The horizontal location and the elevation (with an accuracy of 0.01 foot with respect to mean sea level) of the new monitoring wells would be surveyed by a licensed surveyor.

Health Risk Assessment

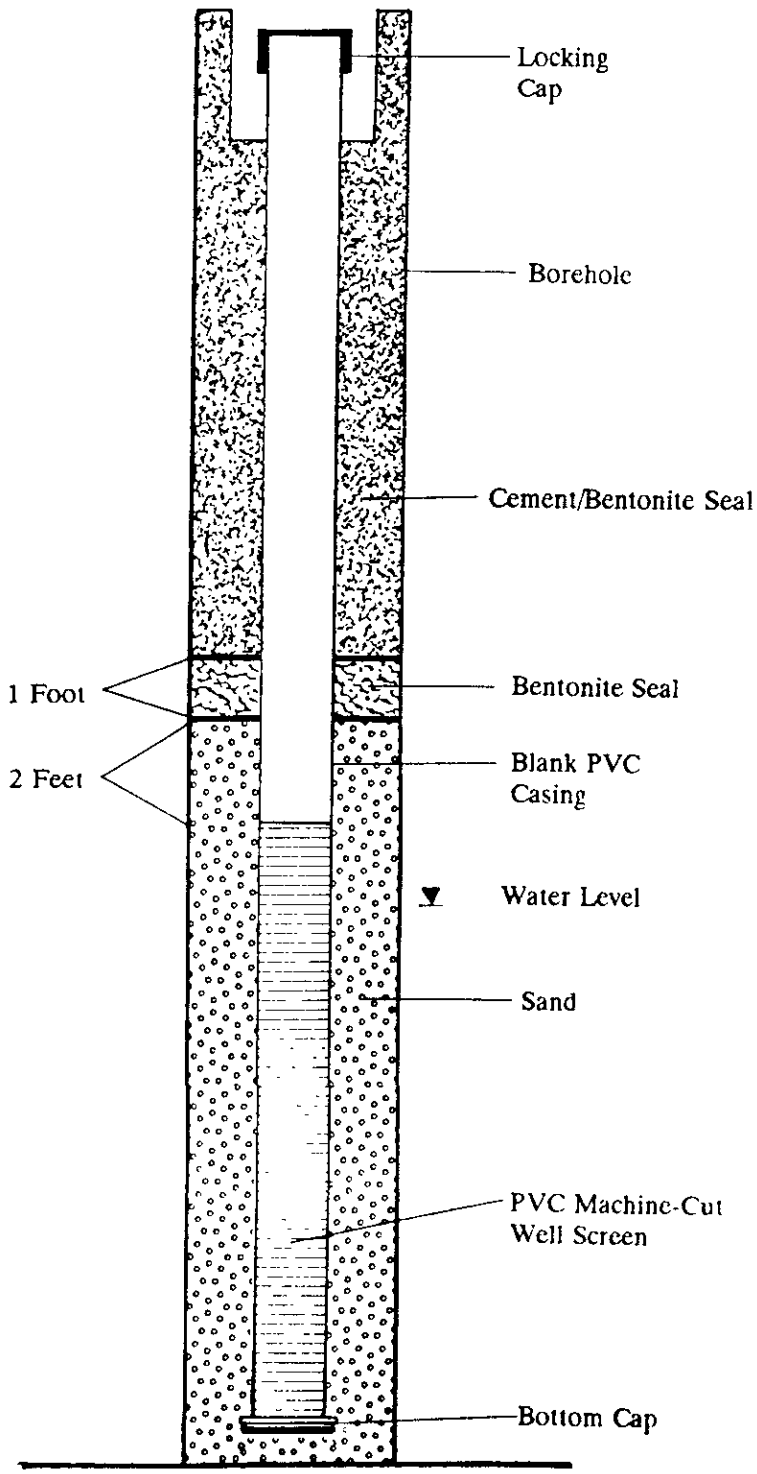
Following the completion of the proposed work and receipt of analytical results, a Health Risk Assessment (HRA) would be prepared to assess residual human and environmental health risks that remain at the site. The HRA would be prepared in accordance with US EPA and California EPA guidance and the methodologies presented in the Alameda County Department of Environmental Health memorandum (29 January 1993) on "Risk Based Management of Contaminated Sites."

SUMMARY REPORT

Upon completion of the tasks outline above, a summary report would be prepared that documented field activities, presented results, and provided conclusions and recommendations for submittal to Alameda County Health Agency and San Francisco Regional Water Quality Control Board.

MONITORING WELL CONSTRUCTION DETAILS
Underground Tank Investigations

Figure 3



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APPENDIX A

SAMPLING METHODS

SAMPLING PROCEDURES

SOILS

1. In-place soil samples are collected with a stainless steel corer, fitted with a six-inch brass liner. The corer is driven into the ground by a slide hammer. The brass liner is removed from the steel corer, capped with teflon film and a plastic cap, sealed with a silicone band, placed in a zip-lock bag, and iced prior to being brought to the laboratory for analysis. Proper chain-of-custody and sample labeling procedures are followed.

   All sampling equipment is decontaminated with tri-sodium phosphate (TSP) and deionized water prior to collection of each sample.

2. In-place soil samples may also be collected during drilling activities. The samples are collected with a California Modified sampler (2-inch diameter) fitted with six-inch brass sleeves. The sampler is driven into the ground by a 140-lb. hammer falling 30 inches. The samples are handled similarly to the procedures described above and the equipment is decontaminated in the same fashion.

3. During tank removal activities, soil samples may be collected from a backhoe bucket having extracted material from a specific depth. The soil brought to the surface in a bucket is sampled after about six inches of the surface is discarded. The sample is collected with a stainless steel corer fitted with a brass tube. The sample is handled in the same manner as described above, and decontamination procedures are similar.

GROUNDWATER

The well is checked for floating product with a dual interface probe. A water level measurement is made simultaneously with the probe, calibrated to the nearest 1/100th of a foot.

The well is then evacuated of five well volumes of water prior to sampling. The evacuation is performed with either a PVC 1.7-inch hand pump or a power pump with disposable tubing, the sample is collected with a disposable, bottom-valve, plastic bailer. The sample is transferred directly into glass vials, iced, and brought to the laboratory. Proper chain-of-custody and sample labeling procedures are followed.

All sampling equipment is decontaminated with TSP and deionized water prior to collection of each sample.

(In the case of sampling from dewatering, wells, manholes, or in tank excavations, no evacuation occurs, but the sample is collected immediately after a check has been made for floating product. The sample is immediately transferred from the plastic bailer to the sample vials, iced, and brought to the laboratory for analysis).