ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction 2641 Crow Canyon Rd., Ste. 5 • San Ramon, CA 94583 • (510) 820-3224

ALCO HAZMAT
93 NOV 22 PM 2:20

263

November 18, 1993

Alameda County Health Services Department
Attn: Jennifer Eberle
80 Swan Way, Room 350
Oakland, Ca 94621

RE: **245 8th Street in Oakland**

Dear Ms. Eberle:

Please find enclosed a copy of the Groundwater Monitoring Well Installation Workplan for the property located at 245 8th Street in Oakland, California.

If you have any questions, please contact me at (510) 820-3224.

Sincerely,
ALL ENVIRONMENTAL, INC.

Craig Hertz

Craig Hertz
Vice President

FAX: (510) 838-2687

ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction 2641 Crow Canyon Rd., Ste. 5 • San Ramon, CA 94583 • (510) 820-3224

October 8, 1993

SOIL BORING

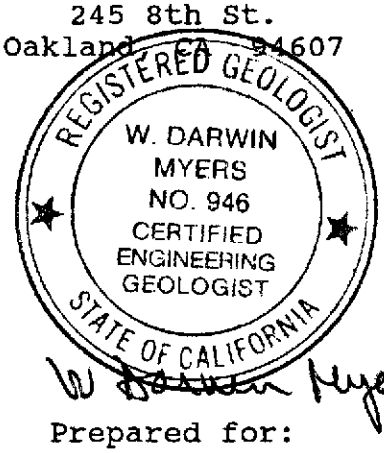
AND

GROUNDWATER MONITORING WELL INSTALLATION

WORKPLAN

FOR JOBSITE AT:

245 8th St.
Oakland, CA 94607



Prepared for:

Mr. Victor Lum
245 8th St.
Oakland, CA 94607

Prepared by:

ALL ENVIRONMENTAL, INC.
2641 Crow Canyon Road, Suite 5
San Ramon, CA 94583

FAX: (510) 838-2687

TABLE OF CONTENTS

1.0	INTRODUCTION	Page 1
2.0	SITE DESCRIPTION	Page 1
3.0	SITE BACKGROUND	Page 1
4.0	SOIL BORING INVESTIGATION	Page 2
5.0	GROUNDWATER INVESTIGATION	Page 4
6.0	SITE SAFETY	Page 4
7.0	ESTIMATED SCHEDULE	Page 5
8.0	FINAL REPORT	Page 5

LIST OF FIGURES

SITE LOCATION MAP	Figure 1
SITE PLAN	Figure 2
TYPICAL WELL CONSTRUCTION DIAGRAM	Figure 3

LIST OF APPENDICES

REPORT OF PREVIOUS INVESTIGATIVE WORK	Appendix A
HEALTH AND SAFETY PLAN	Appendix B
SAMPLING QA/QC PROCEDURE	Appendix C

1.0 INTRODUCTION

All Environmental, Inc. (AEI) has prepared this work plan on behalf of Mr. Vic Lum, in response to his request for a soil and groundwater investigation at 245 8th St. in Oakland, California. The proposed site assessment activities have been initiated by the property owner in accordance with the Regional Water Quality Control Board's requirements. **AEI proposes a single soil boring and the installation of one monitoring well in the boring.** This subsurface investigation would include borehole "logging", soil sampling and analysis, well development, sampling and analysis of groundwater from the monitoring well. Prior to commencement of field activities, this work plan will be approved by the Alameda County Health Care Services Department, and a well construction permit will be obtained from the Alameda County Flood Control and Water Conservation District, Zone 7.

2.0 SITE DESCRIPTION

The site is located less than 1/8 of a mile northeast of Interstate 880 and less than 1/2 mile east of the Alameda Inner Harbor (Figure 1: Site Location Map).

The property under investigation is an operating gasoline filling and auto service station. Four 1,000 gallon gasoline underground storage tanks were removed from a common pit, partially under the sidewalk along Alice St. (Figure 2: Site Plan). One 250 gallon waste oil tank was removed from behind the western corner of the building. Two larger gasoline UST's remain in use near the property line along Alice St.

According to mapping of the U.S. Geological Survey (1), the site rests upon dune sands, known as the Merritt sand, which formed during lower stands of sea level that occurred during the Pleistocene age more than 40,000 years ago. Characteristically, it is a loose, well soiled, fine to medium grained sand with subordinate silt. Previous studies in the area indicate the presence of shallow freshwater aquifers in this portion of Oakland. **A local water table can be expected at about 20 feet below ground surface. Groundwater flow direction is expected to be toward the south-southwest.**

3.0 SITE BACKGROUND

Four 1000 gallon and one 250 gallon underground storage tanks were removed from the property located at 245 8th Street in Oakland, California and transported as hazardous waste to the Erickson Disposal Facility in Richmond, California. There, the tanks were cleaned and disposed of as scrap metal (Appendix A: Report of Previous Investigative Work).

Six samples of the native soil beneath the four gasoline tanks yielded analytical results for total petroleum hydrocarbons (TPH) as gasoline ranging from 1.1 to 31 parts per million (ppm) with benzene, toluene, ethylbenzene, xylenes (BTEX) ranging from non detected (N.D.) to 120 ppb xylenes in sample AN1. A small furtherance of the excavation was performed after receipt of these analyses, in the area of the most contaminated sample, AN1 (18 ppm TPH gas). Resampling there provided a sample with 3.9 ppm TPH as gas.

Two excavated soil stockpiles related to the gas tank excavations were sampled at 9 locations, and the samples composited for two analyses which showed concentrations of TPH as gasoline at levels very similar to the tank pit samples. Total lead concentrations were less than 10 ppm in all of the gasoline tank pit soil samples, and 66 ppm and 120 ppm in the stockpile samples.

A single soil sample from beneath the waste oil tank contained low level TPH as gasoline and TPH as diesel, with total BTEX of 79 ppb. Volatile organic compounds analysis by EPA method 8240 gave N.D. results. Analysis of the sample for the 5 LUFT metals yielded low levels of Cd, Cr, Pb, Ni, Zn. The waste oil tank pit was then further excavated to attempt to remove residual contaminated soil. The excavation was enlarged in all four directions, and to the limit imposed by the adjacent building. The pit walls were sampled, and analysis of these four samples showed N.D. for TOG and background levels of total lead, except for the eastern wall sample which contained 2,110 ppm TOG and 70 ppm lead. The excavated and stockpiled soil from the waste oil tank was analyzed for the same chemical constituents. Three samples were composited for one analysis. Oil and grease was detected at 1,100 ppm. TPH as gas and diesel, BTEX, and the metals were found to exist at low levels. All of the stockpiled soil has been profiled and accepted for disposal during the week of October 11, 1993.

The excavations were backfilled with clean imported fill, and have not yet been resurfaced.

A Underground Storage Tank Unauthorized Release Form and the tank removal Final Report were filed with the Alameda County Health Services Department. August 20, 1993 correspondence from Alameda County Environmental Health Dept. directs that the area of the waste oil tank be investigated further.

4.0 SOIL BORING INVESTIGATION

The plan for site investigation includes hollow stem auger drilling, soil sampling and analysis, monitoring well construction, development, and groundwater sampling and analysis.

soil. lead + TOG

The focus of this investigation is to determine the possible presence of petroleum hydrocarbons in soils and groundwater in the immediate vicinity of the removed waste oil tank. Soil and groundwater samples will be submitted for chemical analysis of total petroleum hydrocarbons as gasoline (EPA 5030/8015) with BTEX (EPA method 8020/602), and TOG (method 5520 d&f) at a State Certified laboratory.

One soil boring will be advanced at a down gradient location (south of pit) within 10 feet of the waste oil UST excavation. The soil boring will be converted into a groundwater monitoring well. The well designation MW-1 will be used to reference the data generated from that location (Figure 2).

A hydraulic rotary drill with 4.25" I.D. by 8" O.D. hollow stem augers will be used. Drilling will proceed to first encountered groundwater plus 10-15 feet, with an expected maximum of 35 feet depth below grade. If groundwater is not encountered in the first 50 feet of strata, the boring will be backfilled with neat portland cement.

The boring will be continuously logged on site by a geologist using the Unified Soil Classification System. Undisturbed soil samples will be taken at 5 foot intervals, starting at 5 foot depth, with a hammer driven California Modified split spoon sampler. The sampler will be advanced ahead of the auger tip by successive hammer blows. The samples will be collected for visual classification and chemical analysis in two inch brass or stainless steel tubes. A total of three soil samples from the boring will be analyzed at a state certified laboratory for TPH as gas, BTEX, and TOG.

2" dia?

The soil samples selected for chemical testing will be determined by the geologist on site at the time of sampling. Soil samples obtained during drilling will be screened in the field via sensory perceptions and proximity to the groundwater table.

Samples designated for laboratory analysis will be sealed on the ends with aluminum foil, plastic caps, and tape. The samples will be placed in an ice chest with dry ice and delivered to a State certified laboratory with chain of custody documents.

A detailed description of sample collection and handling procedures by Priority Labs is appended to this work plan (Appendix C: Sample QA/QC Procedures).

All sampling equipment will be cleaned in buckets with brushes and a TSP or Alconox solution, then rinsed twice with tap water. The augers will be steam cleaned before and after use. Rinseates will be contained on site in labeled drums.

Cuttings generated during drilling will be stored on site in labeled 55 gallon drums. On site treatment or off site disposal of contaminated drill cuttings or used waters are not a part of this work scope. The client will be advised of the soil sample results and soil treatment/disposal options. follow up

5.0 GROUNDWATER INVESTIGATION

The boring described above will be converted into a 2" monitoring well. The well will be constructed of 2 inch flush threaded Schedule 40 PVC casing, with up to 15 feet of .01" or .02" factory-slotted well screen. The top of the well screen will extend up to 3 feet above the encountered groundwater level to account for seasonal fluctuations (Figure 3: Typical Well Construction Diagram). The well casing will be inserted through the augers to a point a few inches above the borehole terminus where it will be suspended until the well is secured within the sand pack. Sand (#2 or #3) will be poured through the augers in one to two foot lifts up to about two feet above the top of the perforated casing. One to two feet of bentonite chips will be placed above the sand, and activated with tap water. The seal will be finished up to the surface with tremmied cement/bentonite grout. A locking top cap and a flush-mounted watertight well cover will be installed.

The well will be developed by mild surging and bailing, and pumping of groundwater into DOT 17H drums until the water appears to be reasonably clear. A minimum of 10 well volumes will be removed.

On the day of sampling, a groundwater level measurement will be taken. Groundwater will be checked for sheen and free product prior to purging and sampling. Free product and sheen will be measured with an acrylic bailer which will be lowered slowly to the groundwater surface and filled about half full for direct observation.

Prior to obtaining a groundwater sample from the monitoring well, not less than 5 well volumes of water will be bailed from the well into 17H drums. A sample will be obtained in a precleaned bailer, secured in 40 ml volatile organic analysis vials and glass liter bottles, placed in a cooler with wet ice and delivered to a State certified laboratory with chain of custody documents. The water sample will be analyzed as described above.

Well development and sampling equipment will be decontaminated as described above.

6.0 SITE SAFETY

Prior to commencement of field activities, a site safety meeting will be held at a designated command post near the working area. Emergency procedures will be outlined at this meeting.

Also, the hazards of the known or suspected chemicals of interest will be explained. Level D personal protection equipment is the anticipated maximum amount of protection needed. A site safety plan which conforms to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during performance of this project (Appendix B: Site Health & Safety Plan).

A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel-toe shoes must be worn, and where unauthorized personnel will not be allowed. If, during drilling, fuel product odors are deemed to be substantial, half-face respirators with organic vapor cartridges will be worn.

A nearby hospital will be designated in the site safety plan as the emergency medical facility of first choice. A map with a course plotted to the hospital will be on site.

7.0 ESTIMATED SCHEDULE

Upon acceptance of this workplan by the Alameda County Health Services Department, work will commence within a two week period. Both the Alameda County Health Services Department and the Alameda County Water District will be given adequate notification of the scheduled day of drilling. Soil and groundwater laboratory results will be obtained within two weeks of collection. The final report will be prepared and copies will be delivered to the Alameda County Health Services Department, the Regional Water Quality Control Board and the Alameda County Water District. A description of the project schedule, starting now, is as follows:

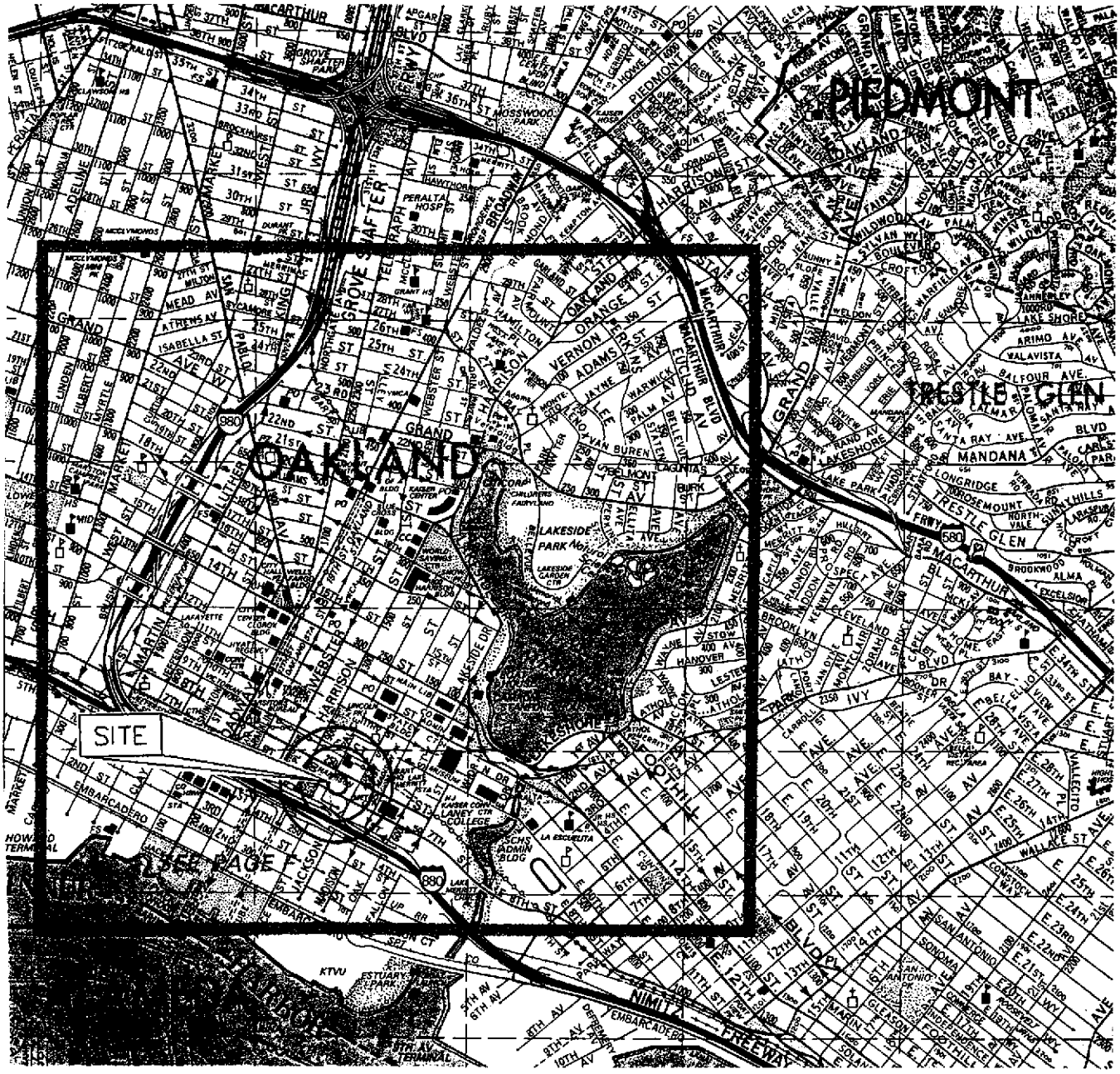
Week 1:	Workplan Preparation
Week 2 & 3:	Review of Workplan by the ACHCSD
Week 4:	Drilling and Well Sampling
Week 5:	Laboratory Analysis
Week 6:	Preparation of Final Report

8.0 FINAL REPORT

A complete and final report of methods, findings, and conclusions from work proposed herein will be submitted to the client for forwarding to the appropriate agencies. The report will be submitted under the seal of a State Registered Geologist, Dr. Darwin Myers (#946). Dr. Myers and the staff of All Environmental, Inc. have successfully completed countless tank removal, site investigation, and remediation projects throughout California.

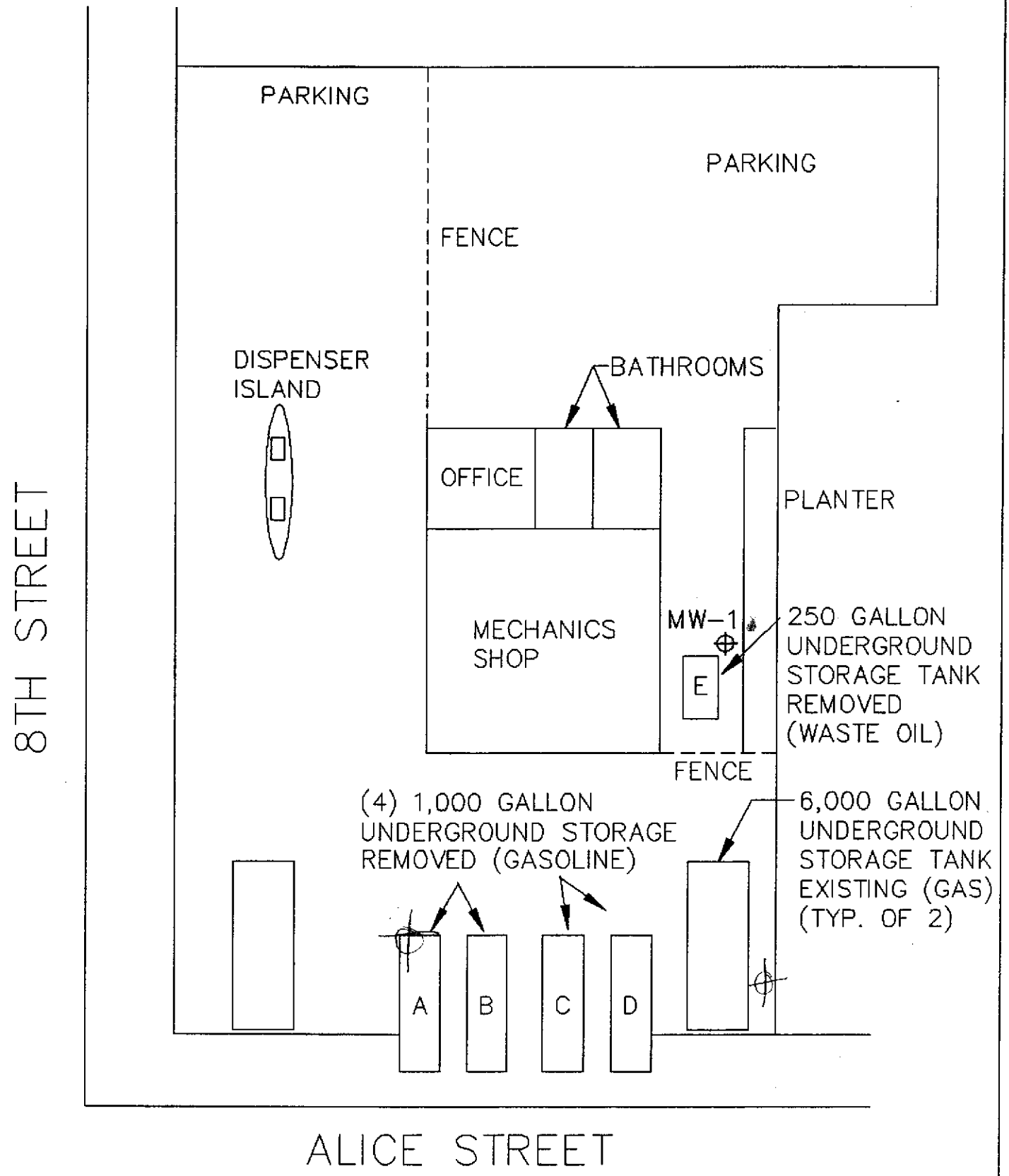
APPENDIX A

REPORTS OF PREVIOUS INVESTIGATIVE WORK

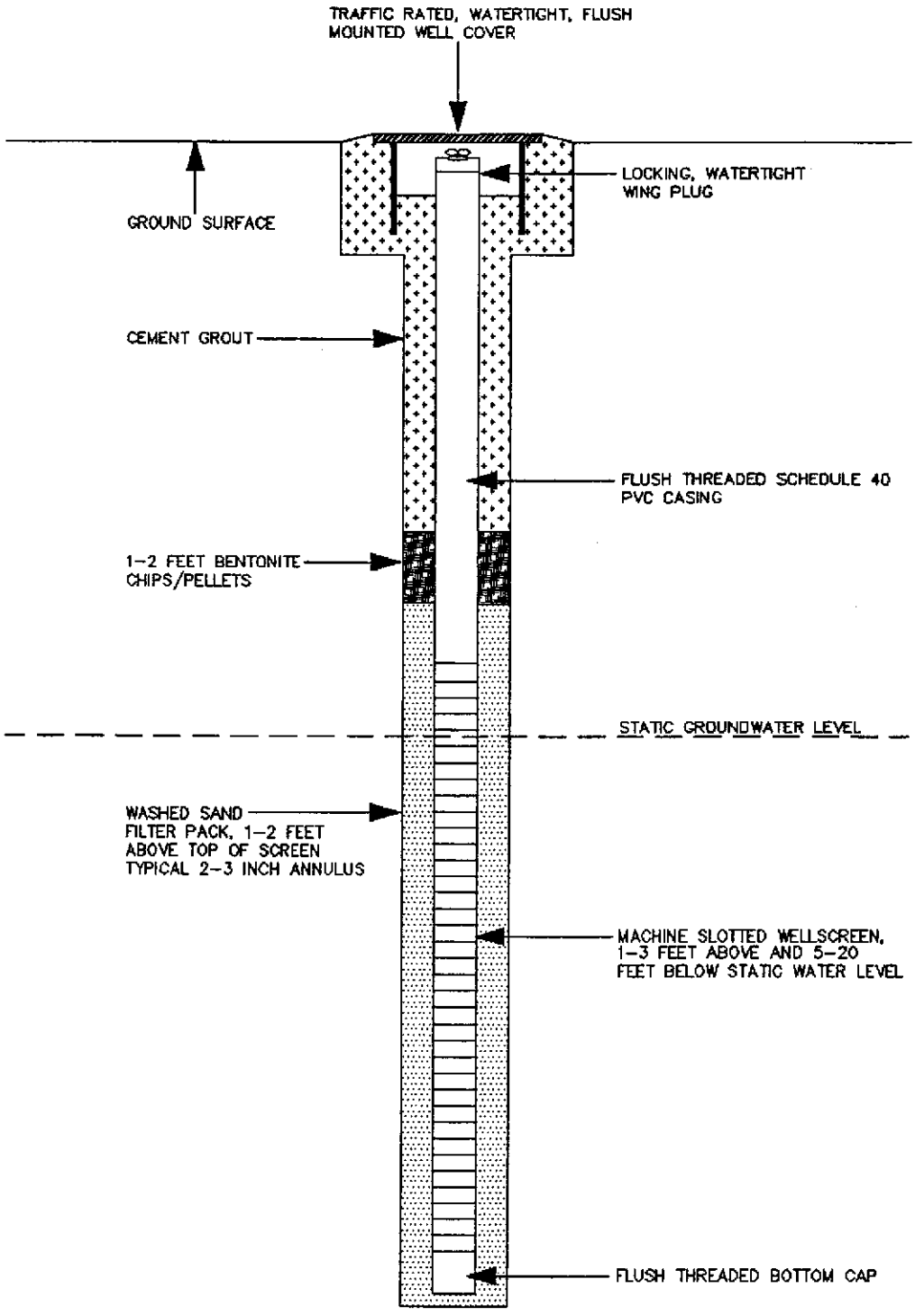


From Thomas Bros. Map – 1992

ALL ENVIRONMENTAL, INC. 2641 CROW CANYON RD, SAN RAMON		
SCALE: 1 INCH = 2200 FEET	APPROVED BY:	DRAWN BY: C.H.
DATE: 10-7-93		REVISED: C.G.
SITE LOCATION MAP		
VIC'S AUTOMOTIVE 245 8th. ST., OAKLAND		DRAWING NUMBER: FIGURE 1



ALL ENVIRONMENTAL, INC. 2641 CROW CANYON RD, SAN RAMON		
SCALE: 1 INCH = 15 FEET	APPROVED BY:	DRAWN BY: C.H.
DATE: 10-7-93		REVISED: C.C.
SITE PLAN		
VIC'S AUTOMOTIVE 245 8th. ST., OAKLAND		DRAWING NUMBER: FIGURE 2



ALL ENVIRONMENTAL, INC. 2641 CROW CANYON RD, SAN RAMON		
SCALE: NOT TO SCALE	APPROVED BY:	DRAWN BY: G.G.
DATE: 10-7-93		REVISED: G.G.
TYPICAL MONITORING WELL		
VIC'S AUTOMOTIVE 245 8th. ST., OAKLAND		DRAWING NUMBER: FIGURE 3