



ENVIRONMENTAL
PROTECTION
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March 24, 1999

Mr. Larry Seto
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: 1310 Central Avenue
Alameda, California
Project No. 3164

Dear Mr. Seto:

The following workplan is in response to your request for further soil and groundwater investigation at the above referenced site. The workplan describes activities to conduct a subsurface investigation as requested in your January 5, 1999 letter. AEI is providing environmental consulting services to the owner of the property, Mr. Pritpaul Sappal, and is submitting this letter on his behalf.

Site Description and Background

The site is a triangular shaped parcel located at the intersection between Encinal Street and Central Avenue in the city of Alameda as shown in Figure 1. The site is occupied by an active gasoline service station.

Three underground storage fuel tanks and one waste oil tank, associated piping and dispensers were removed from the property in May, 1996 by Petrotek. No reports detailing the tank removals or any subsequent remedial work were issued by Petrotek. According to Mr. Sappal, the tanks consisted of one 10,000 gallon, one 7,500 gallon and one 5,000 gallon gasoline fuel tanks formerly located in the western corner of the site. The fuel tanks were located adjacent to one another and one excavation was created from their removal. The bottom of the 10,000 gallon fuel tank was set at a greater depth (approximately 12 feet bgs) than the other fuel tanks and groundwater was observed upon its removal. One 500 gallon waste oil tank was located adjacent to the subject property building. Refer to Figure 2 for locations of the former fuel tanks and dispensers.

Soil samples were collected from beneath the 7,500 gallon and 5,000 gallon fuel tanks and from beneath the waste oil tank. Contaminated soil was reportedly removed from the fuel tank excavation and possibly from beneath the former dispensers. The 7,500 gallon and 5,000 gallon fuel tanks excavation was extended to groundwater and laterally in the north, south and west directions. Soil samples were also collected from beneath the dispenser islands. Two soil samples were collected from trenches believed to be created

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when the piping was removed. The exact location of the trench samples is unknown. Refer Figure 2 for the lateral limits of the excavation.

The analytical results indicated that elevated levels of petroleum hydrocarbons were present in the soil. Mr. Sappal reports that approximately 600 tons of contaminated soil was removed and disposed of off-site. No confirmation soil samples were collected following the soil removal.

According to Mr. Sappal, free-floating product was observed on the groundwater in the fuel tank excavation. Approximately 15,000 gallons of water and product were reportedly removed from the fuel tank excavation. The water was treated prior to discharging into the ~~sanitary sewer~~ ^{storm drain}. Two new underground storage tanks were installed within the same fuel tank excavation. New dispenser islands and associated piping were also installed. Refer to Figure 2 for the present day station configuration.

A subsurface investigation was requested by the Alameda County Health Care Services Agency (ACHCSA) to assess whether all of the impacted soil had been removed from the property and whether groundwater beneath the site had been impacted. A total of 14 soil borings were performed on the property by AEI on November 11 and 12, 1998. Soil samples analyzed during this investigation revealed levels of TPH as gasoline up to 5,900 mg/kg remained in the soil around the former tank location and dispensers. Groundwater was also impacted with TPH as gasoline as high as 120,000 µg/L and benzene as high as 7,200 µg/L. Please reference Phase II Subsurface Investigation Report issued December 14, 1999 by AEI and Figure 2 for the locations of the previous borings.

Based on the results of this investigation, further investigation was requested by the ACHCSA in a letter dated January 5, 1999. The following workplan describes the installation of five groundwater monitoring wells on property to further assess the extent of soil and groundwater impact.

Geologic Conditions

The native soil beneath the site encountered during the previous investigation consisted of silty and clayey sand. Groundwater was encountered at between 4 and 7 feet below ground surface during the boring activities. The topography of the area is generally flat, and based on the proximity of the site to both Oakland Inner Harbor and the San Francisco Bay, groundwater flow direction is likely tidally influenced.

Scope of Work

AEI proposes to advance five soil borings (AEI-1, AEI-2, AEI-3, AEI-4 and AEI-5) at the site in the locations shown on Figure 3. The boring advanced near the former waste oil tank will be advanced within ten feet of the former tank. The soil borings will be converted to four inch and two inch groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4 and AEI-5).

A Mobile B-57 or CME 75 hydraulic rotary drill with 6.25" I.D. by 10.5" O.D. hollow stem augers will be used to drill the borings. The borings will be drilled to first encountered groundwater plus at least 10 feet, corresponding to a maximum depth of approximately 20 feet bgs.

The soil borings will be continuously logged on-site by an AEI geologist using the Unified Soil Classification System. Two undisturbed soil samples will be collected from each boring. One sample will be collected from approximately 4 feet bgs and one from the apparent capillary zone. One soil sample from each boring will be analyzed at a state certified laboratory as determined by the on-site geologist. Soil samples obtained during drilling will be screened in the field with a portable organic vapor meter.

All soil samples will be secured using teflon tape and plastic caps. All samples will be put on ice and transported, under chain of custody procedures to McCampbell Analytical, Inc. of Pacheco, California. Selected soil samples will be analyzed for TPH as gasoline (EPA method 3550/8015), benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) (EPA method 5030/8020), and TPH as diesel (EPA method 3550/8015M).

All sampling equipment will be cleaned in buckets with brushes with a TSP or Alconox solution, then rinsed twice with tap water. The drilling augers will be steam cleaned prior to drilling. Rinsate will be contained on-site in sealed, labeled drums.

Cuttings generated during drilling will be stored on-site in 55 gallon drums. The soil will be sampled, analyzed and disposed of in a local landfill unless deemed suitable for re-use on-site.

The monitoring wells will be constructed of flush threaded Schedule 40 PVC casing, with up to 12 feet of .01" or .02" factory-slotted well screen. Monitoring wells AEI-1 and AEI-5 will be constructed of 4" well casing and wells AEI-2, AEI-3, and AEI-4 will be constructed of 2" casing. The top of the well screen will extend up to 3 feet above the encountered groundwater level to account for seasonal fluctuations. The well casing will be inserted through the augers 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 two feet above the top of the perforated casing. Up to two feet of bentonite pellets will be placed above the sand and activated with tap water. The seal will be finished up to the surface with cement/bentonite grout. A locking top cap and a flush-mounted watertight well cover will be installed.

Each well will be constructed with air sparge points in the event future active remediation activities are performed. These sparge points will be placed within the groundwater zone, approximately 5 feet below the terminus of the well. A three foot bentonite seal will separate the sparge zone from the sand pack at the terminus of the well. These points will remain inactive during initial monitoring activities. They will only be used with the approval of the appropriate agencies to facilitate site remediation.

The wells will be developed by bailing water into a DOT 17H drum until the water appears to be reasonably clear with a minimum of 10 well volumes removed. Well development will take place no less than 72 hours after installation of the wells.

Prior to obtaining water samples from the monitoring wells, no less than 5 well volumes of water will be bailed from the wells. Groundwater will be checked for sheen and free product prior to purging and sampling. Samples will be obtained in a pre-cleaned bailer, secured in 40 milliliter volatile organic analysis vials and amber liter bottles, placed in a cooler with wet ice and transported, under chain of custody procedures to the laboratory. Water samples will be analyzed for TPH as gasoline, TPH as diesel, BTEX and MTBE. Water samples collected from the well installed near the former waste oil tank will also be analyzed for total oil and grease, volatile halocarbons, and the five LUFT metals.

The five wells will be surveyed to Mean Sea Level, with an accuracy of 0.01 foot for calculation of groundwater flow direction and gradient.

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 conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.

A working area will be established with barricades and warning tape to delineate the zone where hard hats and steel-toed 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.

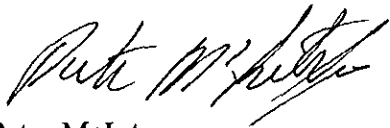
Estimated Schedule

Work will commence within three weeks after approval from the ACHCSA. The ACHCSA will be given adequate notification of the scheduled day of drilling to schedule field inspectors if desired. Laboratory analytical results will be obtained within one week of collection. The final report will be prepared promptly, and copies will be delivered to the client and the ACHCSA.

AEI will monitor the wells and analyze groundwater samples on a quarterly basis for the next year. This will document the depth, gradient and concentrations of dissolved hydrocarbons in the groundwater beneath the site. Quarterly monitoring reports will be submitted to the ACHCSA following each sampling episode.

AEI requests your approval to proceed with this project. Please let me know if you need additional information and please do not hesitate to call me at (925) 283-6000 if you have any questions.

Sincerely,



Peter McIntyre
Project Geologist



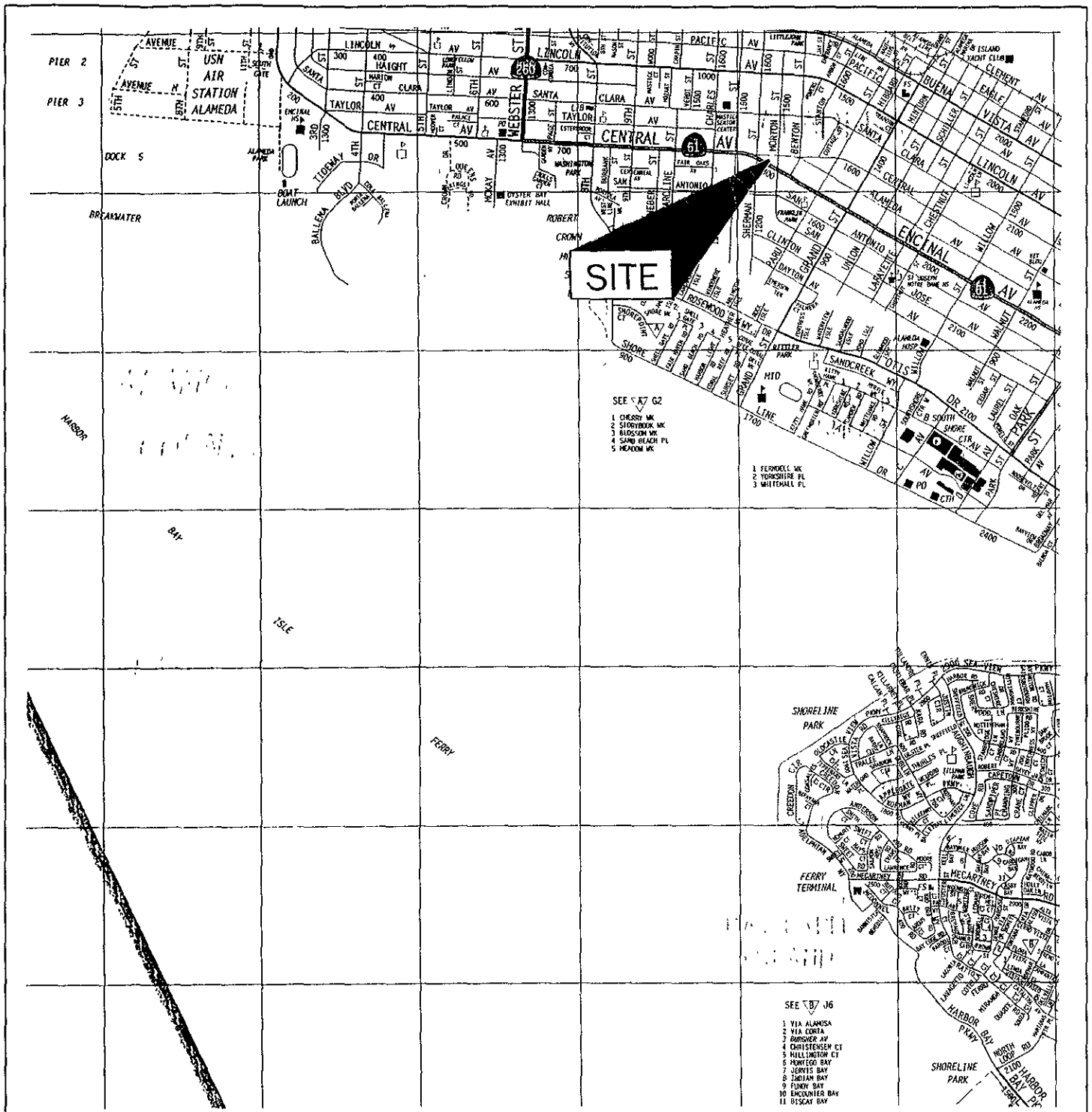
Joseph P. Derhake, PE, CAC
Senior Author



cc: Mr. Pritpaul Sappal, 872 Coral Drive, Rodeo, CA 94572

Figures

1. Site Location Map
2. Site Plan
3. Proposed Well Locations



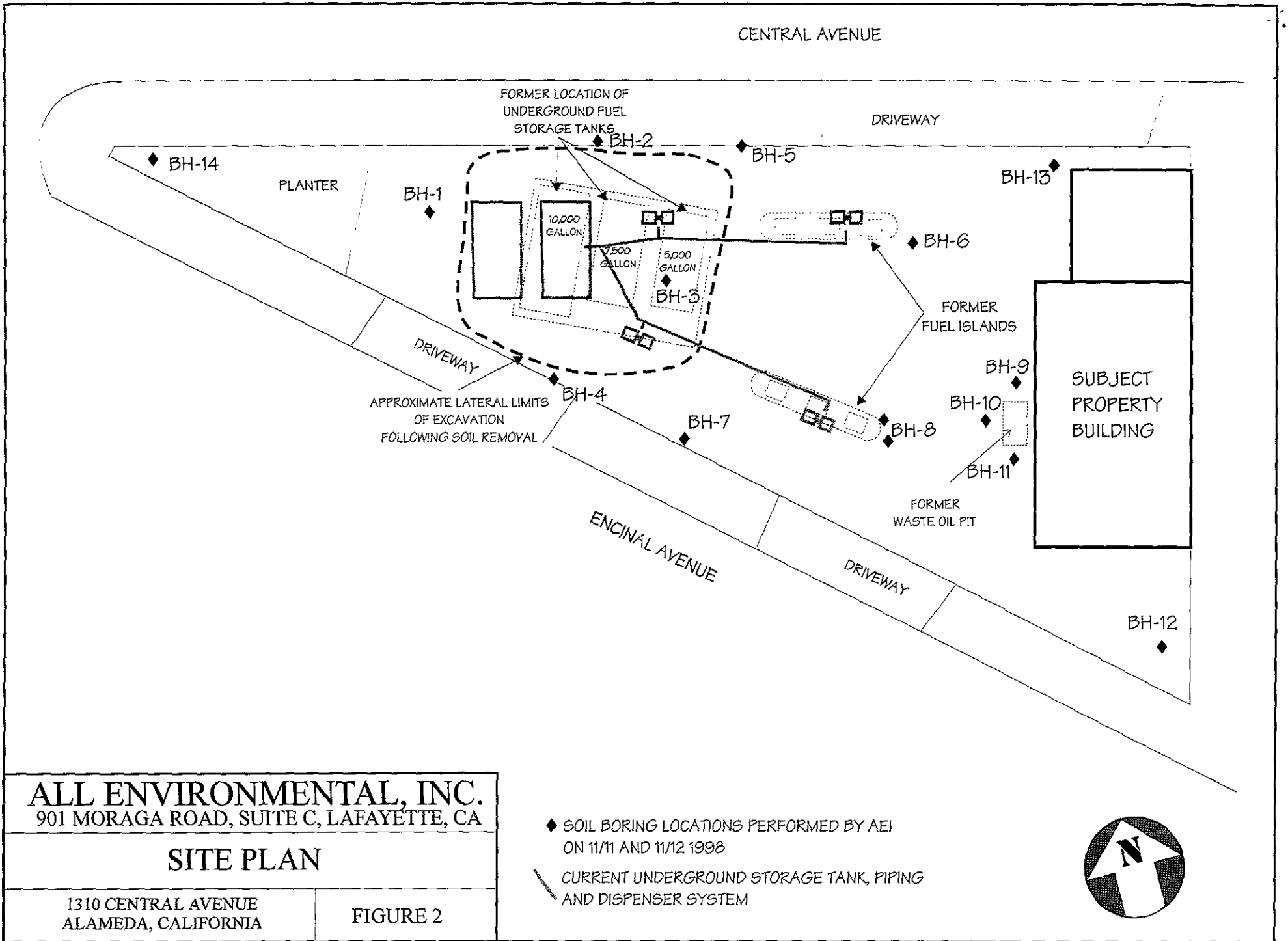
SOURCE:
THOMAS GUIDE
1997
1 inch = 2,400 feet

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SITE LOCATION MAP

1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

FIGURE 1

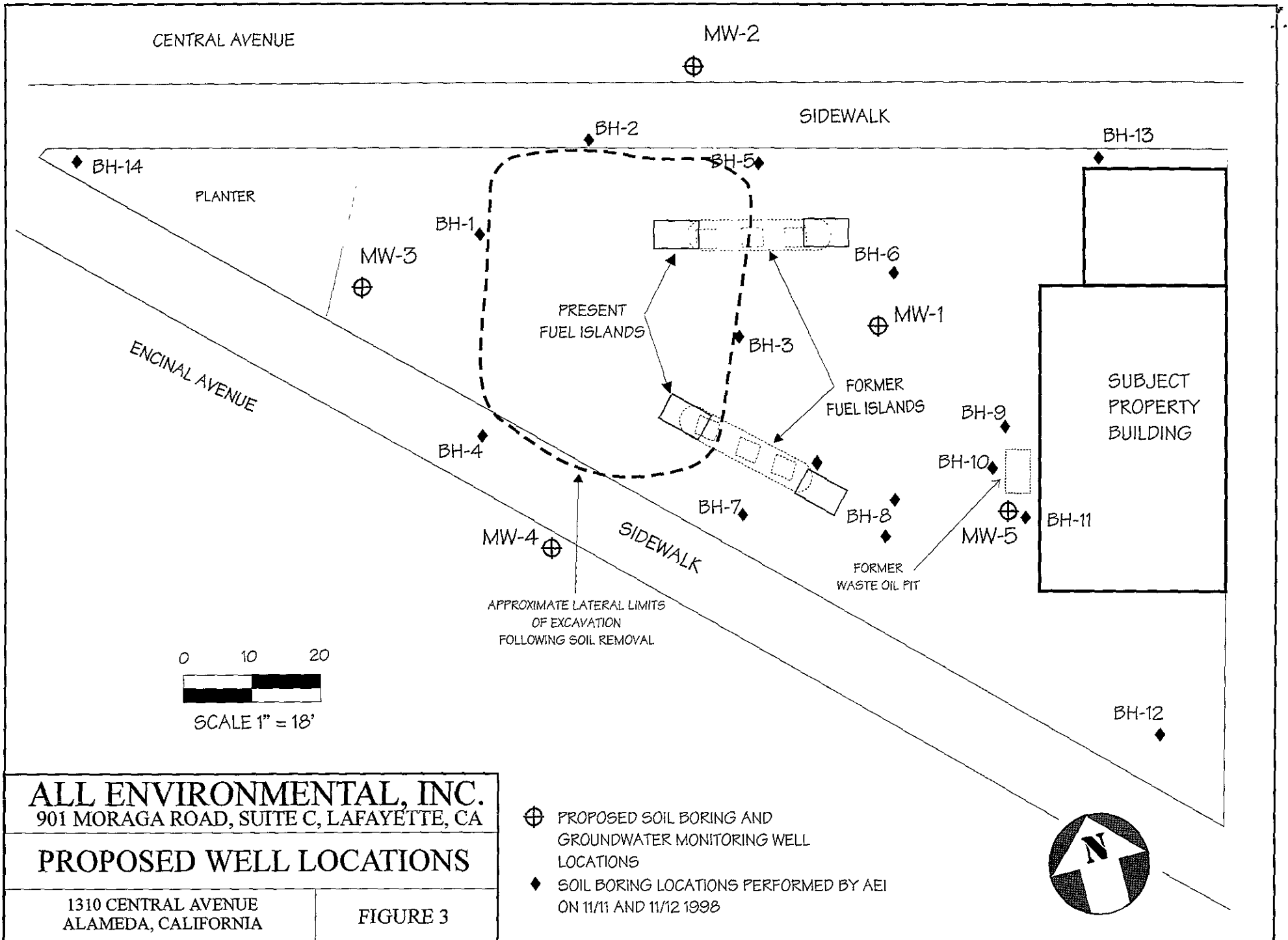


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SITE PLAN

1310 CENTRAL AVENUE
 ALAMEDA, CALIFORNIA

FIGURE 2



CENTRAL AVENUE

MW-2

SIDEWALK

BH-13

BH-14

PLANTER

MW-3

BH-1

PRESENT FUEL ISLANDS

BH-5

BH-6

MW-1

ENCINAL AVENUE

FORMER FUEL ISLANDS

BH-3

BH-9

SUBJECT PROPERTY BUILDING

BH-4

BH-10

BH-11

MW-4

SIDEWALK

FORMER WASTE OIL PIT

BH-7

BH-8

MW-5

APPROXIMATE LATERAL LIMITS OF EXCAVATION FOLLOWING SOIL REMOVAL

0 10 20



SCALE 1" = 18'

BH-12

