



Mr. Don Hwang, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

ENVIRONMENTAL
PROTECTION
00 JAN 17 AM 8:53

Subject: Work Plan
5630 San Pablo Avenue
Oakland, CA 94604
AEI Project No. 3799

Dear Mr. Hwang:

AEI Consultants (AEI) presents the following work plan on behalf of Rita M. Robinson. The work plan has been prepared in response to your request in a letter dated November 17, 2000 for a further investigation of the impacted groundwater at the above referenced property (refer to Figure 1 for site location). The work plan describes activities to assess the nature and vertical and lateral extent of the release of petroleum hydrocarbons to soil and groundwater.

Site Description and Background

The site is located in a mixed residential and commercial area of the City of Oakland. The site is located on the southeast corner of Aileen Street and San Pablo Avenue (Figure 1 – Site location map). The site was historically occupied by a gasoline service station. Underground storage tanks (USTs) and fuel dispensers were removed from the site in 1967.

AEI performed a Phase II subsurface investigation and sampled soil and groundwater on July 6, 2000 as part of a real estate transaction. Locations of soil borings are shown on Figure 2, Site Map and Borehole Locations. Results of this investigation are given in Table 1.

Table 1. Maximum Hydrocarbon Concentrations Detected in Soil and Groundwater

Sample	TPH-g	TPH-d	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Soil*	≤1300	≤200	≤1.5	≤0.5	≤4.6	≤0.43	<3
Groundwater**	≤620	≤380	≤12	≤1.2	≤12	≤2.9	<5.0.

*Units for soil analyses – mg/kg

**Units for groundwater analyses – ug/L

Scope of Work

AEI proposes to advance five borings (AEI-SB-1 through AEI-SB-5) on the property at the locations specified on Figure 2. The boring locations were chosen to determine the lateral extent of the fuel hydrocarbons, especially as to whether migration has occurred across site boundaries.

The borings will be advanced with a hydraulic, direct push drilling rig to first encountered groundwater. According to existing borehole logs, the water table was encountered at a maximum depth of 19 feet. Adding approximately 3 feet to the depth to the water table to allow for groundwater sample collection corresponds to a proposed maximum well depth of approximately 22 feet below ground surface (bgs).

Using the Unified Soil Classification System, an AEI geologist will log the soil borings on-site. Up to three samples of undisturbed soil will be collected from each boring from above the water table. Soil will be continuously collected within 2" diameter acrylic liners. A six-inch section of the liners will be selected as the sample. The soil samples will be sealed with Teflon film and plastic end caps. Soil samples obtained during drilling will be screened in the field with a Photo Ionization Detector (PID).

Groundwater samples will be obtained from the five borings. Exposing a screened interval of the push rods within the water bearing deposits will facilitate collection of the groundwater samples. A drop tube will be inserted into the direct push rods and water will be pumped through the drop tube into sample containers. If groundwater samples cannot be collected through the rods, then the rods will be removed and screened PVC casing will be temporarily installed to allow for water generation. Following sample collection and the removal of sample collection equipment and/or casing, the borings will be converted to monitoring wells.

All soil and groundwater samples will be stored over water ice and transported, under chain of custody procedures to McCampbell Analytical, Inc. (DOHS Certification Number 1644) of Pacheco, California. Three soil samples, one groundwater sample from each boring, and one groundwater sample from each well will be analyzed for TPH as gasoline (EPA Method 5030/8015) and TPH as diesel (EPA Method 3550/8015), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE) (EPA Method 5030/8020).

No cuttings will be generated as a result of the drilling and all core materials will be submitted to the laboratory.

The 23-foot soil borings will be converted to groundwater monitoring wells by the following procedure.

1. A casing with an inside diameter of 2.5 inches with a disposable tip will be pushed to a depth of approximately 22 feet bgs;

2. Approximately 15 feet of Schedule 40 2-inch PVC casing and 5 feet of 0.020 factory slotted 2-inch well screen flush threaded bottom cap will be inserted into the pushed casing;
3. The pushed casing will be removed;
4. The annulus will be filled with clean medium Monterey sand to 2 feet above the screened interval;
5. The annulus will be filled with 2 feet of bentonite pellets;
6. The remaining annulus will be grouted to surface;
7. A flush locking well box will be installed and finished to match the existing asphalt or concrete pavement surface.

The 2-inch wells will be developed by surging in an effort to clean the well screen and sand pack of any accumulated fines. Wells will be further developed by bailing while monitoring field parameters, temperature, conductivity, and pH. When ten well volumes have been bailed, when three consecutive readings of these parameters are constant, or when the well is bailed to dryness, the well will be considered developed. A sample of groundwater will then be taken.

A licensed California surveyor will survey the elevations of the top of casing of the four wells. Water levels will be measured with an electric well sounder.

Following the receipt of analytical results from the laboratory, AEI will prepare a technical report detailing the methods and results of the investigation. The report will consist of text giving the procedures used and problems encountered, figures of boring locations and well construction detail, and tables of analytical results and soil boring logs. Conclusions will be drawn concerning the depth to the water table, the hydraulic gradient and flow direction, the existence and extent of contaminant plumes, and the possible need for additional well locations or other investigative efforts.

Site Safety

Prior to commencement of field activities, a site safety meeting will be held at a designated 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 be scheduled following final approval of a scope of work by the Alameda County Health Care Services Agency and finalization of a contractual agreement with the owners of the property. Drilling permits will be obtained and adequate notification will be given to the Alameda County Health Care Services Agency of the scheduled day of drilling to schedule a field inspection. Well development will occur on or around the day of drilling and the wells will be sampled shortly thereafter. Laboratory analytical results will be obtained within one week of sample collection. The final report will be prepared promptly for the client and the Alameda County Health Care Services Agency.

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,



Edward I. Wallick, Ph.D.
Senior Hydrogeologist



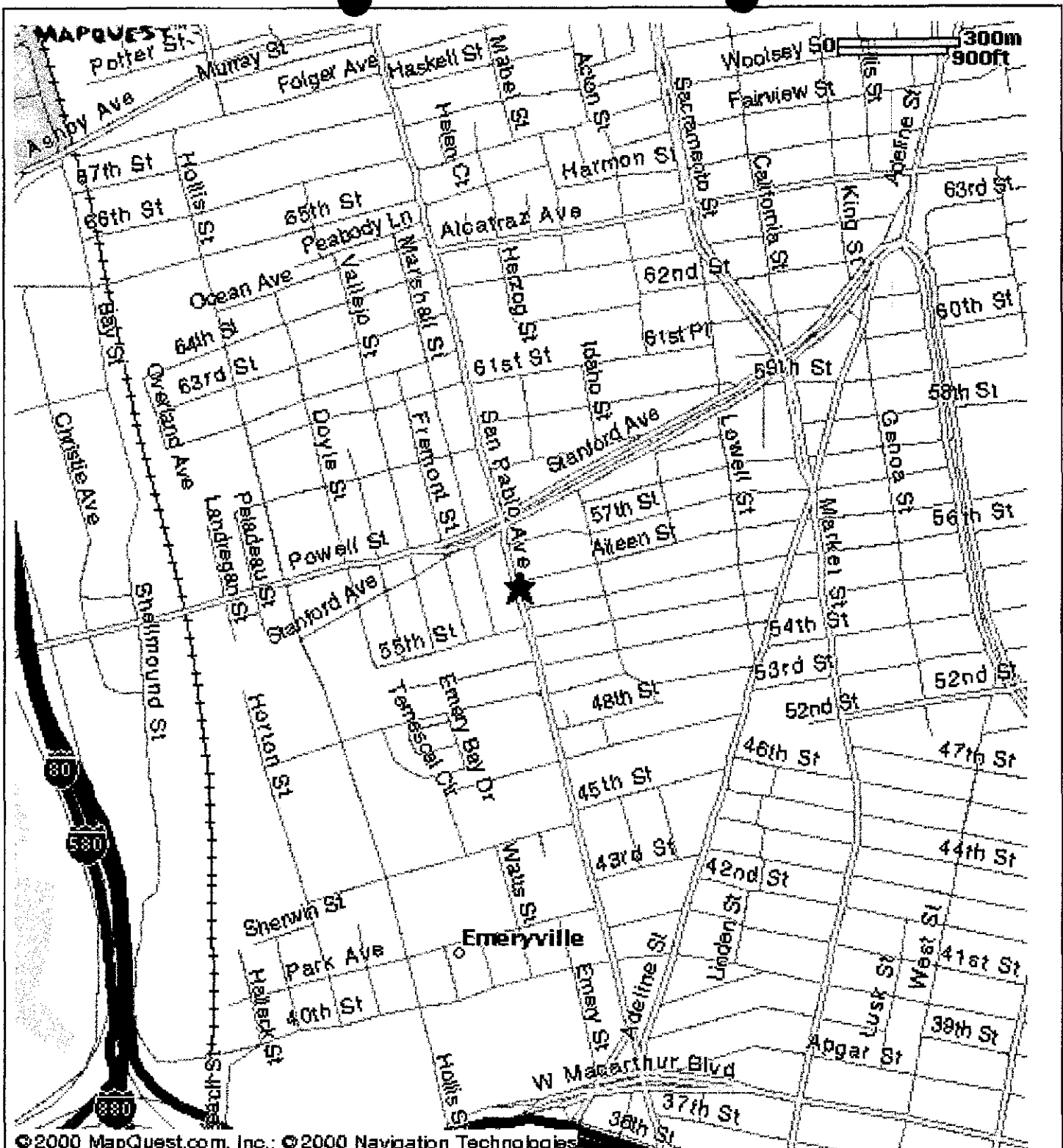
Joseph P. Derhake, P.E.
Principal



Cc: Mr. Donald Rosenberg
P.O. Box 2194
Walnut Creek, CA 94595

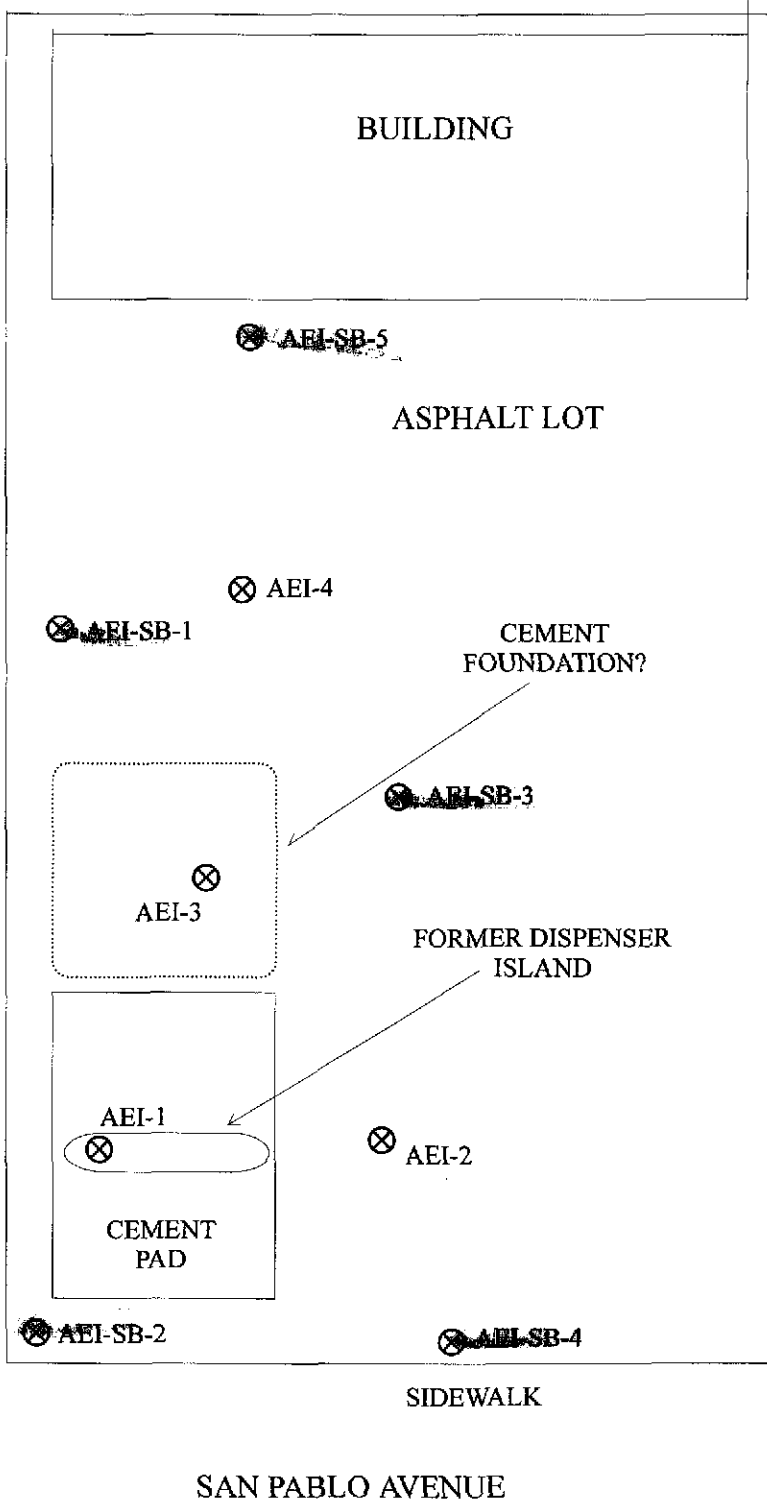
Figure 1 Site Location Map
Figure 2 Site Map and Borehole Locations

Table 1 Maximum Hydrocarbon Concentrations Detected in Soil and Groundwater



© 2000 MapQuest.com, Inc.; © 2000 Navigation Technologies

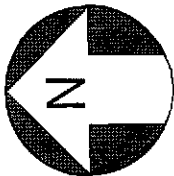
AEI CONSULTANTS 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA	
Site Location Map	
5630 SAN PABLO AVENUE OAKLAND, CALIFORNIA	FIGURE 1 PROJECT NO 3799



⊗ AEI-SB-X PROPOSED NEW BORINGS

⊗ AEI-X SOIL BORINGS LOCATIONS PERFORMED BY AEI, JULY 6, 2000

SCALE: 1 in = 15 ft



AEI CONSULTANTS 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA	
SITE PLAN AND BOREHOLE LOCATIONS	
5630 SAN PABLO AVENUE OAKLAND, CALIFORNIA	FIGURE 2 PROJECT NO 3799



Mr. Don Hwang, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

ENVIRONMENTAL
PROTECTION
00 DEC 18 PM 4:49

Subject: Work Plan
5630 San Pablo Avenue
Oakland, CA 94604
AEI Project No. 3799

Dear Mr. Hwang:

AEI Consultants (AEI) presents the following work plan on behalf of Rita M. Robinson. The work plan has been prepared in response to your request in a letter dated November 17, 2000 for a further investigation of the impacted groundwater at the above referenced property (refer to Figure 1 for site location). The work plan describes activities to assess the nature and vertical and lateral extent of the release of petroleum hydrocarbons to soil and groundwater.

Site Description and Background

The site is located in a mixed residential and commercial area of the City of Oakland. The site is located on the southeast corner of Aileen Street and San Pablo Avenue (Figure 1 – Site location map). The site was historically occupied by a gasoline service station. Underground storage tanks (USTs) and fuel dispensers were removed from the site in 1967.

AEI performed a Phase II subsurface investigation and sampled soil and groundwater on July 6, 2000 as part of a real estate transaction. Locations of soil borings are shown on Figure 2, Site Map and Borehole Locations. Results of this investigation are given in Table 1.

Table 1. Maximum Hydrocarbon Concentrations Detected in Soil and Groundwater

Sample	TPH-g	TPH-d	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Soil*	≤1300	≤200	≤1.5	≤0.5	≤4.6	≤0.43	<3
Groundwater**	≤620	≤380	≤12	≤1.2	≤12	≤2.9	<5.0.

*Units for soil analyses – mg/kg

**Units for groundwater analyses – ug/L

2309 PCH #206
Hermosa Beach 90254

Scope of Work

AEI proposes to advance four borings (SB-1 through SB-4) on the property at the locations specified on Figure 2. The boring locations were chosen to determine the lateral extent of the fuel hydrocarbons, especially as to whether migration has occurred across site boundaries.

The borings will be advanced with a hydraulic, direct push drilling rig to first encountered groundwater. According to existing borehole logs, the water table was encountered at a maximum depth of 19 feet. Adding approximately 3 feet to the depth to the water table to allow for groundwater sample collection corresponds to a proposed maximum well depth of approximately 22 feet below ground surface (bgs).

An AEI geologist using the Unified Soil Classification System will log the soil borings on-site. Up to three samples of undisturbed soil will be collected from each boring from above the water table. Soil will be continuously collected within 2" diameter acrylic liners. A six-inch section of the liners will be selected as the sample. The soil samples will be sealed with Teflon film and plastic end caps. Soil samples obtained during drilling will be screened in the field with a Photo Ionization Detector (PID).

Groundwater samples will be obtained from the four borings. Exposing a screened interval of the push rods within the water bearing deposits will facilitate collection of the groundwater samples. A drop tube will be inserted into the direct push rods and water will be pumped through the drop tube into sample containers. If groundwater samples cannot be collected through the rods, then the rods will be removed and screened PVC casing will be temporarily installed to allow for water generation. Following sample collection and the removal of sample collection equipment and/or casing, the borings will be converted to monitoring wells.

All soil and groundwater samples will be stored over water ice and transported, under chain of custody procedures to McCampbell Analytical, Inc. (DOHS Certification Number 1644) of Pacheco, California. Three soil samples, one groundwater sample from each boring, and one groundwater sample from each well will be analyzed for TPH as gasoline (EPA 5030/8015), benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE (EPA method 5030/8020).

No cuttings will be generated as a result of the drilling and all core materials will be submitted to the laboratory.

The 23-foot soil borings will be converted to groundwater monitoring wells by the following procedure.

1. A casing with an inside diameter of 2.5 inches with a disposable tip will be pushed to a depth of approximately 22 feet bgs;

2. Approximately 15 feet of Schedule 40 2-inch PVC casing and 5 feet of 0.020 factory slotted 2-inch well screen flush threaded bottom cap will be inserted into the pushed casing;
3. The pushed casing will be removed;
4. The annulus will be filled with clean medium Monterey sand to 2 feet above the screened interval;
5. The annulus will be filled with 2 feet of bentonite pellets;
6. The remaining annulus will be grouted to surface;
7. A flush locking well box will be installed and finished to match the existing asphalt or concrete pavement surface.

The 2-inch wells will be developed by surging in an attempt to clean the well screen and sand pack of any accumulated fines. Wells will be further developed by bailing while monitoring field parameters, temperature, conductivity, and pH. When ten well volumes have been bailed, when three consecutive readings of these parameters are constant, or when the well is bailed to dryness, the well will be considered developed. A sample of groundwater will then be taken.

A licensed California surveyor will survey the elevations of the top of casing of the four wells. Water levels will be measured with an electric well sounder.

Following the receipt of analytical results from the laboratory, AEI will prepare a technical report detailing the methods and results of the investigation. The report will consist of text giving the procedures used and problems encountered, figures of boring locations and well construction detail, and tables of analytical results and soil boring logs. Conclusions will be drawn concerning the depth to the water table, the hydraulic gradient and flow direction, the existence and extent of contaminant plumes, and the possible need for additional well locations or other investigative efforts.

Site Safety

Prior to commencement of field activities, a site safety meeting will be held at a designated 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

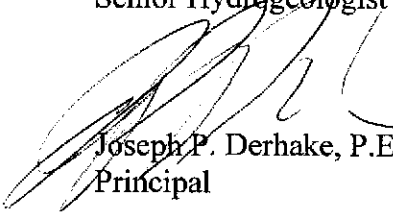
Work will be scheduled following final approval of a scope of work by the Alameda County Health Care Services Agency and finalization of a contractual agreement with the owners of the property. Drilling permits will be obtained and adequate notification will be given to the Alameda County Health Care Services Agency of the scheduled day of drilling to schedule a field inspection. Well development will occur on or around the day of drilling and the wells will be sampled shortly thereafter. Laboratory analytical results will be obtained within one week of sample collection. The final report will be prepared promptly for the client and the Alameda County Health Care Services Agency.

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.

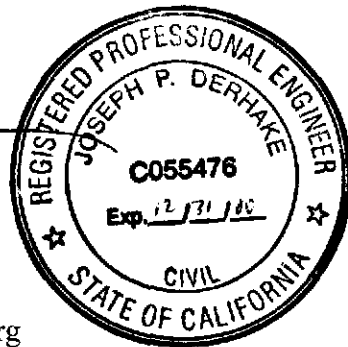
Sincerely,



Edward I. Wallick, Ph.D.
Senior Hydrogeologist



Joseph P. Derhake, P.E.
Principal

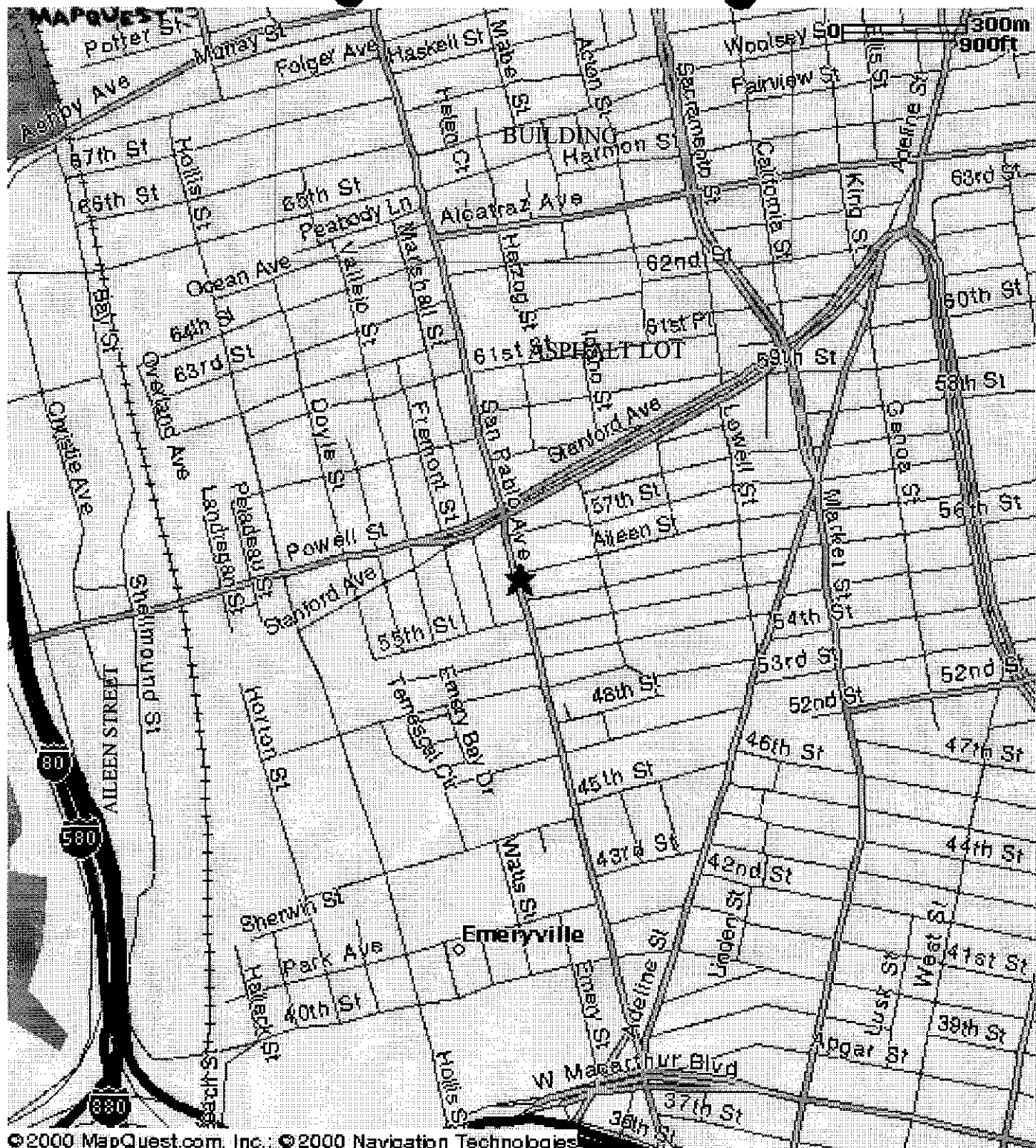


Cc: Mr. Donald Rosenberg
P.O. Box 2194
Walnut Creek, CA 94595

Figure 1 Site Location Map

Figure 2 Site Map and Borehole Locations

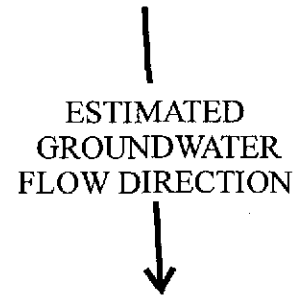
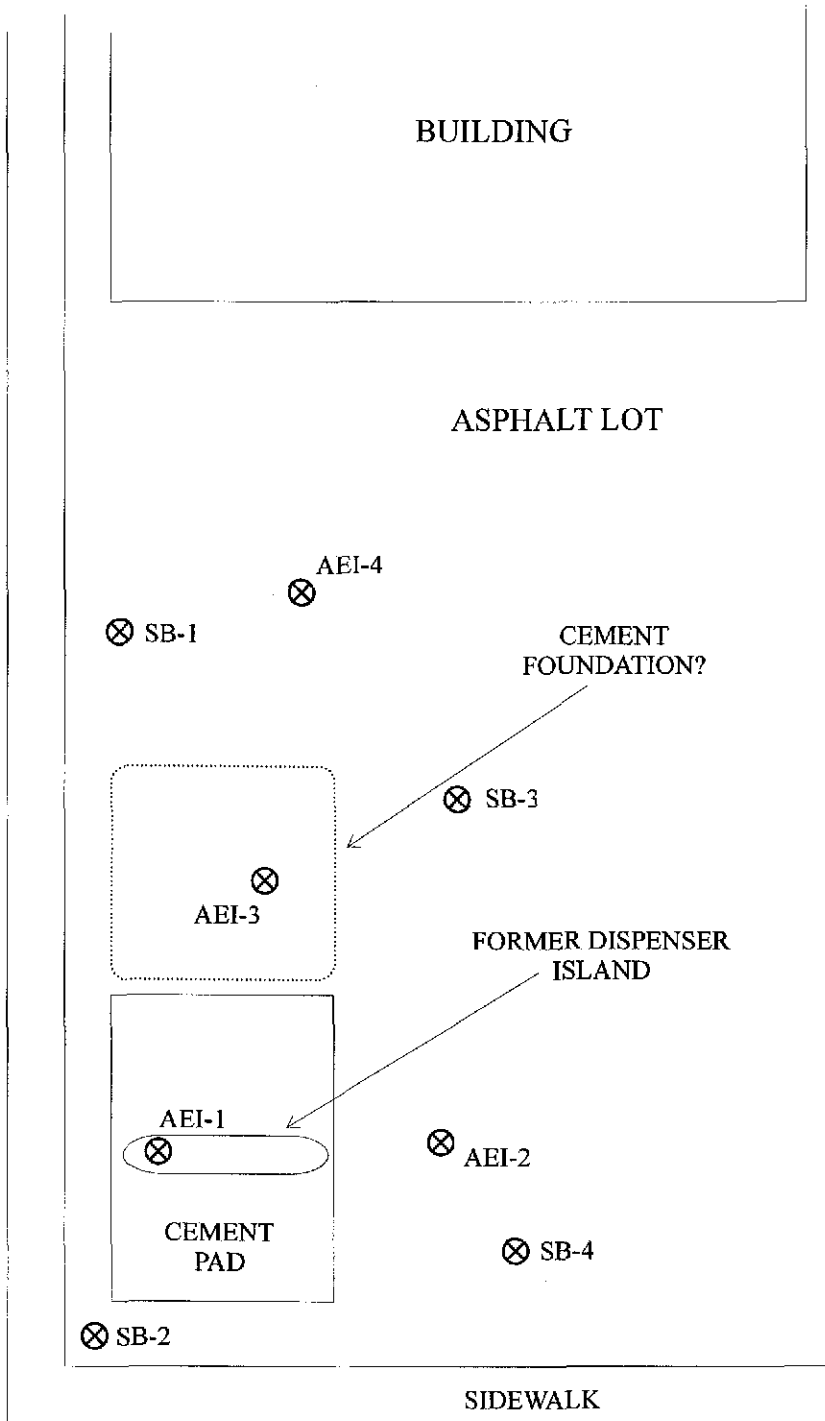
Table 1 Maximum Hydrocarbon Concentrations Detected in Soil and Groundwater



© 2000 MapQuest.com, Inc.; © 2000 Navigation Technologies



AEI CONSULTANTS 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA	
Site Location Map	
5630 SAN PABLO AVENUE OAKLAND, CALIFORNIA	FIGURE 1 PROJECT NO 3799

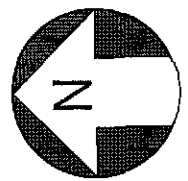


AILEEN STREET

PROPERTY BOUNDARY

SAN PABLO AVENUE

⊗ SB-X Proposed New Borings



⊗ SOIL BORINGS LOCATIONS PERFORMED BY AEI JULY 6, 2000

SCALE: 1 in = 15 ft

AEI CONSULTANTS 3210 OLD TUNNEL ROAD, SUITE B, LAFAYETTE, CA	
SITE PLAN AND BOREHOLE LOCATIONS	
5630 SAN PABLO AVENUE OAKLAND, CALIFORNIA	FIGURE 2 PROJECT NO 3799