

August 14, 2001

AUG 17 2001

**WORKPLAN**

924 Grand Avenue  
Alameda, California

*8/14/01*

Project No. 4481

Prepared For

Ms. Eva Chew  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Prepared By

**AEI Consultants**  
3210 Old Tunnel Road, Suite B  
Lafayette, CA 94549  
(925) 283-6000

**AEI**

August 14, 2001

Ms. Eva Chew  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

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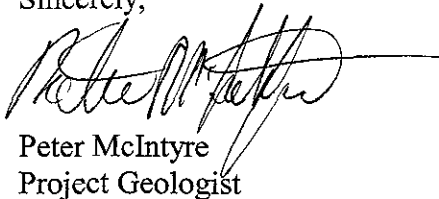
**Subject: Workplan**  
924 Grand Avenue  
Alameda, California  
AEI Project No. 4481

Dear Ms. Chew:

Enclosed is the workplan prepared by AEI for the requested soil and groundwater investigation at the above referenced property.

Please call me at (925) 283-6000 if you have any questions or need any additional information.

Sincerely,



Peter McIntyre  
Project Geologist

August 14, 2001

Mr. Eva Chew  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**Re: Workplan**  
924 Grand Avenue  
Alameda, California  
Project No. 4481

Dear Ms. Chew:

This workplan has been prepared at your request, to outline a scope of work to investigate the extent of impacted soil and groundwater associated with the former heating oil tank located at the above referenced property. Mr. Matthew Anderson, the owner of the property, has retained AEI Consultants (AEI) to provide environmental engineering and consulting services. This workplan has been prepared on behalf of Mr. Anderson.

**Site Description and Background**

The property is located in a residential area of the City of Alameda, California, on the southern corner of Grand Avenue and San Jose Avenue. Refer to Figure 1 for a site location map.

AEI was contracted to remove a 250-gallon home heating oil tank from the property in July 1988. Based on the analytical results of a soil sample collected from beneath the tank, the Alameda County Health Care Services Agency (ACHCSA) requested the removal of impacted soil. AEI then removed 20 tons of soil from the excavation. The excavation was extended vertically to the water table [11 feet below ground surface (bgs)]. The lateral extent was limited on four sides by utilities and the structure. Refer to Figure 2.

Four soil samples were collected from the sidewalls of the excavation, as was a grab sample of groundwater in the excavation. Each of the four soil samples contained total petroleum hydrocarbons (TPH) as diesel, ranging from 370 mg/kg on the west side to 2,000 mg/kg on the north side. TPH as diesel was detected in the groundwater sample at 110,000 µg/l. Levels of BTEX were low or not detected in the soil and groundwater samples. The soil was transported, under manifest to an appropriate facility, and the excavation was backfilled with clean imported fill material.

*Where the case is reported*

Based on the results of sample analyses, the ACHCSA agency has requested an investigation to assess the extent of impacted soil and groundwater beneath the property.

### Geologic Conditions

The site is located at approximately 25 feet above mean sea level. The property is flat; however, the regional topography of Alameda Island slopes to the south/southwest. Groundwater is expected to exist at 11 feet bgs and flow to the south/southwest. The nearest surface water is the lagoon, located approximately 1,000 feet to the southwest of the site.

### Scope of Work

AEI proposes to advance a total of three (3) soil borings (labeled SB-1 through SB-3). The proposed locations of the borings have been chosen to assess the extent of impacted soil and groundwater around the former tank location. The proposed boring locations are shown on Figure 2.

The borings will be advanced with a hydraulic direct-push drilling rig, to facilitate soil and groundwater sample collection. The borings will be advanced to first encountered groundwater, plus up to 2 feet to allow groundwater sample collection. The maximum anticipated depth of the borings is approximately 15 feet.

The soil boring will be continuously logged on-site by an AEI geologist using the Unified Soil Classification System. Soil will be collected within 1½" diameter acrylic liners inside the drive sampler. Soil samples will be collected at approximately 5-foot intervals. A six-inch section of the liners will be selected for analysis. The soil samples will be sealed with teflon tape and plastic end caps.

A groundwater sample will be collected from each boring. The water samples will be collected by exposing a screened interval of the direct push rods within the groundwater bearing zone. Water samples will be collected with a drop tube inserted through the hollow push rods. The water samples will be collected into 40-ml VOA vials and 1-liter amber bottles.

Following sample collection the borings will be filled with cement slurry.

All samples will be put on ice and transported under chain of custody procedures to McCampbell Analytical, Inc. of Pacheco, California. One soil sample and one groundwater sample from each boring will be analyzed. Selected samples will be analyzed for total petroleum hydrocarbons (TPH) as diesel (EPA method 3550 3510), and benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) (EPA method 5030 8020). One of the groundwater samples exhibiting the highest concentrations of hydrocarbons, if present, will be analyzed for a full range of volatile and semi-volatile organics by EPA methods 8260 and 8270, respectively

*PNAS Do silica gel clean-up*

*No need for VOC (8260)*

*Soil*

Any remaining soil samples will be placed on hold at the laboratory for later analysis, if necessary.

Minimal cuttings will be generated from the drilling. Any soil cuttings will be stored on-site in a 55-gallon drum. On-site treatment or off-site disposal of contaminated drill cuttings is not a part of this work scope. If necessary, a licensed hauler will be contracted to transport the cuttings from, the site, under appropriate manifests, to a local landfill facility.

### **Site Safety**

The area of the proposed borings will be marked as required and Underground Service Alert will be notified.

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.

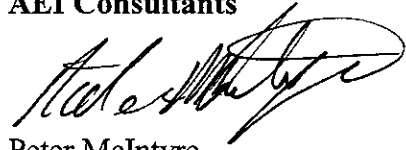
A nearby hospital will be designated in the site safety plan as the emergency medical facility of first choice. A map with a course plotted to the hospital will be on-site.

## Estimated Schedule

Work will be scheduled upon approval of this workplan. Sample analytical results will be available within 5 days of collection and will be forwarded to the client and ACHCSA for review. A final technical report will be issued within two weeks of receipt of final laboratory reports. The final report will be delivered to the client and ACHCSA.

AEI requests your approval to proceed with this project. Please contact either of the undersigned at (925) 283-6000 if you have any questions or require any additional information.

Sincerely,  
AEI Consultants



Peter McIntyre  
Project Geologist



Joseph P. Derhake, PE  
Principal



Figure 1 – Site location map

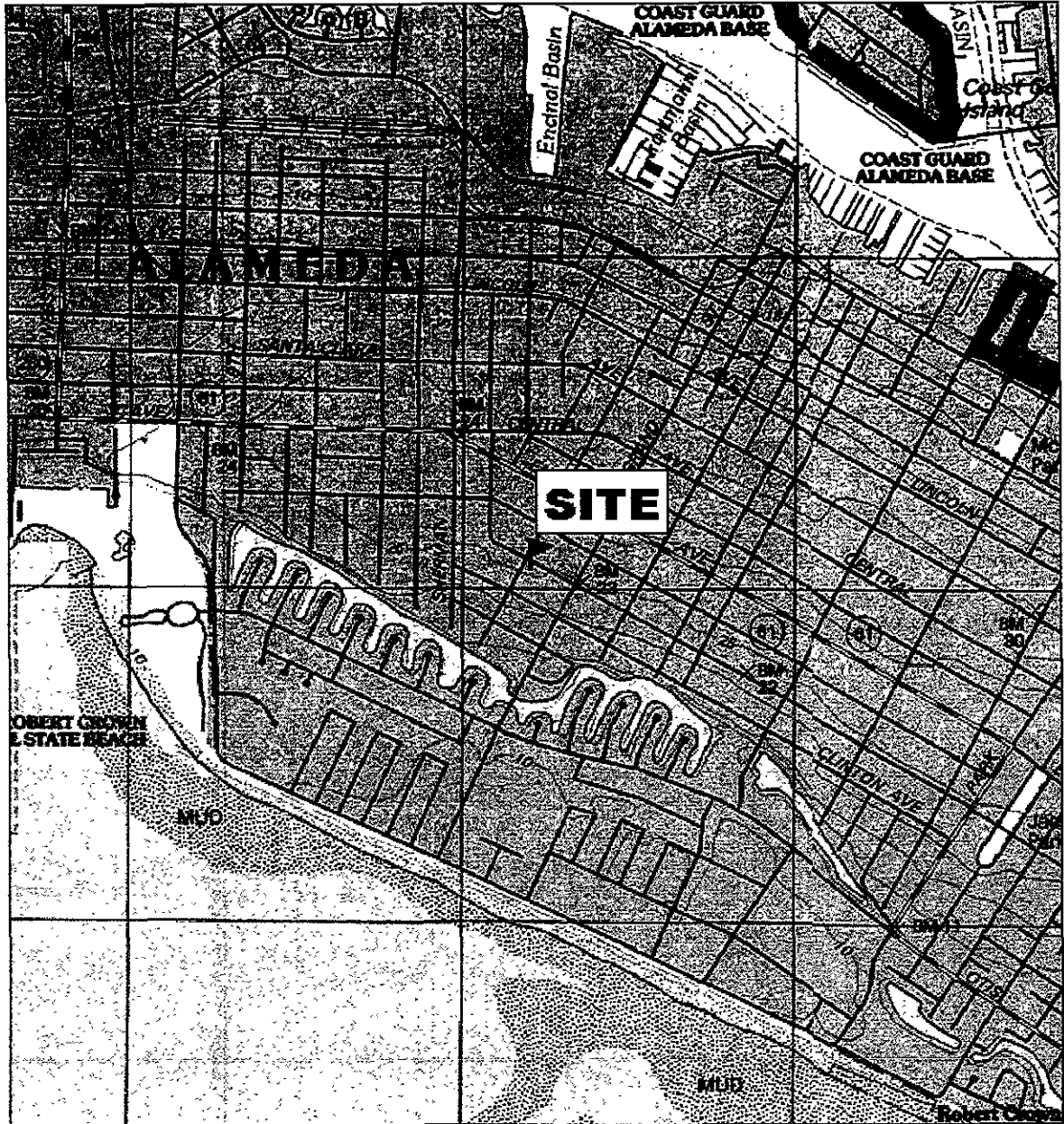
Figure 2 – Site plan

Distribution:

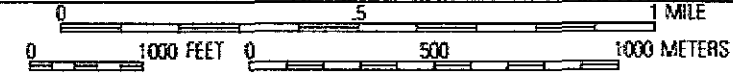
Mr. Matthew Anderson  
924 Grand Avenue  
Alameda, CA 94501

Eva Chew, ACHCSA  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94501

**FIGURES**



TN \* /MN  
15 1/2°



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<p><b>AEI CONSULTANTS</b> 3210 OLD TUNNEL RD. STE B. LAFAYETTE. CA</p>	
<p><b>SITE LOCATION MAP</b></p>	
<p>924 GRAND AVENUE ALAMEDA. CALIFORNIA</p>	<p><b>FIGURE 1</b> PROJECT NO 4481</p>



SAN JOSE AVENUE

GRAND STREET

SB-2



WATER LINE

GAS LINE

SIDEWALK

SEWER LINE

FORMER 250-GAL HOME HEATING OIL TANK

SB-3



EXTENT OF EXCAVATION

SB-1



WALKWAY

STAIRS

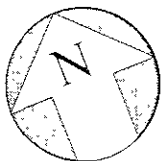
PORCH

STAIRS

WALKWAY



RESIDENCE  
924 GRAND STREET



⊗ PROPOSED BORING LOCATIONS

SCALE: 1 in = 5 ft

AEI CONSULTANTS  
3210 OLD TUNNEL ROAD, SUITE B. LAFAYETTE, CA

**SITE PLAN**

924 GRAND AVENUE  
ALAMEDA, CALIFORNIA

FIGURE 2  
PROJECT NO 4481