RO - 307

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March 7, 2005

Mr. Bob Shultz
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Work Plan – Monitoring Well Installation**
1450 Fruitvale Avenue
Oakland, California
AEI Project No. 10460
Fuel Lead Case RO0000307

Dear Mr. Schultz:

Enclosed is the workplan outlining the installation of groundwater monitoring wells at the above referenced property. Thank you for your time discussing this site and we look forward to your comment and approval on this scope of work.

Should you need additional detail on the site history or previous risk evaluation, please refer to either the *Groundwater Investigation Report*, July 5, 2002 or the *Site Summary and Risk Evaluation Report*, October 9, 2002, both of which were sent to Mr. Chan and should be in the office. If you need copies of these documents, we would be happy to forward them.

If you have any questions or need any additional information, please contact either Peter McIntyre or myself at 925/283-6000.

Sincerely,
AEI Consultants

Jeff Rosenberg
Project Engineer

AEI CONSULTANTS
Environmental & Civil Engineering

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March 3, 2005

Mr. Bob Shultz
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Work Plan – Monitoring Well Installation**
1450 Fruitvale Avenue
Oakland, California
AEI Project # 10460
ACHCSA Fuel Leak No. RO0000307

Dear Mr. Shultz:

The following work plan has been prepared on behalf of Fruitvale-Farnam Associates, LLC (FFA), owners of the property located at 1450 Fruitvale Avenue in Oakland, California (Figure 1). AEI Consultants (AEI) has been retained by FFA to provide environmental engineering and consulting services associated with a release of petroleum hydrocarbons from the former underground storage tank (UST) system at the site. This plan outlines a scope of work to install and monitor four groundwater monitoring wells at the site. These activities were previously requested by Alameda County Health Care Services Agency (ACHCSA) to further evaluate impacted groundwater at the site.

SITE DESCRIPTION AND BACKGROUND

The subject property (hereinafter referred to as the "site" or "property") is located on the eastern corner of Fruitvale Avenue and Farnam Street in a residential and commercial area of the City of Oakland. The property is approximately 17,000 square feet in size. Until December 2001, the site was developed with a three-story building, the footprint of which occupied approximately one-third of the parcel. Between December 2001 and October 2002 the subject property building was demolished. Following demolition of the previous structure, the property was redeveloped with a multi story commercial building with a footprint covering approximately 40% of the property. The remainder of the property is improved with concrete or asphalt surfacing. Landscaped areas comprise less than 5% of the property's surface area. Refer to the site plans for the current and former property layout.

Research and Exploratory Excavation

The site was reportedly developed as a gas station in 1950 by Atlantic Richfield Oil Company (currently known as ARCO) and operated until approximately 1983. Previously four underground storage tanks were located along the southern property boundary. The fuel dispenser island was located on the northeast corner of the former parking lot.

Research was performed at the City of Oakland Fire and Building Departments for records regarding the location of the tanks and underground piping. Although no formal tank removal records were available, it was determined that the former tank hold was along Farnam Street, as shown in Figure 2.

Following an inconclusive geophysical survey, AEI was retained to excavate the suspected tank hold, and confirm the presence or absence of any tanks. Three excavations were performed in May 1999, one along Farnam Street and two smaller excavations within the rollup door of the building, likely locations of an unknown waste oil tank. The locations of the excavations are shown on Figure 2. No tanks were found and soils removed from the larger excavation appeared to be consistent with imported fill material commonly used to backfill former tank holds. A total of six soil samples and one groundwater sample (labeled AEI GW 8', from the larger excavation at 8 feet bgs) were collected. The samples contained very low or non-detect hydrocarbon concentrations. Sample analytical data from the samples collected from the excavations are included on Table 5. The results of AEI GW 8 are in Table 2.

Although a previous subsurface investigation performed by Glenfos had revealed a release, it was apparent that the tanks had been removed and that the release that had occurred did not occur in the former tank hold but rather from the product piping or dispensing location.

Investigative Activities

Between July 1998 and June 2002, a total of twenty-two soil borings (labeled GP-1 through GP-9 and AEI-9 through AEI-22) have been performed and three monitoring wells (MW-1 through MW-3) installed. Soil sample analytical data collected during these projects is summarized in Table 1. Groundwater sample analytical data from temporary borings is presented in Table 2 and data collected during the eight episodes of monitoring is presented in Tables 3 and 4. Hydrocarbon distributions in the groundwater are presented on Figure 6.

On September 26, 2002, an additional three shallow soil borings (AEI-23 through AEI-25) were advanced with a hand auger in the dispenser (AEI-23) and piping (AEI-24) locations and beneath the proposed building (AEI-25) to confirm the absence of hydrocarbons in the shallow soil and to collect a soil sample for grain size analysis.

Soil sample analytical data has not revealed any significant presence of source material remaining in the vadose zone. The highest concentrations of hydrocarbon detected in the soil have been in soils within the range of high and low average water table depths.

Site Summary and Risk Evaluation

AEI completed a *Site Summary & Risk Evaluation Report*, dated October 9, 2002. Included in the report are analysis of groundwater, soil and vapor exposure pathways present at the site and the results of a conduit survey. Also included was a comparative analysis of site groundwater and soil analytical data with Regional Water Quality Control Board (RWQCB) risk based

screening levels and City of Oakland screening levels. Following submittal of this report, ACHSCA approved redevelopment of the property with a commercial building. Although a request for case closure was made at this time, the ACHCSA requested that additional groundwater investigation be conducted following redevelopment of the property. In addition the ACHCSA expressed concern that the source area of the plume did not appear to be naturally attenuating.

CONTAMINANTS OF CONCERN

The investigation efforts performed to date have identified that the material released from the site is consistent with gasoline range fuel hydrocarbons.

Exhibit 1: Identified Contaminants

Contaminant	Maximum Concentration (sample ID)		
	Surface Soil (< 3 ft bgs) in mg/kg	Subsurface Soil (<water table and >3 ft bgs) in mg/kg	Groundwater in µg/l
Benzene	<0.005 (all in depth range)	0.59 (GP-3 10')	3,800 (AEI-22)
Toluene	<0.005 (all in depth range)	0.58 (AEI-22 10')	290 (AEI-22)
Ethyl benzene	<0.005 (all in depth range)	1.1 (GP-3 10')	2,200 (MW-3)
Xylenes (total)	<0.005 (all in depth range)	1.5 (GP-3 10')	1,900 (AEI-22)
MTBE	<0.05 (all in depth range)	< LDL (all in depth range)	92 (MW-2)
TPH-g (C6-C12)	<1.0 (all in depth range)	95 (GP-3 10')	25,000 (AEI-22 & MW-3)

LDL – Laboratory Detection Limit

In addition to the COCs identified above, the presence of the following have been analyzed for and found to not be significant at the site: lead, diesel range hydrocarbons, and the fuel additives diisopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert amyl methyl ether (TAME), t-butyl alcohol (TBA) 1,2-dibromoethane (EDB), and 1,2-dichloroethane (1,2-DCA).

ENVIRONMENTAL SETTING

Geology and Hydrology

The site is located at 40 feet above mean seal level. The site is flat; however, the topography of the area slopes gently to the southwest. The soils beneath the site are generally categorized as alluvial deposits derived from Franciscan Formation bedrock of the Berkeley-Oakland hills.

According to logs of the borings completed by AEI, the near surface sediments generally consist of mixed silty, sandy, and gravely clays, which were encountered to boring termination, up to 35 feet below ground surface (bgs). A grain size distribution analysis performed on sample AEI-24 3', revealed 89% of material finer than US Standard Sieve # 200 (0.003 in.). Generally soils encountered to between 10 and 12 feet bgs were predominantly clay while sand and gravel content increased with depth. Clean sand stringers ranging from several inches to several feet

thick were encountered locally in several borings in the 10 to 15 feet bgs range. Refer to Figure 7 for a cross-section of the property.

Groundwater was not initially encountered in borings; however, evidence of saturation was observed in the 12 to 15 feet bgs range. Greenish sandy clays and clays, present generally below this depth range were observed in a majority of the borings. These color changes from brown / dark brown clays in this depth range is indicative of clays that are saturated. Along with the water level measurements in the permanent wells, the color change further supports the argument that the clays are saturated. Groundwater was present in each boring, ranging from 13 to 35 feet bgs, within several hours of drilling, reflecting the low hydraulic conductivity of the clays.

Average groundwater elevations for the three wells ranged from 25.36 feet above msl in October 2000 to 33.54 feet above msl in March 2002. Based on these measurements, groundwater beneath the site generally flows in a southeasterly direction; however during March and June 2002, northwesterly and southwesterly flow directions were measured, respectively. Generally the hydraulic gradient has been on the order of 10^{-2} ft/ft. Historical groundwater level measurements are presented in Table 3. A rose diagram of groundwater flow directions is presented on the site plans.

MONITORING WELL INSTALLATION

AEI will install four groundwater monitoring wells (MW-4 through MW-7). The locations of the wells were chosen to assess the extent and stability of the plume. A summary of the proposed wells is presented below, along with completion details and an explanation of the purpose of each. Proposed well location are shown on Figure 5.

Exhibit 1: Proposed Wells

Well ID	*Location / Purpose*	*Casing Diameter (inches)*	*Screen interval (ft bgs)*
MW-4	Down gradient of former well MW-3, near the center of the plume	2	8 – 18
MW-5	South of the plume center, assess down-gradient extent of contamination	2	8 – 18
MW-6	West of the center of the plume, assess cross-gradient extent of contamination	2	8 – 18
MW-7	North of the plume center, up-gradient of the plume's center	~~3~~ 2"	8 – 18

Final well construction details (exact screen interval, slot size, etc.) will be determined in the field.

Well Installation

The wells will be installed in borings drilled with a standard rotary drilling rig, running 8¼ diameter hollow stem augers. The boreholes will be advanced to depths of approximately 20 feet bgs. The wells will be constructed with 2" diameter well casing, with 10' of factory slotted

0.010 or 0.020 inch well screen. The screen intervals shown above are based on existing logs, but may be adjusted slightly by the onsite engineer or geologist during drilling.

Soil samples will be collected at approximately 5' intervals, or at closer intervals, during drilling with a split spoon sampler advanced ahead of the auger bit. Samples will be utilized to characterize the sediments beneath the site and for possible chemical analyses. At a minimum four soil samples will be analyzed for the following analyses:

- TPH-g, BTEX, and MTBE by EPA Method 8015Cm / 8021B

The well casings will be installed through the augers. The casing will be flush threaded PVC and fitted with a bottom sump. A annular sand pack will be installed through the augers, which will be lifted from the borehole in 1-foot lifts. A bentonite seal will be placed above the sand and the remainder of the boring will be sealed with cement grout. The drilling and well installation work will be performed under Alameda County Public Works Agency permit. City of Oakland excavation and encroachment permits will be acquired where necessary. DWR well registration forms (DWR Form 188) will be completed for each of the wells upon installation.

The screen interval of 8 feet to 18 feet bgs has been selected to cross the upper-most permeable zones only and to straddle the water table.

The wells will be developed no sooner than 3 days after setting the well seals by surging, bailing, and purging to stabilize the sand pack and remove accumulated fines from the casing and sand pack.

Each well will be surveyed relative to each other and mean sea level by a California licensed land surveyor for the Geotracker database.

Quarterly Monitoring Activities

Monitoring and sampling of the resulting network of wells will occur on a quarterly basis for a period of one year under this work plan, with the first episode to occur within approximately one week of well development.

During each monitoring event, water levels will be measured in each well. Wells will be purged of at least 3 well volumes of water prior to sample collection. During purging the following water quality measurements will be collected: temperature, pH, specific conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP).

Groundwater samples will be collected with new, unused disposable bailers into appropriate laboratory-supplied containers. During each monitoring event, the four groundwater samples will be analyzed for the following:

- TPH-g, BTEX, and MTBE by EPA Method 8015Cm / 8021B

Waste Storage
Drill cuttings and other investigation-derived waste (IDW) will be stored onsite in sealed 55-gallon drums, pending the results of sample analyses. Equipment rinse water and well purge water will be stored in 55-gallon drums. Upon receipt of necessary analytical results, the waste will be profiled for disposal and transported from the site under appropriate manifest to approved disposal or recycling facility(s).

REPORTING

Following completion of field work, AEI will prepare a report detailing the methods and findings of the installation and sampling of the wells. Following receipt of all analytical and well survey data, a technical report will be prepared. The final report will include figures, data tables, logs of borings and well construction details, and interpretation of the contaminant distributions. Quarterly monitoring reports will be submitted within approximately one month of monitoring and sample collection activities. The entire project will be overseen by and all reports will be reviewed and stamped by a State of California Registered Geologist or Professional Civil Engineer. Following completion of the report, relevant site data will be uploaded to the State of California's Geotracker database.

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, including an explanation of the hazards of the known or suspected chemicals of interest. All site personnel will be in Level D personal protection equipment, which is the anticipated maximum amount of protection needed. 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. A site safety plan conforming to Part 1910.120 (i) (2) of 29 CFR will be on site at all times during the project.

ESTIMATED SCHEDULE

The permitting process will begin promptly following the agreement on and approval of a scope of work by the ACHCSA. Laboratory analytical results will be obtained within approximately one week of sample collection. A final report will be prepared and submitted to the client and the ACHCSA within approximately 1 month of sample collection.

AEI requests your approval to proceed with this project. Please contact me at (925) 283-6000 if you have any questions or need any additional information.

Sincerely,
AEI Consultants

Jeff Rosenberg
Project Engineer

Peter McIntyre, R.G.
Project Manager

FIGURES

Figure 1 – Site Map
Figure 2 – Site Plan
Figure 3 – Boring and Well Locations
Figure 4 – Water Table Contours
Figure 5 – Groundwater Sample Analytical Data With Proposed Well Locations
Figure 6 – Cross Section A – A'

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Table 1 – Soil Sample Analytical Data
Table 2 – Groundwater Sample Analytical Data
Table 3 – Groundwater Elevation Data
Table 4 – Groundwater Monitoring Well Analytical
Table 5 – Sample Analytical Data: Exploratory Excavation Project

Distribution :

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Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
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Mr. William Phua
Fruitvale Farnham Associates, LLC.
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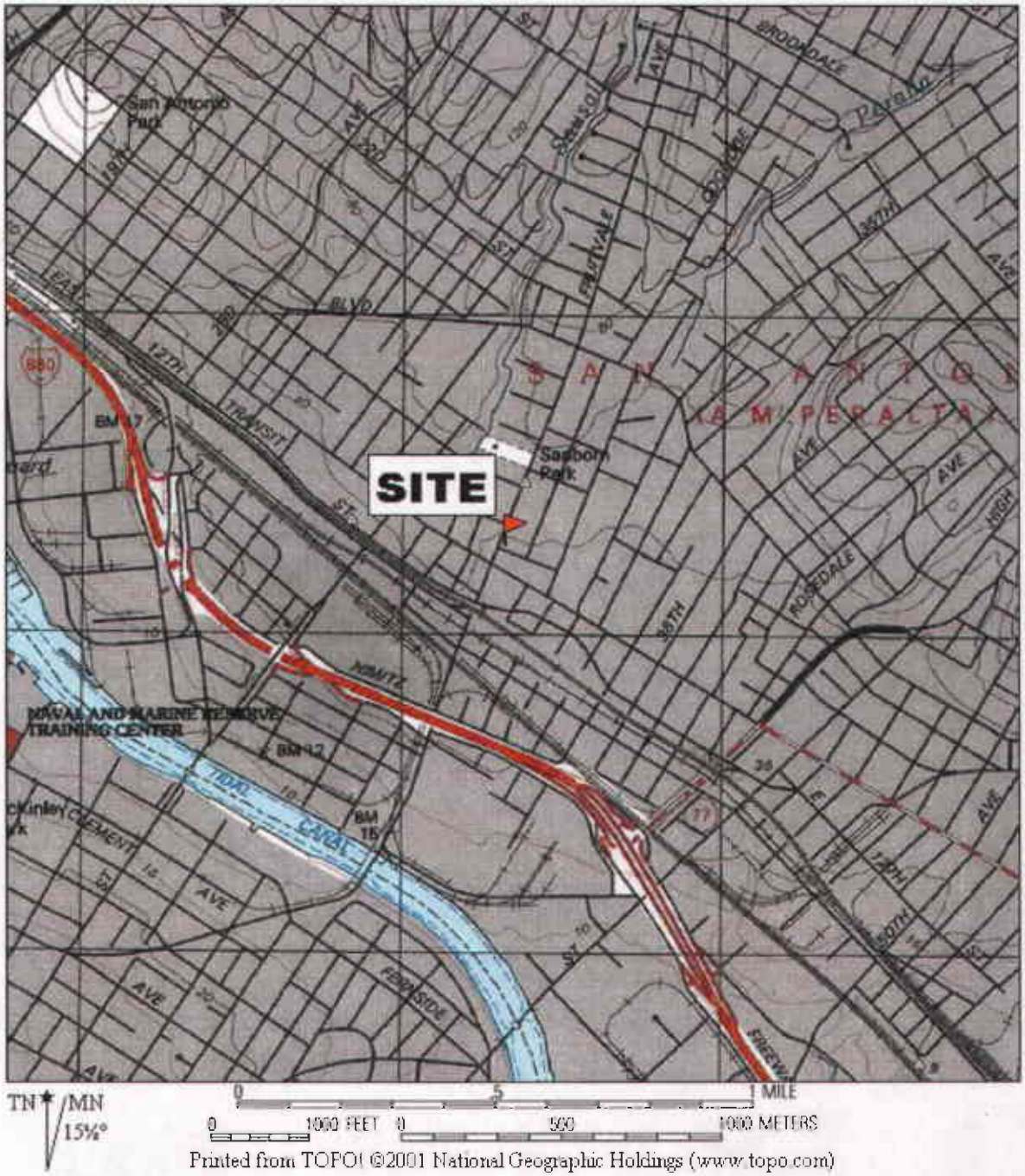
Piedmont, CA 94611



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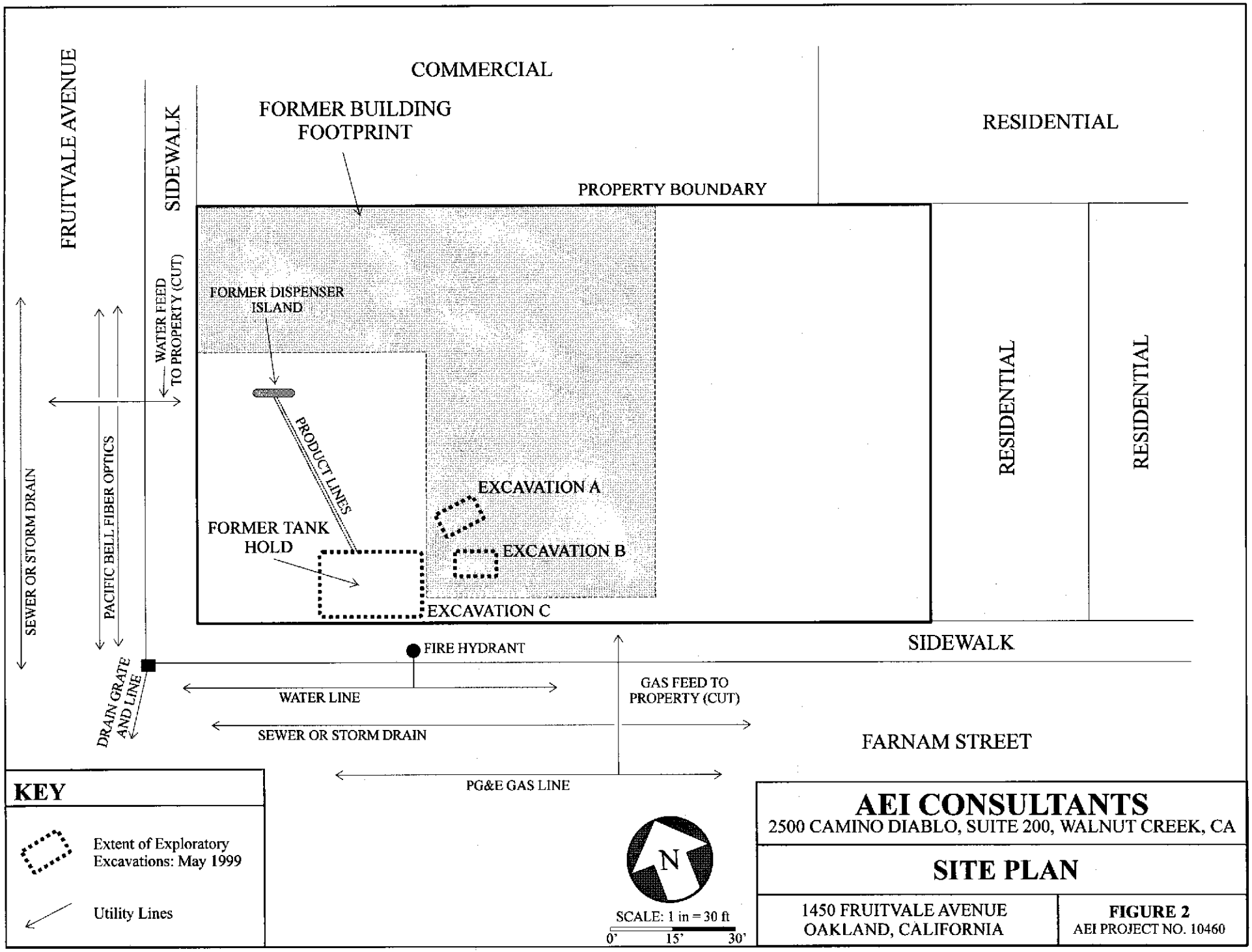
AEI CONSULTANTS 3210 OLD TUNNEL RD, STE B, LAFAYETTE, CA	
SITE LOCATION MAP	
1450 FRUITVALE AVENUE OAKLAND, CALIFORNIA	**FIGURE 2** PROJECT NO. 10460



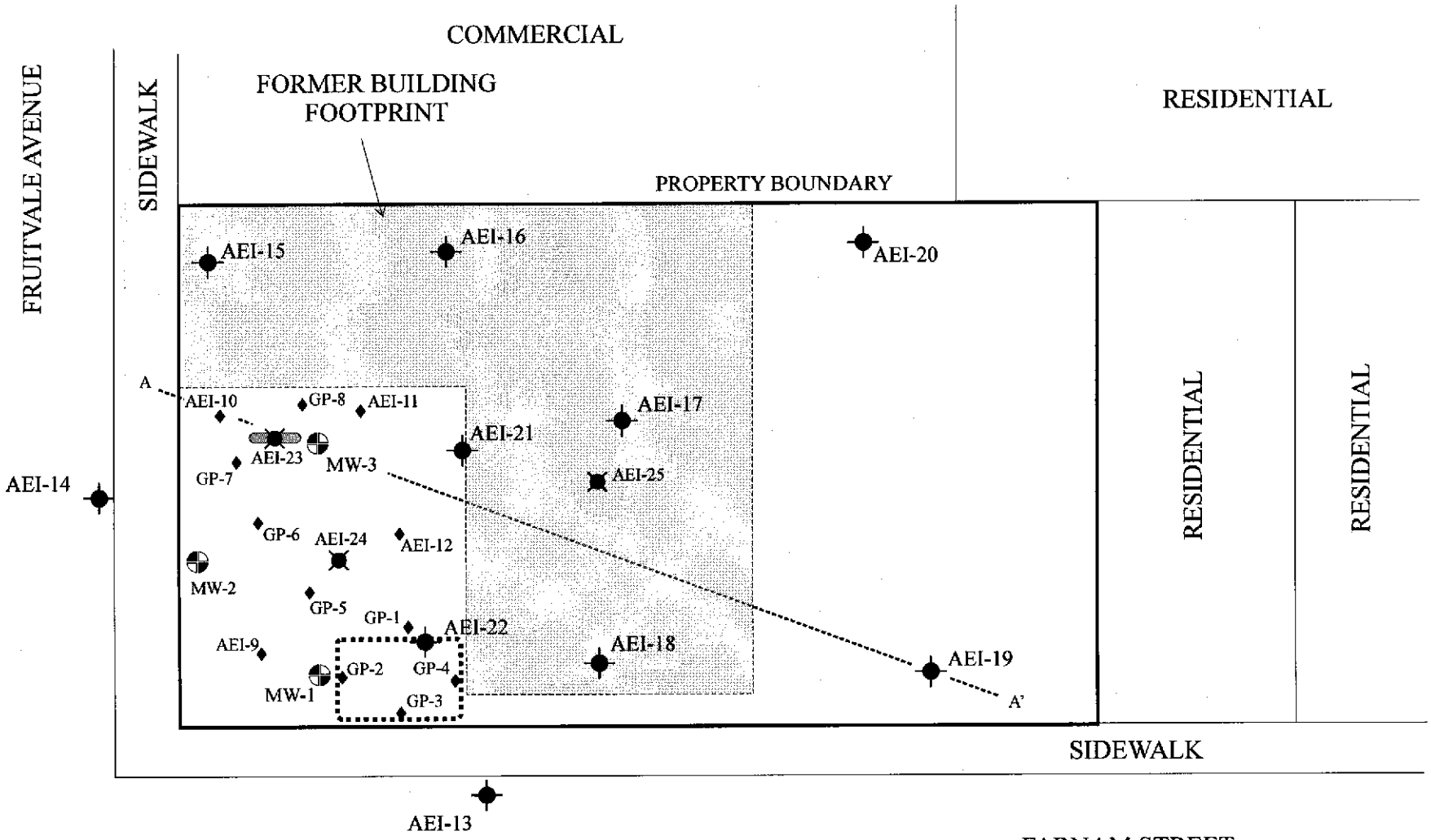
AEI CONSULTANTS

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

SITE PLAN

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

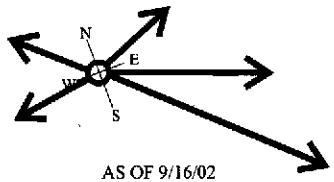
FIGURE 2
AEI PROJECT NO. 10460



KEY

- Existing 2" Monitoring Wells
- Temporary Borings: 1998-1999
- Temporary Borings: June 2002
- Hand Auger Borings: Sept. 2002

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM (½ in = 1 episode)



AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

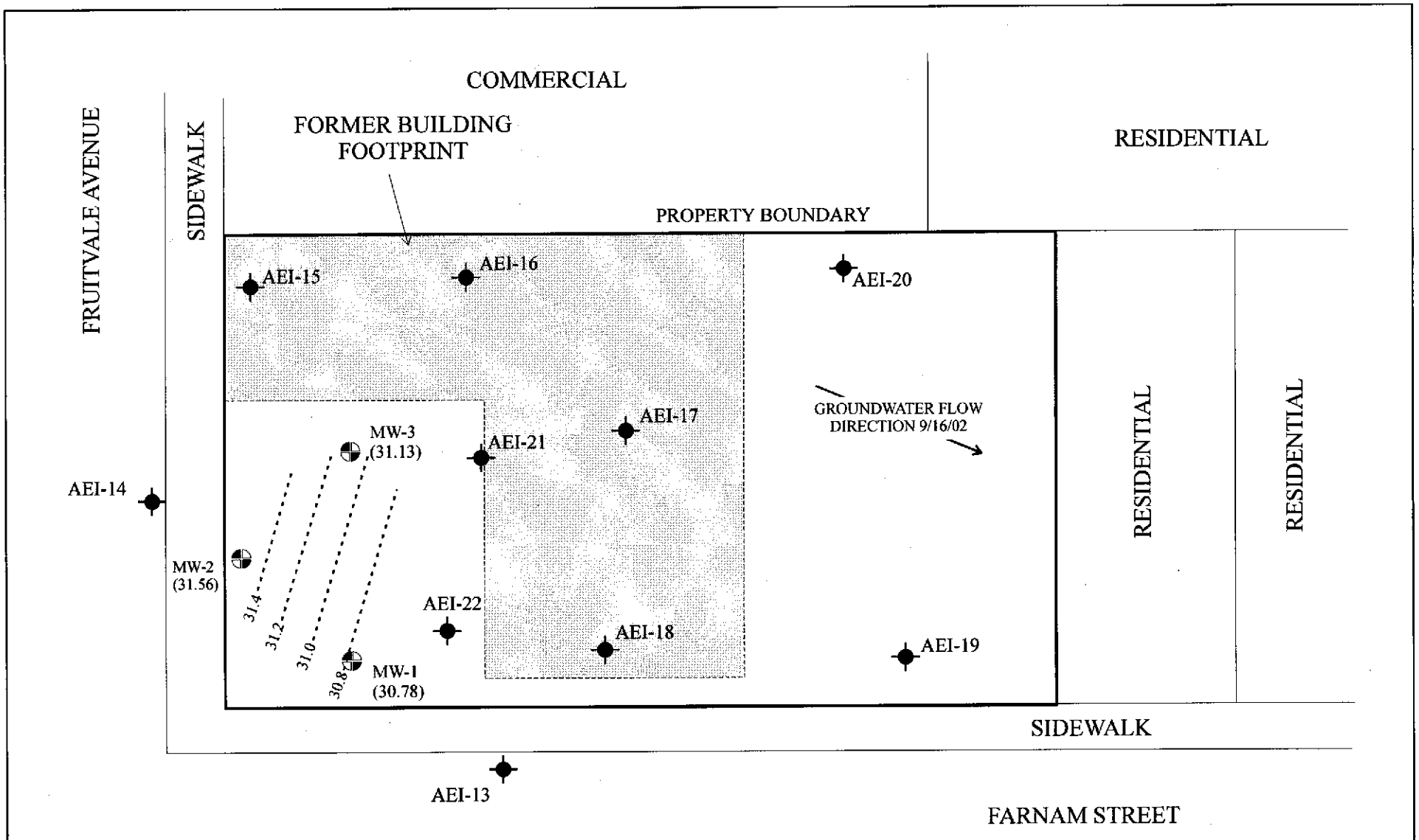
AEI CONSULTANTS

2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

PREVIOUS BORING AND WELL LOCATIONS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

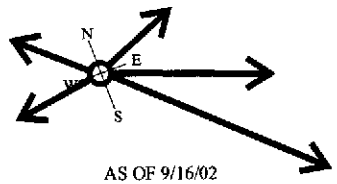
FIGURE 3
AEI PROJECT NO. 10460



KEY

- Existing 2" Monitoring Wells
- Temporary Borings: June 2002
- Contour Interval = 0.2 ft amsl
- SCALE: 1" = 30'

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM (½ in = 1 episode)



AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

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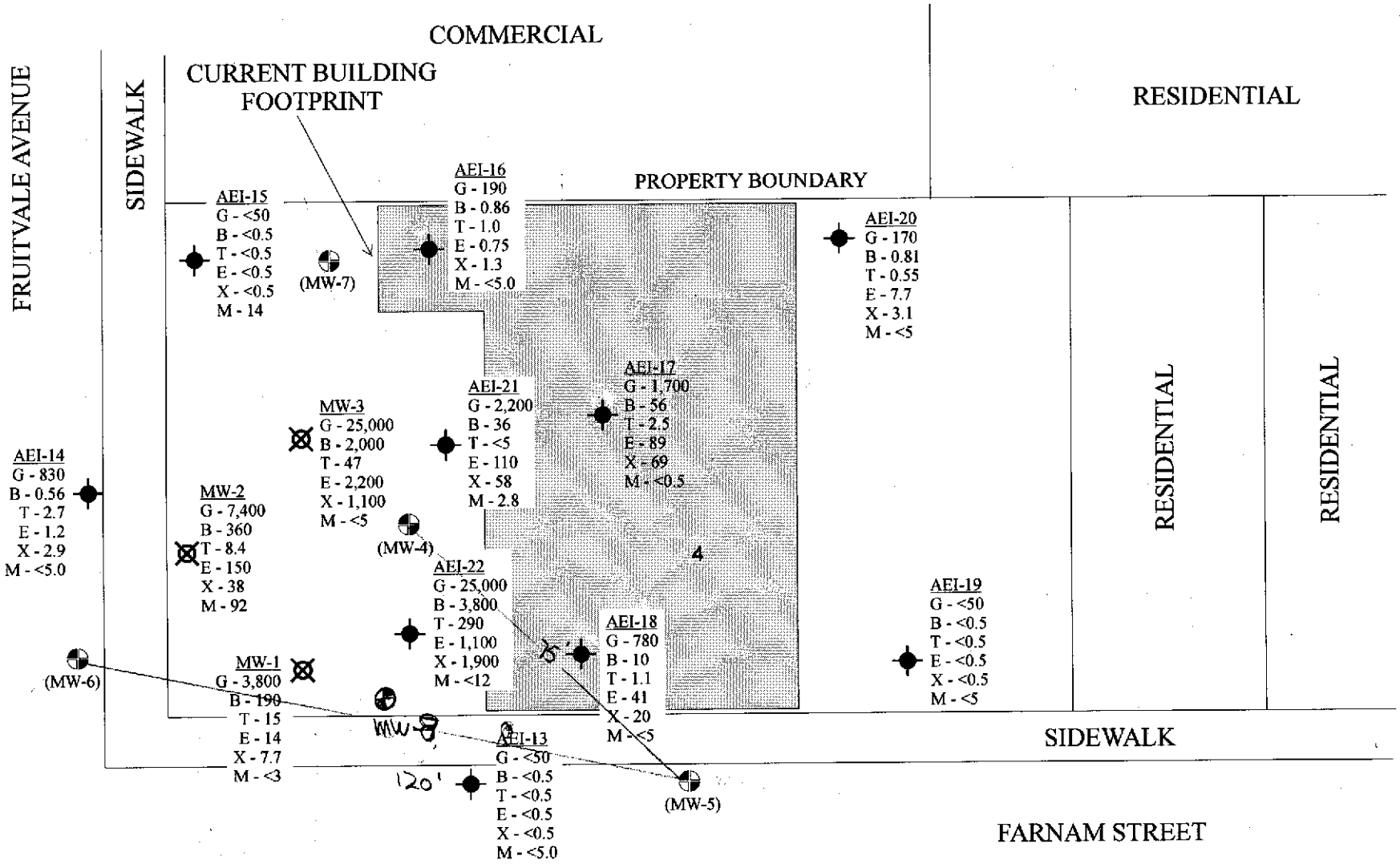
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

WATER TABLE CONTOURS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 4
AEI PROJECT NO. 10460

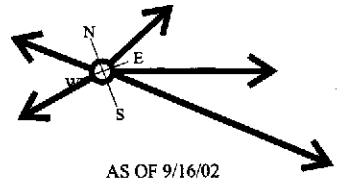


KEY

- Existing 2" Monitoring Wells
- Proposed Well Locations
- Temporary Borings: June 2002

Sample Results in µg/l. Data for wells from 9/16/02 event.

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM (½ in = 1 episode)



AS OF 9/16/02

N

SCALE: 1 in = 30 ft

0' 15' 30'

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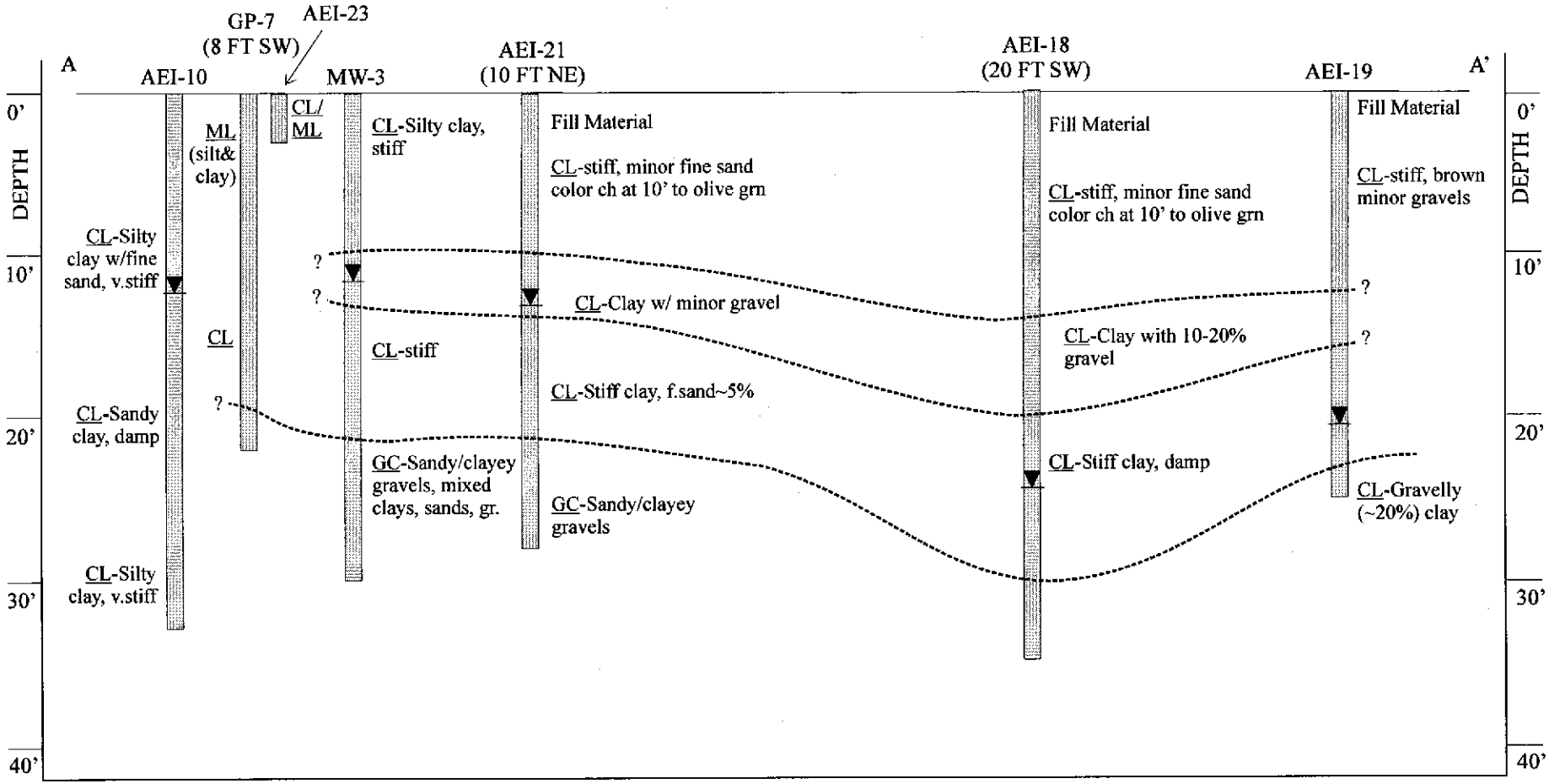
2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK, CA

GROUNDWATER ANALYTICAL DATA WITH PROPOSED WELL LOCATIONS

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 5
AEI PROJECT NO. 10460



APPROXIMATE SOIL TYPE BOUNDARY

▼ WATER LEVEL MEASURED IN WELLS OR TEMPORARY BORINGS

VERTICAL SCALE: 1in = ~ 10 ft
HORIZONTAL SCALE: 1 in = ~20 ft

Abbreviations
ML = Silts
GC = Clayey Gravel
CL = Clay, silty, sandy, or gravelly clay

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CROSS SECTION A-A'

1450 FRUITVALE AVENUE
OAKLAND, CALIFORNIA

FIGURE 6
AEI PROJECT NO 10460

Table 1 - Soil Sample Analytical Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Consul-tant	Sample Date	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg	Total Lead mg/kg
GP-1 10'	Glenfos	7/9/1998	10	-	<0.005	0.022	0.015	<0.01	-
GP-2 10'	Glenfos	7/9/1998	1.5	-	0.017	<0.005	<0.005	<0.01	-
GP-2 15'	Glenfos	7/9/1998	27	-	0.017	0.056	0.052	0.51	-
GP-2 30'	Glenfos	7/9/1998	2.5	-	<0.005	<0.005	<0.005	<0.01	-
GP-3 10'	Glenfos	7/9/1998	95	-	0.59	0.42	1.1	1.5	7.3
GP-3 15'	Glenfos	7/9/1998	2.5	-	0.055	0.018	0.055	0.26	-
GP-3 20'	Glenfos	7/9/1998	1.6	-	0.02	<0.005	0.02	0.032	-
GP-3 25'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-4 10'	Glenfos	7/9/1998	2.5	-	0.017	<0.005	0.003	0.021	4.1
GP-5 10'	Glenfos	7/9/1998	6.5	-	<0.005	0.022	0.018	0.041	-
GP-5 15'	Glenfos	7/9/1998	19	-	0.077	0.016	0.43	0.49	-
GP-5 20'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 5'	Glenfos	7/9/1998	<1	-	<0.005	<0.005	<0.005	<0.01	-
GP-6 10'	Glenfos	7/9/1998	7.7	-	0.008	0.015	0.012	0.047	6.2
GP-6 15'	Glenfos	7/9/1998	190	-	0.34	0.53	2.3	4.7	-
GP-6 20'	Glenfos	7/9/1998	28	-	0.083	0.081	0.052	0.19	-
GP-7 10'	Glenfos	7/9/1998	86	-	<0.005	0.088	0.09	0.5	-
GP-7 15'	Glenfos	7/9/1998	2.7	-	0.008	0.012	<0.005	0.031	-
GP-8 10'	Glenfos	7/9/1998	24	-	0.022	0.061	0.071	0.45	-
GP-8 15'	Glenfos	7/9/1998	5.8	-	0.021	0.014	0.022	0.06	-
GP-8 20'	Glenfos	8/23/1999	<1	-	<0.005	<0.005	<0.005	<0.01	-
AEI-9 10'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-9 20'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-10 10'	AEI	8/23/1999	77	<0.05	<0.005	<0.005	0.078	<0.005	-
AEI-10 15'	AEI	8/23/1999	69	0.071	0.1	0.21	0.23	<0.005	-
AEI-11 10'	AEI	8/23/1999	<1	<0.05	<0.005	<0.005	<0.005	<0.005	-
AEI-11 15'	AEI	8/23/1999	210	<0.40	<0.020	1.1	1.2	2.4	-
AEI-12 10'	AEI	8/23/1999	24	<0.05	<0.005	0.12	<0.005	<0.005	-
AEI-12 15'	AEI	8/23/1999	120	<0.40	<0.020	<0.020	1.6	1.6	-
MW-1 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-1 11.5'	AEI	9/25-26/00	15.0	<.05	<.005	0.31	<.005	0.011	-
MW-2 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-2 11'	AEI	9/25-26/00	73.0	<.05	<.005	0.044	0.0080	0.040	-
MW-3 6.5'	AEI	9/25-26/00	<1.0	<.05	<.005	<.005	<.005	<.005	-
MW-3 16'	AEI	9/25-26/00	360.0	<1.0	0.42	2.1	6.5	11.0	-
MDL			1.0	0.05	0.005	0.005	0.005	0.005	

MDL = Method Detection Limit

mg/kg = milligrams per kilogram (ppm)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

Table 1 - Soil Sample Analytical Data: Continued
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Date	TPH-g mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg
AEI-13 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-14 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-15 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-16 19'	610-12/02	41	<0.2	<0.02	<0.02	0.038	0.079
AEI-17 10'	610-12/02	<1	<0.5	<0.005	<0.005	<0.005	<0.005
AEI-17 20'	610-12/02	290	<0.05	0.84	1.3	1.8	2.8
AEI-18 4'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-18 14'	610-12/02	290	<0.02*	<0.2	0.91	2.3	2.9
AEI-19 15'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 10'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-20 20'	610-12/02	42	<0.5	<0.05	0.20	0.12	0.15
AEI-21 5'	610-12/02	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-21 13'	610-12/02	12	<0.05	<0.005	0.090	0.028	<0.005
AEI-22 10'	610-12/02	74	<0.1	0.0086	0.58	0.11	0.26
AEI-22 20'	610-12/02	5	<0.05	0.30	0.016	0.26	0.42
AEI-23 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-24 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
AEI-25 2.5'	9/27/2002	<1	<0.05	<0.005	<0.005	<0.005	<0.005
MDL		1.0	0.05	0.005	0.005	0.005	0.005

MDL = Method Detection Limit

mg/kg = milligrams per kilogram (ppm)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

* MTBE by EPA method 8260, all others by 602/8020

Table 2 - Groundwater Sample Analytical Data: Temporary Borings
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Consultant	Date	TPH-g µg/L	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L
GP 1	Glenfos	7/9/1998	170	-	0.53	<0.5	1.2	2.0
GP 4	Glenfos	7/9/1998	210	-	<0.5	<0.5	0.58	<1
GP 5	Glenfos	7/9/1998	17,000	-	42	24	820	110
GP 8	Glenfos	7/9/1998	20,000	<10	1,000	19	420	290
AEI GW 8'	AEI	5/27/1999	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-9W	AEI	8/23/1999	690	3.8	72	0.79	29	24
AEI-13 W	AEI	610-12/02	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-14 W	AEI	610-12/02	830	<5.0	0.56	2.7	1.2	2.9
AEI-15 W	AEI	610-12/02	<50	14*	<0.5	<0.5	<0.5	<0.5
AEI-16 W	AEI	610-12/02	190	<5.0	0.86	1.0	0.75	1.3
AEI-17 W	AEI	610-12/02	1,700	<0.5*	56	2.5	89	69
AEI-18 W	AEI	610-12/02	780	<5.0	10	1.1	41	20
AEI-19 W	AEI	610-12/02	<50	<5.0	<0.5	<0.5	<0.5	<0.5
AEI-20 W	AEI	610-12/02	170	<5.0	0.81	0.55	7.7	3.1
AEI-21 W	AEI	610-12/02	2,200	2.8*	36	<5.0	110	58
AEI-22 W	AEI	610-12/02	25000	<12*	3800	290	1100	1900

MDL = Method Detection Limit

ND = Not detected above the Method Detection Limit (unless otherwise noted)

µg/L = micrograms per liter (ppb)

- Sample not analyzed for this chemical

TPH-g = Total petroleum hydrocarbons as gasoline

* MTBE by EPA method 8260, all others by 602/8020

Table 3 - Groundwater Elevation Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Well ID (Screen - ft bgs)	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-1 (15-30)	10/16/00	42.13	17.72	24.41
	1/19/01	42.13	9.15	32.98
	4/26/01	42.13	9.40	32.73
	8/3/01	42.13	12.38	29.75
	11/5/01	42.13	16.22	25.91
	3/29/02	42.13	7.96	34.17
	6/11/02	42.13	12.18	29.95
	9/16/02	**42.13**	**11.35**	**30.78**
MW-2 (15-30)	10/16/00	42.08	14.98	27.10
	1/19/01	42.08	9.00	33.08
	4/26/01	42.08	8.34	33.74
	8/3/01	42.08	11.70	30.38
	11/5/01	42.08	15.08	27.00
	3/29/02	42.08	8.96	33.12
	6/11/02	42.08	12.49	29.59
	9/16/02	**42.08**	**10.52**	**31.56**
MW-3 (15-30)	10/16/00	42.55	17.98	24.57
	1/19/01	42.55	10.90	31.65
	4/26/01	42.55	9.21	33.34
	8/3/01	42.55	12.67	29.88
	11/5/01	42.55	15.90	26.65
	3/29/02	42.55	9.20	33.35
	6/11/02	42.55	11.83	30.72
	9/16/02	**42.55**	**11.42**	**31.13**

Episode #	Date	Average Water Table (ft msl)	Change from Previous Episode	Flow direction (gradient)
1	10/16/00	25.36	-	E/SE (0.116)
2	1/19/01	32.57	+7.21	E/NE (0.041)
3	4/26/01	33.27	+0.70	SE (0.034)
4	8/3/01	30.00	-3.27	ESE (0.024)
5	11/5/01	26.52	-3.48	SE (0.033)
6	3/29/02	33.55	+7.03	NW (0.032)
7	6/11/02	30.09	-3.46	SW (0.040)
8	**9/16/02**	**31.16**	**+1.07**	**SE (0.028)**

Notes:
All well elevations are measured from the top of the casings
ft msl = feet above mean sea level

Table 4 - Groundwater Monitoring Well Analytical Data
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Well/Sample ID	Date Collected	Consultant/ Lab	TPHg µg/L EPA 8015	MTBE µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L
				EPA method 8020				
MW-1	10/16/00	AEI/MAI	4,500	<20	560	14	53	62
	01/19/01	AEI/MAI	13,000	<100	790	46	1,100	210
	04/26/01	AEI/MAI	7,500	<30	470	23	720	120
	08/03/01	AEI/MAI	4,500	<10	440	11	55	6.6
	11/05/01	AEI/MAI	1,700	<10	100	6.0	4.6	2.1
	03/29/02	AEI/MAI	9,500	ND<100	880	32	400	59
	06/11/02	AEI/MAI	3,400	<50	620	9.7	75	11
	09/16/02	**AEI/MAI**	**3,800**	**<10**	**190**	**15.0**	**14**	**7.7**
MW-2	10/16/00	AEI/MAI	4,600	<300	380	3.8	95	33
	01/19/01	AEI/MAI	4,200	<10	450	4.7	120	50
	04/26/01	AEI/MAI	5,600	<20	810	12	210	65
	08/03/01	AEI/MAI	2,900	<20	360	3	97	46
	11/05/01	AEI/MAI	2,400	<85	280	3.2	76	25
	03/29/02	AEI/MAI	7,100	ND<100	930	11	220	39
	06/11/02	AEI/MAI	4,400	<150	680	8.1	160	38
	09/16/02	**AEI/MAI**	**7,400**	**<250**	**360**	**8.4**	**150**	**38**
MW-3	10/16/00	AEI/MAI	12,000	<10	570	32	680	1,200
	01/19/01	AEI/MAI	27,000	<200	3,400	110	2,200	2,700
	04/26/01	AEI/MAI	33,000	<200	3,300	190	2,800	3,400
	08/03/01	AEI/MAI	23,000	<50	2,300	52	1,800	1,400
	11/05/01	AEI/MAI	30,000	<200	1,900	58	2,000	1,600
	03/29/02	AEI/MAI	29,000	ND<100	2,100	57	2,500	1,700
	06/11/02	AEI/MAI	22,000	<50	2,100	44	2,300	1,600
	09/16/02	**AEI/MAI**	**25,000**	**<220**	**2,000**	**47**	**2,200**	**1,100**
MRL			50.0	5.0	0.5	0.5	0.5	0.5

Fuel Oxygenates

Well/Sample ID	Date Collected	DIPE µg/L	ETBE µg/L	MTBE µg/L	TAME µg/L	TBA µg/L	EDB µg/L	1,2-DCA µg/L
					EPA method 8260			
MW-1	**06/11/02**	-	-	2.4	-	-	-	-
	09/16/02	**0.56**	**<0.5**	**<3.0**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-2	**06/11/02**	-	-	23	-	-	-	-
	09/16/02	**7.30**	**<1.2**	**92**	**<1.2**	**<1.2**	**<1.2**	**<1.2**
MW-3	**06/11/02**	-	-	<2.5	-	-	-	-
	09/16/02	**<5.0**	**<5.0**	**<5.0**	**<5.0**	**<50**	**<5.0**	**<5.0**
MRL		0.5	0.5	0.5	0.5	5.0	0.5	0.5

MRL = Method Reporting Limit, unless otherwise shown
µg/L = micrograms per liter
AEI = AEI Consultants
MAI = McCampbell Analytical, Inc.
TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether

Table 5 - Sample Analtyical Data: Exploratory Excavation Project
1450 Fruitvale Avenue, Oakland, CA - AEI Project # 10460

Sample ID	Location	TPH-g mg/kg	TPH-d mg/kg	TOG mg/kg	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Xylenes mg/kg	Total Lead mg/kg
AEI EBA 6'	Exc. A - Bottom	<1.0	<1.0	<50.0	<0.05	<0.005	<0.005	<0.005	<0.005	**6.9**
AEI EBB 6'	Exc. B - Bottom	<1.0	<1.0	<50.0	<0.05	<0.005	<0.005	<0.005	<0.005	**9.1**
AEI EBW 8'	Exc. C - West	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**9.4**
AEI EBE 8'	Exc. C - East	**11**	<1.0	-	<0.05	<0.005	**0.059**	**0.028**	**0.042**	**32**
AEI EBN 8'	Exc. C - North	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**8.7**
AEI EBS 8'	Exc. C - South	<1.0	<1.0	-	<0.05	<0.005	<0.005	<0.005	<0.005	**80**