ALL ENVIRONMENTAL, INC.
Environmental Engineering & Construction

August 12, 1996
Project No. 1434

Ms. Madhulla Logan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: 4045 Broadway, Oakland, California

Dear Ms. Logan:

This letter is a proposed workplan for your review and approval for the soil boring and groundwater monitoring well installation to be performed at the above referenced site. All Environmental, Inc. (AEI) is providing environmental engineering consulting and construction services to Ms. C.J. Gong of Gong Associates, and is submitting this letter on her behalf.

Site Description and Background

The subject property currently supports the operation of Acc-U-Tune and Brake, an automotive repair facility.

On December 21, 1995, All Environmental, Inc. (AEI) removed one 550 gallon waste oil underground storage tank from behind the property building. Soil samples collected from beneath the tank indicated up to 470 ppm total oil and grease (TOG), 6.0 ppm total petroleum hydrocarbons (TPH) as diesel, 0.012 ppm xylenes, and minor concentrations of lead, nickel, zinc and chromium. Analysis for TPH as gasoline, benzene, toluene, ethylbenzene, poly nuclear aromatic hydrocarbons and volatile halocarbons were not detected within the soil samples above the reporting limit. The stockpiled soil generated from the tank removal was transported and disposed of off-site on August 2, 1996. Clean soil was imported and used to backfill the excavation.

On February 1, 1996 a geophysical survey was performed at the property to investigate the potential for underground storage tanks (USTs) beneath a large asphalt patch area located in the northeastern portion of the property. The geophysical survey did not reveal any magnetic anomalies consistent with the presence of USTs, however vent lines were traced from vent pipes located on the northwestern corner of the building. The vent lines were found to truncate in the center of the lot at the edge of the asphalt patch, suggesting that USTs probably previously existed in the area.

AEI performed a subsurface investigation at the property on May 31, 1996. The investigation included the advancement of three soil borings using a Geoprobe drilling rig. Soil samples collected during the investigation indicated the presence of up to 150 ppm TPH as gasoline, 86 ppm TPH as diesel, 0.16 ppm benzene, 0.30 ppm toluene, 0.18 ppm ethylbenzene, 0.67 ppm xylenes and 0.52 MTBE. Grab groundwater samples collected from the borings indicated up to 1,200 ppb of TPH as gasoline, 1,800 ppb TPH as diesel, 1.4 ppb toluene, 3.8 ppb ethylbenzene and 3.7 ppb xylenes present. Benzene and MTBE were not present within the groundwater sample above the detection limits.

Due to the presence of elevated levels of petroleum hydrocarbon contamination present within groundwater, ACHCSA requested the installation and subsequent monitoring of groundwater wells at the site. The following workplan describes the proposed groundwater monitoring well installation.

Scope of Work

AEI proposes to install three groundwater monitoring wells at the site in order to obtain information on petroleum hydrocarbon contamination. Refer to the attached site drawing for the proposed groundwater monitoring well locations.

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. Drilling will proceed to first encountered groundwater plus 12 feet, most likely corresponding to a depth of approximately 25 feet bgs. In the unlikely event that groundwater is not encountered in the first 50 feet of strata, the borings will be backfilled with neat portland cement.

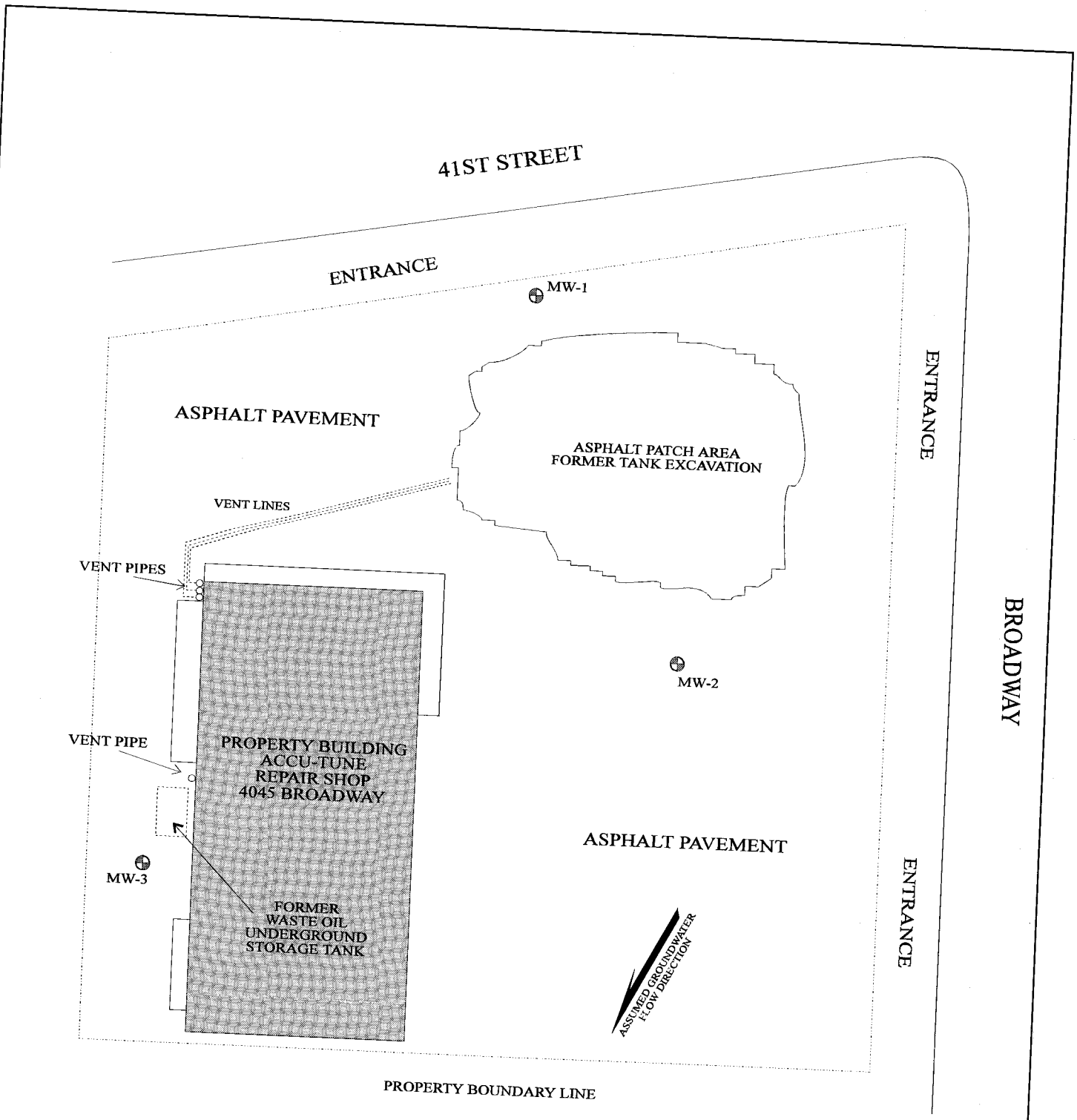
The soil borings will be continuously logged on-site by a professional geologist using the Unified Soil Classification System. Undisturbed soil samples will be collected at 5 foot intervals, starting at 5 feet bgs, with a hammer-driven California Modified split spoon sampler. The sampler will be advanced ahead of the auger tip by successive hammer blows. The samples will be collected for visual classification and chemical analysis in two-inch diameter stainless steel tubes. One soil sample from each boring will be analyzed at a state certified laboratory. 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 portable organic vapor meter.

All soil samples will be secured using aluminum foil, teflon caps and sealed with duct tape. All samples will be put on ice and transported, under chain of custody procedures to McCampbell Analytical, Inc. of Pacheco, California. Soil samples will be analyzed for TPH as gasoline (EPA 5030/8015), TPH as diesel (EPA method 3550/8015), benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE (EPA method 5030/8020).

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

Cuttings generated during drilling will be stored on-site in 55 gallon drums. On-site treatment or off-site disposal of contaminated drill cuttings is not a part of this work scope. It is likely that a licensed hauler will be contracted to transport the soils as non-hazardous waste, under appropriate manifests, to a local landfill facility.

The soil borings, as described above, will be converted to 2" monitoring wells. The wells will be constructed of 2" flush threaded Schedule 40 PVC casing, with up to 15 feet of .01" or .02" factory-slotted well screen. The top of each well screen will extend up to 3 feet above the encountered groundwater level to account for seasonal fluctuations. The well casings 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 pellets 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.



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ALL ENVIRONMENTAL, INC.
3364 MT. DIABLO BOULEVARD, LAFAYETTE

SCALE: 1 IN = 20 FT	APPROVED BY:	DRAWN BY: C. SPARKS
DATE: 12 AUGUST 96		REVISED: J.S. ANDERSON

PROPOSED MONITORING WELL LOCATIONS

4045 BROADWAY OAKLAND, CALIFORNIA	DRAWING NUMBER: