



Environmental
Science &
Engineering, Inc.

August 20, 1991

Project No. 6-91-5165

Mr. Paul Smith
Alameda County
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

SUBJECT: Workplan for Further Site Investigation at Broadway
Volkswagen, 2740 Broadway Avenue, Oakland, California.

Dear Mr. Smith,

This workplan describes further site investigation and quarterly monitoring activities to be conducted at the Broadway Volkswagen Facility, 2740 Broadway Avenue, Oakland, California.

Environmental Science & Engineering, Inc. (ESE) completed a preliminary site assessment at the facility involving the installation and sampling of one monitoring well, augering and sampling of five soil borings, and first quarter monitoring of all pre-existing wells on site. The results of this fieldwork were presented by ESE in a report to Alameda County dated July 10, 1991.

In summary, subsurface sampling beneath the former tanks C & D location (Figure 1 -Site Plan) has yielded detectable concentrations of petroleum hydrocarbons as gasoline; motor oil; and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) in soil and ground water. Ground water samples also contained detectable concentrations of trichloroethylene (TCE). The local ground water gradient is estimated to be towards the south or southeast.

ESE proposes to install two ground water monitoring wells upgradient of the site and the area where tanks C & D have been located in order to assess the possibility of an offsite source. ESE will obtain all required permits from the City of Oakland Department of Public Works and post a bond, if required, for the installation of these offsite wells.

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Mr. Smith
August 20, 1991
Page 2

Monitoring Well Installation and Sampling

The ground water monitoring wells will be constructed to meet Alameda County and Regional Water Quality Control Board (RWQCB) specifications. A Mobile B-61 drill rig will auger borings of 8.75 inch outer diameter (OD) to a depth of 15 feet or the top of the ground water table. Soil samples will be collected at five-foot depth intervals, beginning at a depth of five feet using a split-spoon sampler lined with two-inch OD brass rings. Each soil sample will be screened for hydrocarbons with an organic vapor meter (OVM) and logged in accordance with the Unified Soil Classification System (USCS) by an ESE geologist. Brass rings containing the soil samples will be capped with teflon-lined caps, sealed with duct tape and labeled. The samples will then be placed in a cooler for cold transport to the laboratory under chain of custody.

The boreholes will be reamed to a 10.5-inch OD and further drilled to an approximate depth of 30 feet, or 15 feet below the ground water table. The wells will be 4-inch diameter, schedule 40 PVC casing with the slotted portion extending from two feet above the ground water table to approximately 15 feet into the ground water. The slot, or screen, size will be 0.02 inch and the casing will be threaded. Anticipated sand size is #2-12 and sand will be installed in the annulus of the wells from total well depth to 2 feet above the slotted portion. A two-foot bentonite seal will be installed above the sand in each well followed by a slurry of grout to the surface. Water-tight locking well caps will be fitted on each well and a traffic-rated well box will be installed flush-mounted at the surface.

Each well will be developed by surging with a large bailer or surge block and purging a minimum of three well volumes of water. The development may take place prior to placement of the seal in order to help settle the sand pack. Development will be considered complete and ground water sampling will be conducted when purgewater has stabilized in temperature, pH, and conductivity. Sampling will be performed with a PVC bailer and all ground water samples will be placed in appropriate pre-cleaned containers, labeled, and immediately placed in a cooler for cold transport to the laboratory under chain of custody.

Chemical analyses for both soil and ground water will include Total Volatile Hydrocarbons as gasoline (TVH-g), Total Extractable Hydrocarbons as diesel and oil (TEH-diesel and oil), BTEX, and Volatile Halocarbons including TCE. One soil sample and one water sample will be submitted for metals analyses in order to chemically profile the material for disposal. After well development and sampling, ground water levels will be allowed to stabilize over a 48-hour period. Ground water and product (if appropriate) level measurements will then be taken with an electronic interface probe.

Mr. Smith
August 20, 1991
Page 3

Second Quarter Monitoring

All existing monitoring wells on site, including MW# 1, MW# 3, and MW# 4, will be purged of at least three well volumes and, upon recovery, sampled using a disposable PVC bailer. Wells containing free product will not be sampled. Samples will be analyzed for TVH-g, TEH-diesel and oil, BTEX and volatile halocarbons. Ground water level measurements in each well will be taken using an interface probe.

Monitoring Well Destruction

One monitoring well located at the tank B area on Broadway Avenue and identified as MW# 2 was observed to be improperly abandoned. ESE will properly permit the abandonment of this well and destroy MW# 2 by drilling out the casing and grouting according to California well destruction standards.

Disposal of Soil and Purgewater

All soil and purgewater collected during drilling and sampling activities will be placed in DOT drums and stored on site until chemical analyses are available. ESE will then arrange for the removal of this material and provide supporting documentation of disposal.

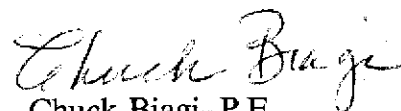
ESE will prepare a Second Quarter report for Alameda County on all of the abovementioned activities during September, 1991. Should you have any questions or comments concerning this workplan please feel free to contact me at (415) 685-4053.

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.



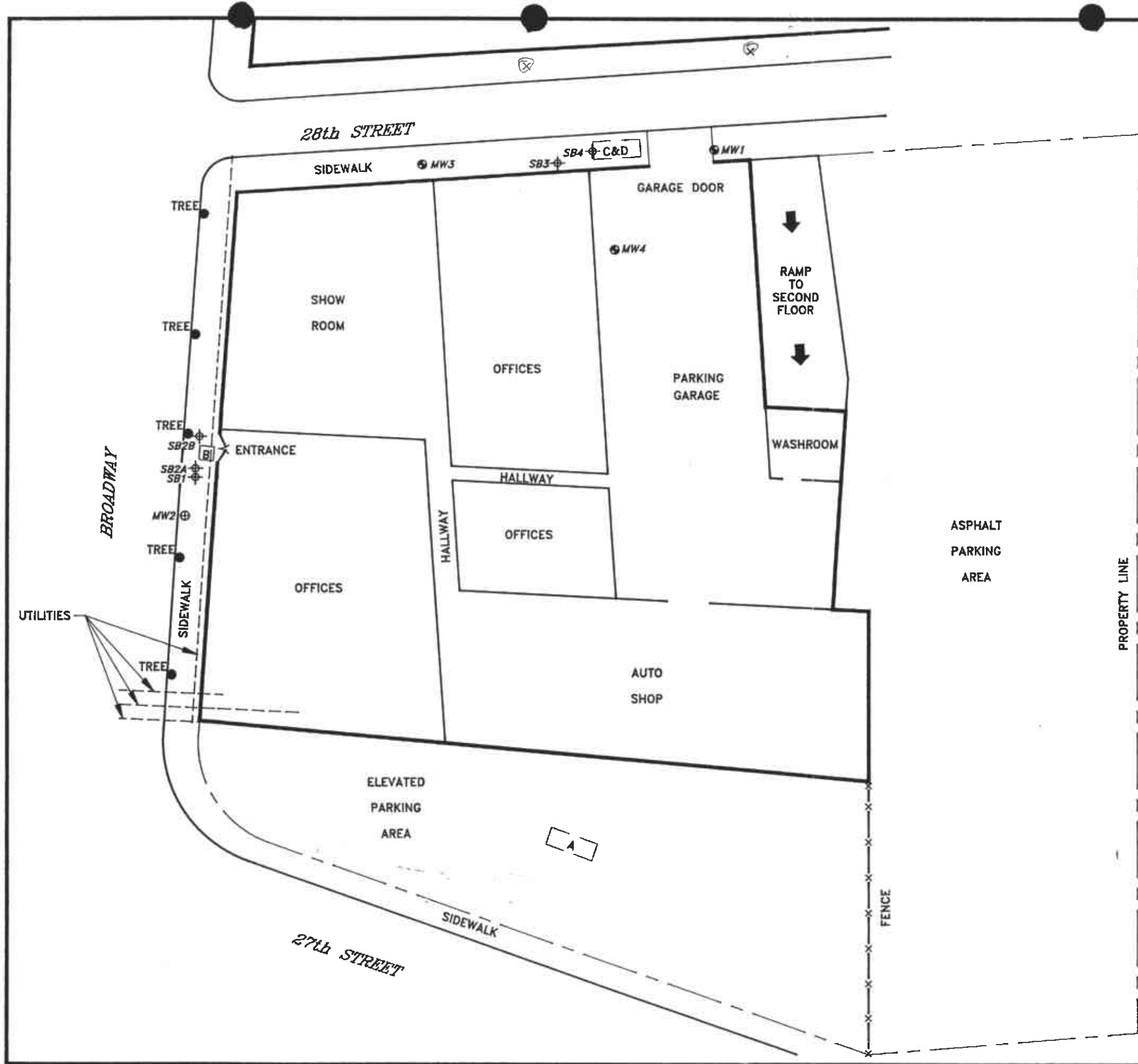
Bart S. Miller
Senior Staff Geologist



Chuck Biagi, P.E.
Regional Office Manager

Attachment - Figure 1. Site Plan

BSM/CB:bsm




LEGEND

- MONITORING WELL
- ⊕ ABANDONED MONITORING WELL
- ⊕ SOIL BORING
- × PROPOSED MONITORING WELL LOCATIONS

TANKS

- A WASTE OIL (1,000 GAL.); TANK REMOVED, SITE CLEAN
- B WASTE OIL (550 GAL.); TANK REMOVED
- C&D WASTE OIL (550 GAL.) AND UNLEADED GASOLINE (3,000 GAL.); TANKS REMOVED



		Environmental Science & Engineering, Inc.	
A GROUP COMPANY			
VORELCO #4286 BROADWAY VOLKSWAGEN OAKLAND, CALIFORNIA			
FIGURE 1 SITE PLAN			
DRAWN BY	APPROVED BY	REVISED	
CVS			
DATE	FILE NAME	PROJ. NO.	
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