

June 18, 1991
SCI 537.006

Ms. Maria Bigornia
City of Emeryville
2200 Powell Street, 12th Floor
Emeryville, California 94608

Work Plan
Phase 3 Contamination Assessment
1056 48th Street
Emeryville, California

Dear Ms. Bigornia:

This letter presents a Work Plan prepared by Subsurface Consultants, Inc. (SCI) to perform a Phase 3 Contamination Assessment of the subject site. We previously performed a geotechnical investigation and environmental consultations regarding the site. The results were presented in correspondence dated January 19, February 8 and April 5, 1991.

During our geotechnical investigation, we obtained four near-surface soil samples for analytical testing. The samples were composited and analytically tested for petroleum hydrocarbons, benzene, toluene, xylene, and ethylbenzene (BTXE), volatile halocarbons, heavy metals, cyanide, and semi-volatile organics. Each of the samples from the composite were then individually analyzed for the detected contaminants. The results (presented in our February 8, 1991 letter) indicated concentrations of diesel, polynuclear aromatic hydrocarbons (PNA's) and lead that we considered high enough to warrant further investigation. The concentrations of cyanide, cadmium, BTXE and volatile halocarbons were low; accordingly, the risks associated with these materials were also considered to be low.

During our Phase 2 assessment, we drilled four additional test borings and performed analytical tests in order to determine the extent of diesel, PNA's and lead at the site. The results (transmitted in our April 5, 1991 report) indicated that diesel exists in the upper about 1 foot of soil across the site, PNA's and

■ Subsurface Consultants, Inc.

Ms. Maria Bigornia
City of Emeryville
SCI 537.006
June 18, 1991
Page 2

significant lead concentrations exist in the upper about 1 foot of soil at the former residence location, and motor oil is located in native soil beneath 9 feet of fill along the former Temescal Creek channel. None of the analytes were detected in a "grab" groundwater sample from one of the test borings. We concluded that the diesel concentrations were low enough to not warrant remediation. We recommended that the soil containing PNA's and significant lead concentrations be remediated. We also concluded that, because the motor oil concentration was greater than 100 mg/kg, the regulatory agencies may require further study and/or groundwater monitoring.

In their letter dated June 3, 1991, the Alameda County Health Care Services Agency (ACHCSA) required that the extent of soil and groundwater contamination at the site be determined.

Work Plan

Our Work Plan during the Phase 3 contamination assessment will consist of four general tasks:

Task 1 - Soil Contamination Investigation

Four test borings about 10 to 15 feet deep will be drilled to investigate the extent of motor oil contamination in soil on-site. The anticipated test boring locations are shown on the Site Plan, Plate 1. The test borings will be drilled using truck-mounted, hollow-stem augers. The drilling and sampling equipment will be steam-cleaned prior to each use. Soil cuttings generated during drilling will be encapsulated with polyethylene sheeting and left on-site for later disposal by others. The boreholes will be backfilled with cement grout upon completion.

Our geologist/engineer will observe drilling operations and prepare logs of the soils encountered. Undisturbed soil samples will be obtained at frequent intervals. The samples will be retained in brass liners. Teflon sheets will be placed over the liner ends prior to capping, taping and labeling. The samples will be placed in ice chests, and refrigerated until delivery to the analytical laboratory. The samples will be accompanied by chain-of-custody records.

Task 2 - Groundwater Monitoring Well Installation

Three test borings/groundwater monitoring wells will be installed at the site to investigate groundwater contamination and the depth and direction of groundwater flow. The approximate well locations are shown on the Site Plan. Two of the wells will be located at

Ms. Maria Bigornia
City of Emeryville
SCI 537.006
June 18, 1991
Page 3

the rear corners of the property; along the former alignment of Temescal Creek. The third well will be located near the west property boundary. The test borings will be drilled using truck-mounted, 8-inch-diameter, hollow-stem auger equipment. The boreholes will be drilled to estimated depths of 20 to 30 feet. Groundwater monitoring wells will be constructed in the boreholes.

Equipment cleaning, soil cutting handling, sampling, and borehole logging will be performed as described in Task 1.

The groundwater monitoring wells will consist of 2-inch-diameter, machine-slotted PVC pipe. The well heads will be set below grade in utility boxes. The wells will be installed in accordance with requirements of the ACHCSA and the San Francisco Bay Regional Water Quality Control Board (RWQCB). The wells will be developed by removal of water, using a pump or steam-cleaned Teflon bailer, until the water becomes relatively clear. The removed water will be placed in DOT rated steel drums and left on-site for later disposal by others.

After development, groundwater samples will be obtained from the wells using a steam-cleaned sampler. The water will be placed in pre-cleaned sample containers. The groundwater samples will be placed in an ice chest, and refrigerated until delivery to the analytical laboratory. The samples will be accompanied by chain-of-custody records.

We will perform a level survey of the tops of the well casings, using an assumed elevation datum, and measure the depth of groundwater at the wells. Based upon the data, we will determine the direction of groundwater flow.

Task 3 - Analytical Testing

Analytical testing will be performed by a State of California Department of Health Services (DHS) certified analytical laboratory. Motor oil has been detected at the site. Accordingly, three soil samples from each boring and groundwater samples from each well will be analytically tested for oil and grease, and total extractable hydrocarbons, as diesel. The water sample from the well closest to, and down-gradient from, the former residence location will also be analyzed for dissolved lead and PNA's. The tests are described as follows:

1. Total oil and grease, sample preparation and analysis using EPA methods 3550 (solvent extraction) and SMWW 5520 E&F (gravimetric determination),

Ms. Maria Bigornia
City of Emeryville
SCI 537.006
June 18, 1991
Page 4

2. Total extractable hydrocarbons, as diesel, sample preparation and analysis using EPA Methods 3550 (sonication) and 8015 modified (gas chromatograph coupled to a flame ionization detector),
3. Dissolved lead, sample preparation and analysis using EPA method 7421 (graphite furnace atomic adsorption), and
4. PNA's, sample preparation and analysis using EPA methods 3550 and 8100 (gas chromatograph and flame ionization detector).

Task 4 - Analyses and Report

Following completion of analytical testing, we will submit a report describing the results of our subsurface exploration and monitoring well installation, sampling procedures, and the results of the analytical testing and analyses. The report will include boring logs, analytical test data and sample custody records.

Depending upon the results of the field exploration and analytical testing, subsequent investigation may be recommended in order to evaluate specific areas of suspected contamination and/or to determine the extent of contamination extending off-site. This subsequent investigation may include obtaining soil samples from additional test borings, groundwater samples from additional wells, and performing analytical tests to check for contamination. Quarterly monitoring of the wells will also be required.

After the extent of soil and groundwater contamination is known, a Work Plan for remediation and/or monitoring will be prepared. The scope of the Work Plan will depend upon the results of this and future investigations (if necessary).

If you have questions, please call.

Yours very truly,

Subsurface Consultants, Inc.


William K. Wikander

Geotechnical Engineer 892 (expires 12/31/92)

WKW:RWR:sld

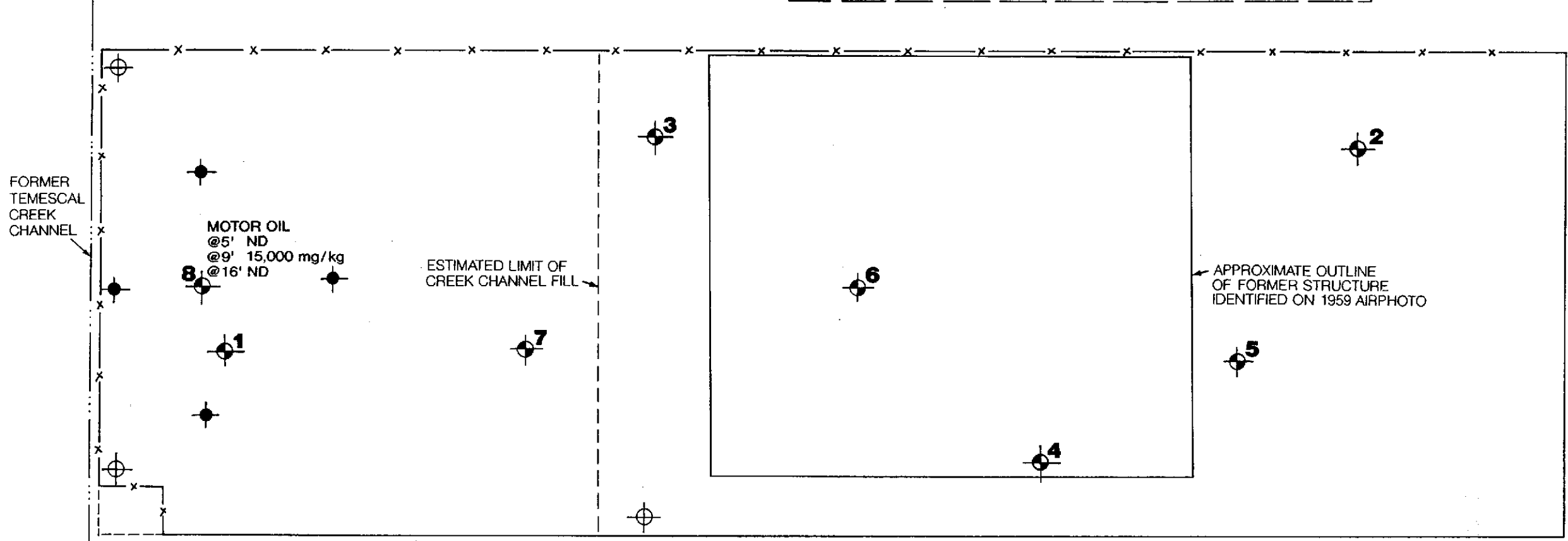
Ms. Maria Bigornia
City of Emeryville
SCI 537.006
June 18, 1991
Page 5

Attachments: Site Plan

Copies: Addressee (1)

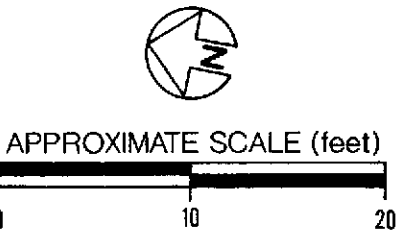
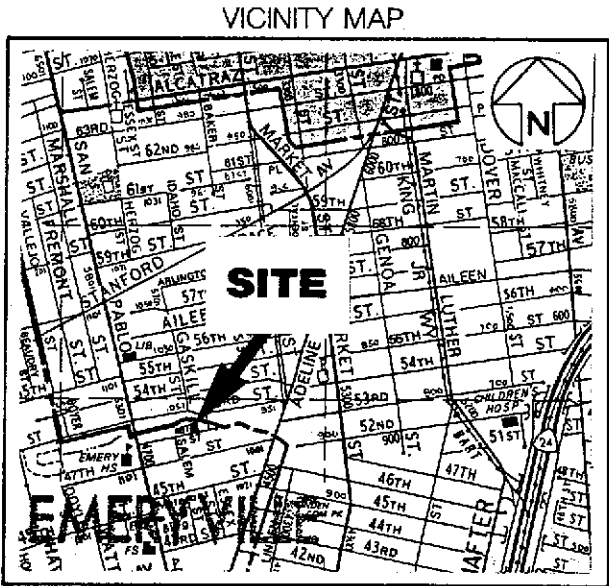
Ms. Susan Hugo (1)
Alameda County Health Care Services Agency
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, California 94621

ADJACENT RESIDENCE



ADJACENT RESIDENCE

- PREVIOUS TEST BORING
- FENCE
- PROPOSED MONITORING WELL
- PROPOSED TEST BORING



SITE PLAN			PLATE 1
1056 48TH STREET - EMERYVILLE, CA			
JOB NUMBER 537.006	DATE 12/7/90	APPROVED 	

Subsurface Consultants