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Thomas E. Cundey, PE
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February 8, 1996
SCI 609.004

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Work Plan
Investigation of Downgradient Extent of Groundwater Contamination
2250 Telegraph Avenue
Oakland, California

ENVIRONMENTAL
PROFESSIONAL
95 FEB -9 PM 2:05

Dear Ms. Eberle:

This letter presents a work plan prepared by Subsurface Consultants, Inc. (SCI) to conduct an investigation of the downgradient extent of groundwater contamination associated with the referenced site. As described in a report dated July 1, 1991, SCI previously observed the removal of two 10,000 gallon underground gasoline storage tanks and one 280 gallon waste oil tank in August 1990. Approximately 500 cubic yards of gasoline impacted soils were remediated on-site and disposed of at a Class III sanitary landfill. In February 1994, SCI observed the excavation of contaminated soils near the former waste oil tank and installed four groundwater monitoring wells.

Background

SCI has conducted a quarterly monitoring program since March 1994. Data generated to date indicates that groundwater has been impacted by Total Petroleum Hydrocarbons within the gasoline and diesel range, BTEX, 1,2-Dichloroethane (DCA), and Tetrachloroethene (PCE).

In a letter dated November 8, 1995, the Alameda County Health Care Services Agency requested further definition of the downgradient extent of groundwater contamination.

The direction of groundwater flow in the area varies considerably. While the direction of groundwater flow computed using the 4 on-site wells has consistently been towards the east/southeast, groundwater flow directions at other nearby sites have been interpreted to be towards the west and north. Given this

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variation in groundwater flow direction and the objective of installing a monitoring well near the downgradient edge of the contaminant plume, we recommend that a preliminary assessment of the extent of groundwater contamination be conducted using temporary well points prior to the installation of a permanent groundwater monitoring well. In this way, the number of permanent well installations required to bound the plume will be ultimately reduced saving both cost and time.

Work Plan

SCI proposes that the site investigation include the following tasks:

Task 1 - Temporary Well Points

The extent of groundwater contamination will be evaluated by obtaining groundwater samples from 5 temporary wells, each approximately 15 feet deep. The temporary wells will be located cross- and down-gradient of the former underground tanks. Proposed well point locations are shown on the attached site sketch. Prior to the investigation, drilling permits will be obtained including City of Oakland excavation permits and groundwater protection permits from the Alameda County Flood Control and Water Conservation District. In addition, Underground Service Alert will be contacted to notify utility service companies of the proposed work.

The borings will be continuously cored using a portable, hydraulically-driven soil coring system (Enviro-Core). SCI's field engineer/geologist will observe coring operations and prepare detailed logs of the soils encountered. Soil samples will be retained in stainless steel or brass tubes. Soil samples will be screened in the field using an organic vapor meter (OVM). The soil samples will be reexamined in our laboratory to verify field classifications.

Upon completion of coring, a 1-inch diameter machine slotted well screen will be placed into the borings to facilitate collection of groundwater samples. Approximately 3 volumes of water will be removed from the casings prior to sampling. Water samples will be retained using new disposable bailers and will be placed in appropriate containers supplied by the laboratory. Following sample collection, the casings will be removed and the borings will be backfilled with cement grout and patched to match existing conditions.

Drilling and sampling equipment will be steam cleaned prior to each use. Steam cleaning water, purge water and any soil cuttings will be removed from the site by the drilling subcontractor.

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The [redacted] will be transmitted to Curtis & Tompkins, Ltd., an analytical laboratory certified by the State of California Department of Health Services. For estimating purposes, SCI proposes analyzing 1 water sample from each boring. The samples will be analyzed for the following:

1. Total extractable hydrocarbons [redacted] using EPA Methods 3550/8015 modified,
2. Total volatile hydrocarbons [redacted] and Benzene, Toluene, Ethylbenzene and Xylene [redacted] using EPA Methods 5030/8015 modified, and 8020, and
3. Halogenated Volatile Organic compounds [redacted] using EPA Methods 5030/8010.

Test results will be summarized in tables presented in a final report.

Task 2 - Permanent Monitoring Well Installation

The [redacted] of the Enviro-Core groundwater sampling [redacted] will be [redacted] to [redacted] to [redacted] the well. In general, the well will be installed near the downgradient edge of the contaminant plume.

The monitoring well will be installed to a depth of about 10 feet below the groundwater surface using a truck mounted drill rig equipped with hollow stem auger equipment. SCI has assumed that the boring will be on the order of 20 feet deep. Drilling and sampling equipment will be steam cleaned prior to their use. Soil cuttings and cleaning water generated during the drilling process will be placed in DOT rated 55-gallon drums and disposed of at a later time as subsequently described.

SCI's field engineer will observe drilling operations and prepare a detailed log of the soils encountered. One soil sample will be selected from the soil/groundwater interface and refrigerated until transmitted to the analytical laboratory. The test boring will be completed as a groundwater monitoring well. The well will consist of 2-inch-diameter, PVC casing and machine-slotted screen. The wellhead will be secured with a locking cap and finished below grade in a traffic rated utility box.

The well will be developed by pumping and/or bailing until the water is relatively clear. Measurements of pH, conductivity and temperature will be made during development. Development water will be placed in a 55-gallon drum which will be disposed of at a later time as described below. After development, a groundwater sample will be obtained from the well using a disposable sampling device. The sample will be retained in EPA approved pre-cleaned containers

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and refrigerated until transmitted to a State of California Department of Health Services certified analytical laboratory for testing.

The soil cuttings, cleaning water and waste groundwater generated during the well installation and development processes will be picked up by Romac Environmental Technologies, a State of California certified hazardous waste disposal company.

It is expected that ongoing groundwater sampling of this well will be coordinated concurrent with the sampling of the existing wells.

Task 3 - Engineering Analysis and Report Preparation

Based on the studies described herein, SCI will develop conclusions regarding:

1. Soil and groundwater conditions;
2. The groundwater gradient and flow direction;
3. The presence of the tested for contaminants in the samples analyzed; and
4. The significance of contaminant levels with respect to regulatory criteria.

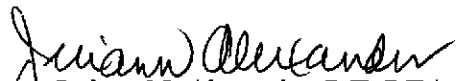
The results of the study will be presented in a written report. The report will include a site plan, boring logs, analytical test data, Chain-of-Custody Records and the scope of additional investigation, if warranted.

SCI appreciates the opportunity to present this work plan and would be pleased to discuss it with you, if you have any questions.

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Yours very truly,

Subsurface Consultants, Inc.

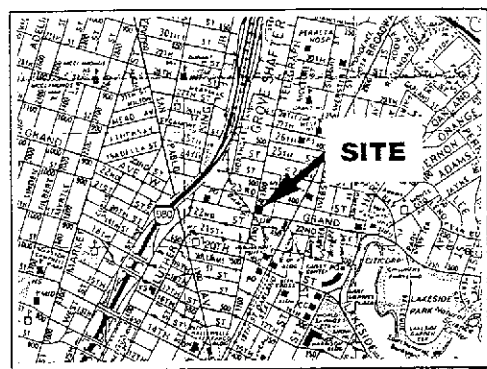
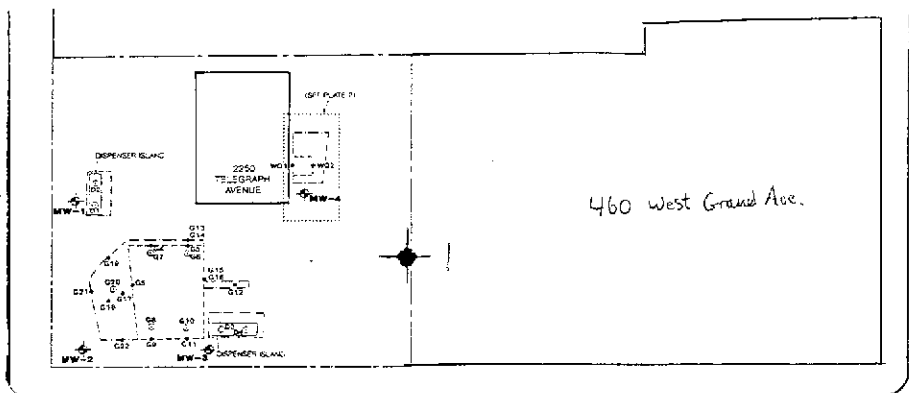

Jeriann N. Alexander, P.E. REA
Project Manager

JD:JNA:RWR:sld

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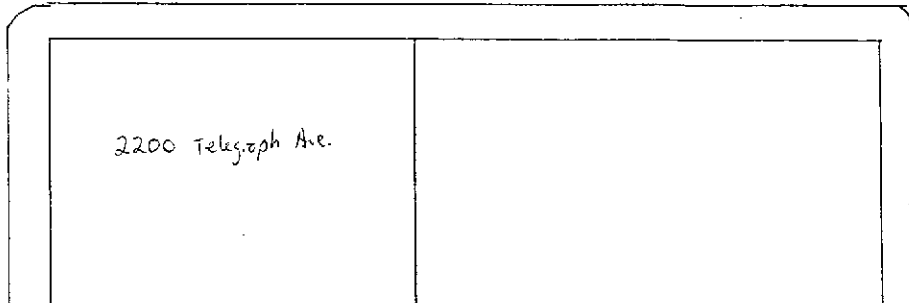
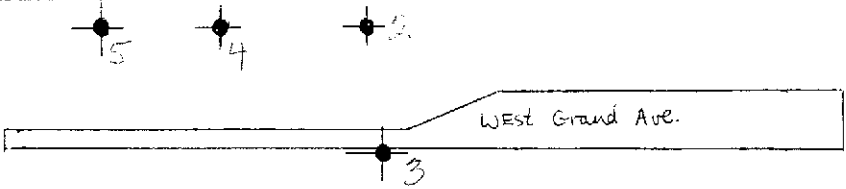
Attachments: Site Plan

cc: Ms. Marianne Robison
Buttner Properties
600 West Grand Avenue
Oakland, California 94612



VICINITY MAP

Telegraph Ave.

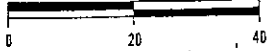


- x — FENCE
- STRUCTURE
- - - - - EXTENDED EXCAVATION
- - - - - ORIGINAL EXCAVATION
- ⊙ BOTTOM SAMPLE
- SIDEWALL SAMPLE
- PREVIOUS TANKS
- ★ MONITORING WELL

★ PROPOSED BORING



APPROXIMATE SCALE (feet)



1" = 20'

SITE PLAN			PLATE
2250 TELEGRAPH AVENUE - OAKLAND, CA			1
JOB NUMBER	DATE	APPROVED	
609.002	11/30/90	<i>[Signature]</i>	

Subsurface Consultants