



**Subsurface Consultants, Inc.**

R. William Rudolph, P.E.  
President

April 15, 1998  
SCI 838.005

Ms. Eva Chu  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, California 94502

**Work Plan**  
**Additional Soil Investigation**  
**2801 MacArthur Boulevard**  
**Oakland, California**

Dear Ms. Chu:

Subsurface Consultants, Inc. (SCI) is pleased to present this work plan to perform the next phase of investigation at the referenced site. In a letter dated January 13, 1998, the Alameda County Health Care Services Agency (ACHCSA) indicated that they had reviewed SCI's Risk Based Corrective Action (RBCA) Tier 2 site analysis (letter report dated October 28, 1997) and concurred that additional study is required to "determine if volatilization of chemicals is still a concern." SCI subsequently discussed the rationale of soil and vapor sampling with the ACHCSA, and the ACHCSA has agreed in principle with the objective and approach contained herein. The overall objective will be to evaluate soil vapor concentrations within the construction zone and obtain and analyze, as necessary, soil samples to allow the completion of the Tier 2 assessment.

## **PROJECT BACKGROUND**

The property has been commercially developed since the early 1930s. Records indicate that the site was historically occupied by a gasoline service station. Currently, the station building is being used by an auto repair business. In May 1989, three underground gasoline storage tanks were removed from the site and approximately 435 cubic yards of impacted soil were excavated and removed. Studies indicate that soil and groundwater beneath the site have been impacted by previous petroleum releases. Groundwater monitoring was performed at the site between 1990 and 1996. Biotreatability analyses were also conducted during two of the groundwater monitoring events. SCI performed a Tier 2 risk analysis which indicated the onsite impacted material appears to pose no significant risk to human health nor the

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environment for current site conditions. However, ACHCSA expressed concern regarding potential human health risks associated with future uses of the commercially-zoned property. Specifically, if a building were constructed in the area of Boring B-9, a potential risk may exist (based on modeling using the existing data) for occupants in that building. The ACHCSA also raised a concern with respect to the lack of data in the area of the former pump islands.

### **SCOPE OF SERVICES**

The scope of services provided herein will generate current data to assess whether a potential human health risk exists for this possible future use of the property. SCI's scope of services will comprise the following tasks:

- Task 1 - Additional Investigation Near Boring B-9 and the Former Pump Islands
- Task 2 - Comparison of Data to RBCA Tier 1 and 2 Risk Levels
- Task 3 - Report Preparation

These tasks are further described below.

#### **Task 1 - Additional Investigation Near Boring B-9 and the Former Pump Islands**

SCI will obtain soil and soil-gas samples from three borings drilled in the area of Boring B-9 (where benzene concentrations measured up to eight years ago were significantly elevated) and the former pump islands. The proposed locations of these borings are presented on the attached Site Plan. When historic soil data from Boring B-9 was modeled using the RBCA volatilization model, the average benzene concentration from this boring represented a potential concern to indoor air quality for a new structure built over this area without a proper building vapor mitigation system. It is suspected that hydrocarbon concentrations have degraded and attenuated with time, and no longer pose such a concern. The purpose of the additional sampling will be to check the current hydrocarbon concentrations in soil and soil-gas at this location and in the area of the former pump island.

SCI will retain the services of a licensed drilling contractor to drill and sample soil and soil-gas from the borings to a maximum depth of approximately 30 feet. A soil-gas probe will be utilized to obtain two soil-gas samples from the upper 6 feet of the borings. The soil-gas probes will be purged and then siphoned to withdraw air samples at depths of 3 and 6 feet to represent potential vapor readings within the anticipated depth of future construction. Air samples withdrawn from the probe will be evacuated into a Summa Canister. Samples will be transferred immediately to a state-certified laboratory for chemical analyses on a rapid

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turnaround basis. The chemical testing program will include analyses for total volatile hydrocarbons as gasoline (TVH-g), and benzene, toluene, ethylbenzene, and xylenes (BTEX).

The probe will be advanced beyond each soil-gas sampling point to obtain representative soil samples for confirmation testing. Up to six soil samples will be obtained to a depth of groundwater or to a maximum depth of 30 feet. If the results of the vapor analysis exceed the RBCA Tier 1 risk values, the soil samples will be submitted to a state-certified laboratory for TVH-g and BTEX analysis.

Prior to field activities, SCI will obtain a drilling permit from the Alameda County Public Works Agency. SCI will retain the services of an underground utility locator to clear any buried utilities that may be located beneath the soil-gas probe locations. A subcontractor will also be retained to core the concrete for the borings drilled adjacent to the former pump islands.

#### **Task 2 - Compare Data to RBCA Tier 1 and 2 Risk Levels**

SCI will compare the soil-gas sample test results with the RBCA Tier 1 risk values. If the soil-gas sample test results exceed the risk values, SCI will input the average of the concentrations from the newly obtained soil samples into the RBCA Tier 2 model and complete a Tier 2 Assessment for the impacted soils at depth. SCI will evaluate the data and comment with respect to the comparisons and appropriateness of petitioning for site closure as a low risk site. If additional study is required, SCI will present a scope of services to further evaluate the distribution of petroleum hydrocarbons in soil.

#### **Task 3 - Report Preparation**

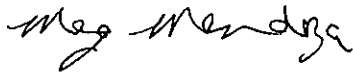
SCI will prepare a report summarizing the field investigation, sampling methodology, and data from chemical analyses. The report will include laboratory analysis reports and chain-of-custody documents, data summary tables, discussion and evaluation of the data, and conclusions and recommendations.

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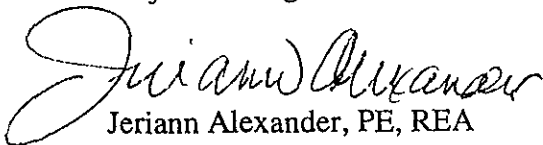
SCI is ready to implement this work plan pending your favorable review and upon receipt of cost pre-approval from the Fund. If you have any questions, please call either of the undersigned.

Very truly yours,

Subsurface Consultants, Inc.



Meg Mendoza  
Project Geologist



Jeriann Alexander, PE, REA  
Project Manager

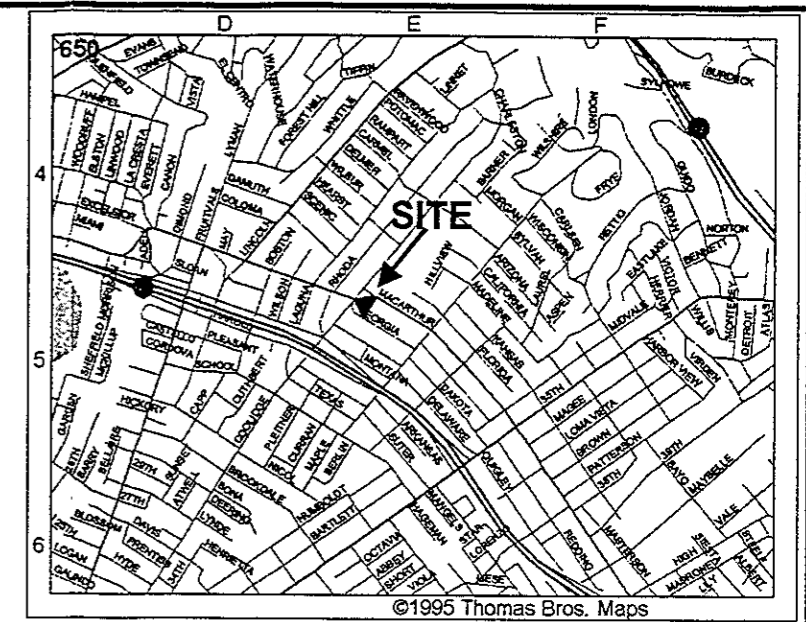
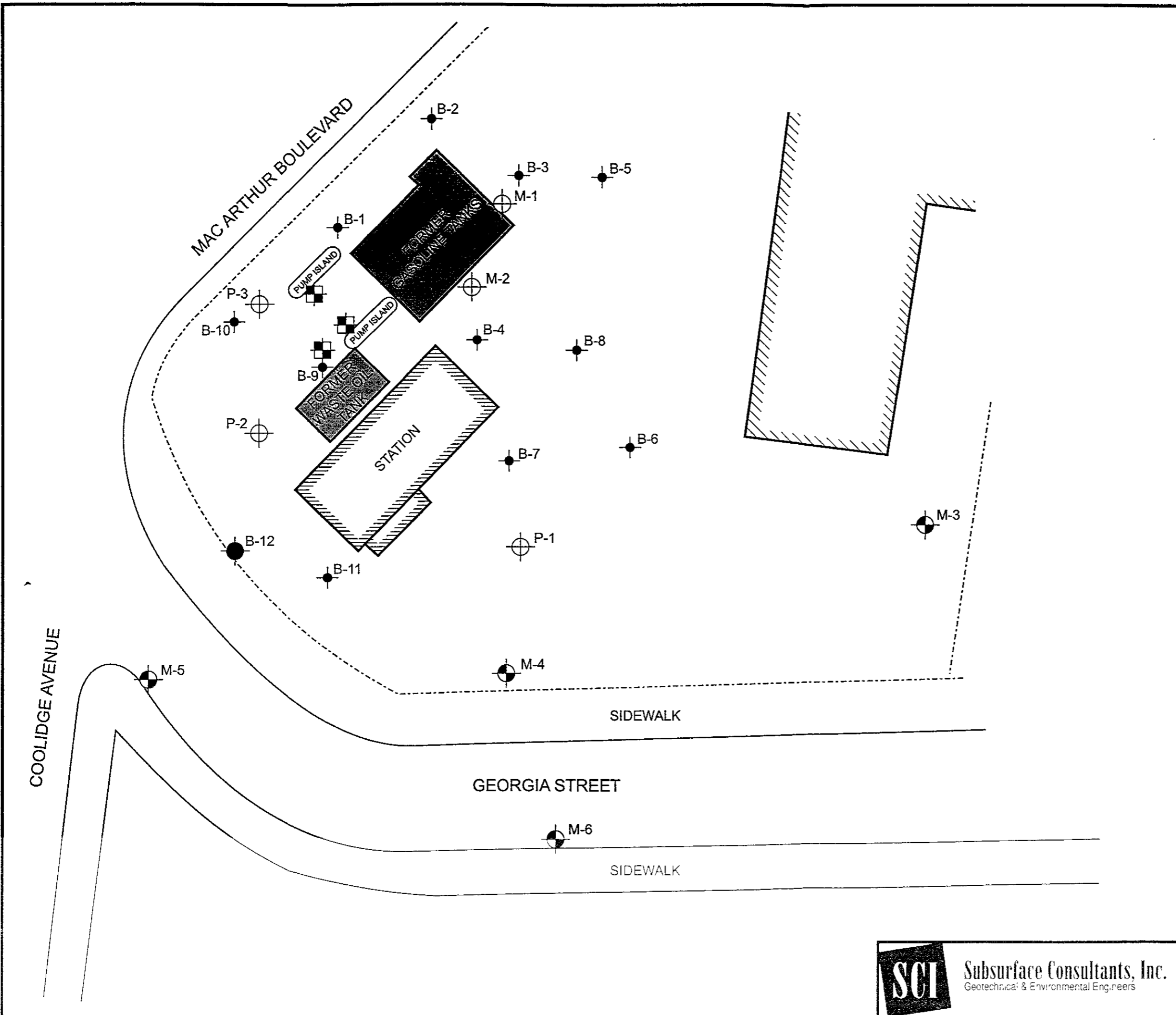
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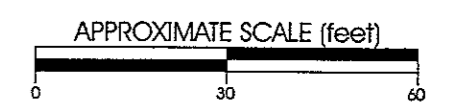
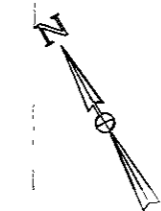
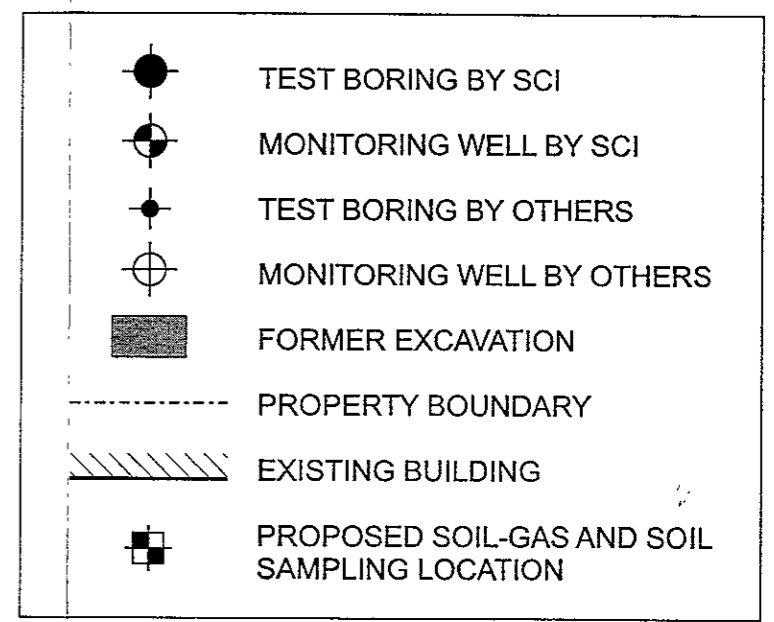
Attachments: Site Plan

cc: A.P.A. Fund  
c/o Ms. Aniko Molnar  
Environmental Consultant  
7 Morning Sun Avenue  
Mill Valley, California 94941

A.P.A. Fund Ltd.  
c/o Mr. Nicolas Molnar  
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Oakland, California 94612



VICINITY MAP



<b>SITE PLAN</b>		
2801 MAC ARTHUR BLVD OAKLAND, CALIFORNIA		PLATE <b>1</b>
JOB NUMBER 838 005	DATE 4/6/98	APPROVED <i>[Signature]</i>

**SCI** Subsurface Consultants, Inc.  
Geotechnical & Environmental Engineers