BLYMYER
ENGINEERS, INC.

June 27, 2001
BEI Job. No. 201064

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

JUN 29 2001

One SB should be a duplicate by "former" sump area

**Subject:** **Phase II Subsurface Investigation Workplan**
**819-823 East 12th Street**
**Oakland, California**

Dear Ms. Chu:

Blymyer Engineers, Inc. is pleased to present this technical workplan to perform a Phase II subsurface investigation at the subject site (Figures 1 and 2). The specifics of the workplan are as follows:

**Project Understanding**

Blymyer has reviewed the Phase I Environmental Site Assessment (ESA) and Phase II Environmental Site Investigation reports prepared by Basics Environmental (Basics) in 1996. In the Phase I ESA, Basics documented the presence of heavy oil contamination (surface staining and distressed vegetation) in an unpaved area behind the building at the subject site. Basics also determined that a cleanup order had been issued for this contamination by the Alameda County Health Care Services Agency (ACHCSA) in 1991, and that the subject site was shown as an active site on the Regional Water Quality Control Board's Fuel Leak List.

Basics performed a subsurface investigation in the unpaved area which consisted of the installation of four soil bores (B-1 through B-4, Figure 2) to a depth of 16 to 19 feet below ground surface (bgs). Soil samples were collected at 0.5 feet, 5 feet, 10 feet and 15 feet bgs in each soil bore. Grab groundwater samples were collected from three of the soil bores. All samples were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH; EPA Method 418.1) and the five LUFT Metals (cadmium, chromium, lead, nickel and zinc). Concentrations of TRPH up to 19,000 milligrams per kilogram (mg/kg) and lead up to 870 mg/kg were detected in the soil samples collected at 0.5 feet bgs. TRPH concentrations were non-detectable in the soil samples at 5 feet bgs, indicating that the heavy oil contamination observed during the Phase I ESA was limited to near-surface soil. TRPH was found in two of the soil bores at a depth of 10 feet bgs and in one of the grab groundwater samples. Basics attributed the deeper soil and groundwater contamination to another source, possibly a former sump located in the unpaved area.

The ACHCSA issued a "Second Notice of Violation," dated March 21, 2001, requesting a technical workplan to delineate soil and groundwater contamination at the site. The letter requested submittal of the workplan by April 23, 2001.

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**Scope of Work**

The proposed scope of work for the subsurface investigation is as follows:

**1.0 Prepare a technical workplan for submittal to the ACHCSA**

This workplan has been prepared to describe the proposed work and to document standard operating procedures.

**2.0 Obtain a drilling permit and contact USA for utility clearance**

Upon acceptance of the workplan by the ACHCSA, a boring permit will be obtained from the Alameda County Public Works Agency. Underground Service Alert (USA) will be also contacted for utility clearance.

**3.0 Prepare a site-specific health and safety plan**

A health and safety plan will be generated to outline potentially hazardous work conditions and contingencies for an emergency.

**4.0 Drill four soil bores**

Four soil bores will be drilled to a depth of 15 feet bgs using a Geoprobe direct-push rig. Two soil bores would be placed near the northwest and southwest corners of the property and two soil bores would be placed in the middle of the unpaved area (Figure 2). The soil bores would be located to provide additional delineation on the extent of contamination on-site and to attempt to obtain worst-case contaminant concentrations to support a potential Tier 2 risk assessment, as discussed in Section 8.0

**5.0 Field screen and collect samples for laboratory analysis**

Soil samples will be collected at depths of 0.5 feet, 5 feet, 10 feet, and 15 feet bgs for field screening for organic vapors using a photoionization detector (PID) and for lithologic description. A temporary well screen will be installed and a grab groundwater sample will be collected from each soil bore.

All soil and grab groundwater samples will be collected in accordance with the attached Blymyer Engineers' *Standard Operating Procedure No. 4, Soil and Grab Groundwater Sampling Using Hydraulically-Driven Sampling Equipment.*

## 6.0 Backfill the soil bores with concrete grout

The soil bores will be backfilled with concrete grout upon completion. Soil cuttings and decontamination liquids will be placed in DOT-approved drums or pails for later disposal by the client.

## 7.0 Analyze soil and grab groundwater samples

VOAs must not be preserved and must analyze within 24 hours

All soil and grab groundwater samples will be analyzed on a standard 1-week turnaround for TRPH using EPA Method 418.1 and the five LUFT metals using EPA Method 6010. The grab groundwater samples will be filtered by the laboratory prior to analysis. The two soil samples and two grab groundwater samples with the highest TRPH concentrations will be additionally analyzed on a standard 1-week turnaround for Volatile Organic Compounds (VOCs) using EPA Method 8240 and Semi-VOCs using EPA Method 8270. Selected soil samples may also be analyzed on a standard 1-week turnaround for other parameters (pH, Total Organic Carbon, moisture/density, permeability, and porosity) to support the Tier 2 risk assessment.

## 8.0 Perform a Tier 2 risk assessment

If necessary, a Tier 2 risk assessment will be performed using the data collected in the subsurface investigation to determine site-specific target levels (SSTLs) to be used as cleanup levels for soil and groundwater at the site. The risk assessment would be based on a residential scenario, based on the proposed redevelopment of the property. The data used to analyze the chemicals of concern (COC) at the site will be modified so that the chemical specific database used in the generation of SSTLs will conform to California regulatory requirements.

Blymyer Engineers proposes to use the model entitled *RBCA Tool Kit* by Groundwater Sciences, Inc. of Houston, Texas, that utilizes equations directly out of the American Society for Testing and Materials (ASTM) 1739-95 document entitled *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* and dated November 1995. The analytical fate and transport models used by the ASTM standard include the Box and Gaussian Models for onsite and offsite atmospheric modeling, respectively, Summer's Model for soil to groundwater modeling, and Domenico's Model for groundwater fate and transport modeling.

## 9.0 Prepare a final report

A final report will be prepared to document the results of the subsurface investigation and risk assessment. The report would include recommendations for additional investigation or remediation, if necessary.

Should you have any questions, please contact Mark Detterman at (510) 521-3773.

Sincerely,

Blymyer Engineers, Inc.

By: _____
Mark Detterman, C.E.G. 1788
Senior Geologist

REGISTERED GEOLOGIST
MARK E. DETTERMAN
No. 1788
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

And: _____
Michael S. Lewis
Vice President, Technical Services

Enclosures: Figure 1 Site Location
Figure 2 Site Plan

c: Mr. Robert Mintz, Robert Mintz Design Studio

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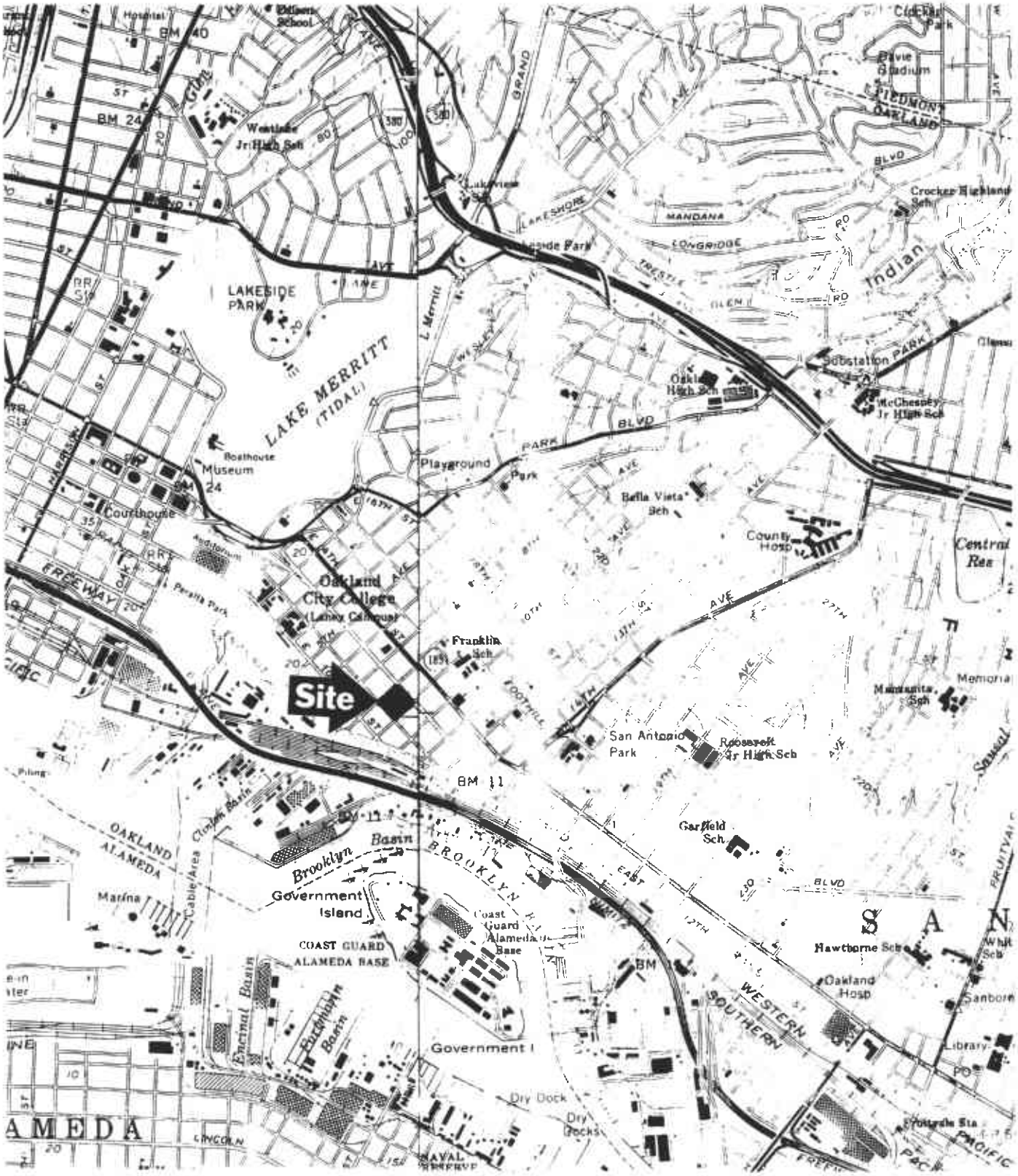


UNITED STATES GEOLOGICAL SURVEY 7.5' QUAD. "OAKLAND WEST & EAST, CA" PHOTOREVISED 1980.

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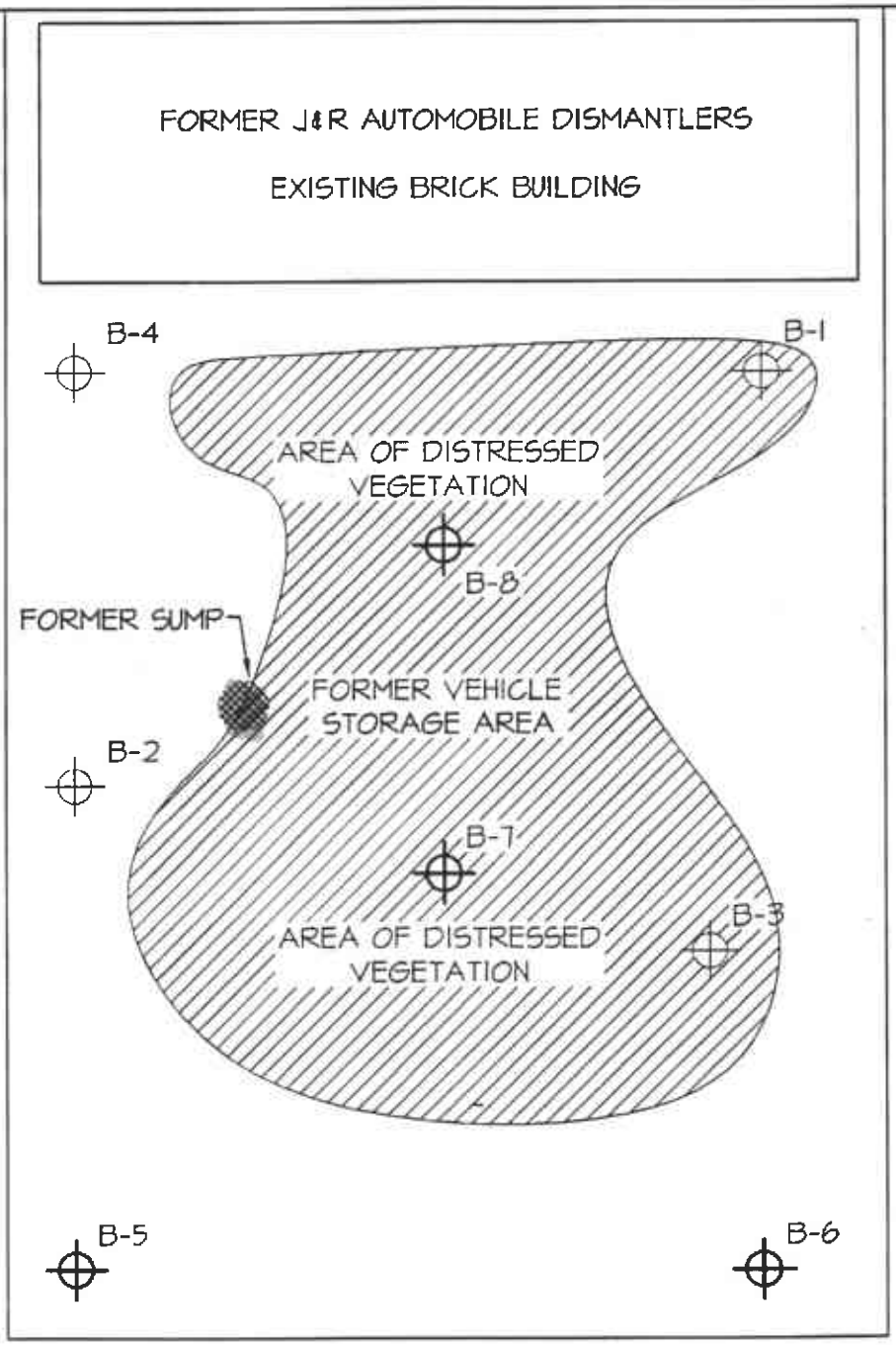
| BLYMYER ENGINEERS, INC. | 0 1000 2000<br>SCALE IN FEET | N | **SITE LOCATION MAP**<br>823 EAST 12TH STREET<br>OAKLAND, CA | FIGURE<br>1 |
| BEI JOB NO. 201064 / DATE 6/25/01 | | | | |

# EAST 12TH STREET




NOT TO SCALE



BLYMYER ENGINEERS, INC.

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LEGEND

PROPOSED BORES

EXISTING BORES

SITE PLAN

823 EAST 12TH STREET
OAKLAND, CA

FIGURE 2

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