aqua science engineers inc.

10/7/98
Talked to Dave Allen
WP approved.
Need deposit $500 ea.
Hugo
10/7/98

STID 1247

FAX BEING SENT BY:

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
Phone (925) 820-9391
Fax (925) 837-4853

DATE: 10-6-98

TO: Ms. Susan Hugo

FROM: Dave Allen

NUMBER OF PAGES TO FOLLOW: 8

**********Please Phone If This Fax Is Received Incomplete**********

MESSAGE:

The following is a workplan for 3 geoprobes at a site in Emeryville where the UST was removed a decade ago, but no records exist (soil or water data). We spoke to Tom Peacock about the scope and have proposed what he recommended. He reminded us that Emeryville is your area. Drilling is scheduled for 10/9/98 because all the drillers are very busy and this date was available at short notice. Please call with comments, if any, after review. If we do not hear from you, we will assume the ~~SOW~~ scope + schedule is O.K.

Thank You,
Dave

aqua science engineers inc.

October 6, 1998

drilling rm 10/9/98
need depo slip

WORKPLAN
for a
SOIL AND GROUNDWATER ASSESSMENT
at
Lerer Brothers Transmission Service
6340 Christie Avenue
Emeryville, CA 94608

REGISTERED PROFESSIONAL ENGINEER
DAVID M. SCHULTZ
No. 38738
Exp. 4-99
CIVIL
STATE OF CALIFORNIA

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 W. El Pintado
Danville, CA 94526
(925) 820-9391

aqua science engineers inc.

98 OCT -8 PM 3:03

STID 1247

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INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE's) workplan for a soil and groundwater assessment at Lerer Brothers Transmission Service (The Site) located at 6340 Christie Avenue, Emeryville, California (Figure 1). The proposed site assessment activities have been designed to delineate the area of petroleum hydrocarbon contamination in soil and groundwater downgradient of the former underground storage tank in order to achieve closure.

BACKGROUND INFORMATION

One 2,000 gallon steel underground storage tank (UST), used to store unleaded gasoline, was removed from the site in 1988. No records exist for this site.

PROPOSED SCOPE OF WORK (SOW)

Based on the afore-mentioned information, ASE's proposed SOW is as follows:

1) Prepare this workplan and site specific health and safety plan for approval by Ms. Susan Hugo of the Alameda County Health Care Services Agency (ACHCSA).

2) Obtain a subsurface drilling permit from the Alameda County Public Works Agency (ACPWA).

3) Call Underground Service Alert (USA) to have all public utilities in the area marked prior to drilling.

4) Using a Geoprobe hydraulic sampling rig, drill three (3) soil borings to the depth of water adjacent to the former UST in the assumed downgradient direction.

5) Collect soil samples continuously as drilling progresses for chemical analysis and hydrogeologic description. Screen the soil samples with a hand-held organic vapor meter (OVM) to determine the depth of highest concentrations of petroleum hydrocarbons in soil.

6) Analyze a soil and water sample from each soil boring at a CAL-EPA certified environmental laboratory for the following:

- total petroleum hydrocarbons as gasoline (TPH-G), EPA Method 8015M
- benzene, toluene, ethylbenzene, and xylenes (BTEX) & MTBE, EPA Method 8020
- total lead, EPA Method 6010.

7) Backfill the borings with neat cement.

8) Prepare a report detailing the methods and findings of the investigation. The report will be submitted under the seal of a registered geologist or professional engineer.

Selected details of the assessment are presented below.

TASK 1 - PREPARE A WORKPLAN AND HEALTH AND SAFETY PLAN

ASE has prepared a site-specific health and safety plan which will be on site during assessment activities.

TASK 2 - OBTAIN NECESSARY PERMITS

ASE will obtain a drilling permit from the ACPWA. ASE will also notify Underground Service Alert (USA) to have underground utility lines marked in the site vicinity.

TASKS 4 & 5- DRILL SOIL BORINGS AT THE SITE AND COLLECT SOIL AND GROUNDWATER SAMPLES FROM THE BORINGS

ASE will drill three (3) soil borings on-site at the locations shown on Figure 2. It is ASE's assumption that groundwater flows in a westerly direction. It is also ASE's understanding that the bottom of the UST was in groundwater; therefore, borings will be placed downgradient. The borings will be drilled using a Geoprobe or similar type drill rig. The drilling will be directed by a qualified ASE geologist. Undisturbed soil samples will be collected continuously for subsurface hydrogeologic description and possible chemical analysis. The samples will be described by the ASE geologist according to the Unified Soil Classification System. The samples will be collected in brass or acetate tubes using a drive sampler advanced ahead of the boring as the boring progresses. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, labeled with the site location, sample designation, date and time the sample was collected, and the

initials of the person collecting the sample. The samples will be placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with an organic vapor meter (OVM). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the OVM will measure the vapor through a small hole, punched in the bag. These OVM readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

A groundwater sample will then be collected from all three borings. Drilling will be halted at the water table and a Powerpunch or similar type device will be utilized to collect groundwater samples from the borings. The groundwater samples will be contained in (a) 40-ml volatile organic analysis (VOA) vials without headspace, and preserved with hydrochloric acid. All samples will be labeled with the site location, sample designation, date and time the samples were collected, and the initials of the person collecting the samples. The samples will then be cooled in an ice chest with wet ice for transport to a state-certified analytical laboratory under chain-of-custody.

All sampling equipment will be cleaned in buckets with brushes and a TSP or Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums for future disposal by the client.

TASK 6 - ANALYZE THE SOIL AND GROUNDWATER SAMPLES

The grab groundwater samples and one soil sample from each boring will be analyzed at a CAL-EPA certified environmental laboratory for TPH-G by EPA Method 8015M, BTEX & MTBE by EPA Method 8020, and lead by EPA Method 6010.

TASK 7 - BACKFILL THE BORINGS WITH NEAT CEMENT

Following collection of the soil and groundwater samples, the boreholes will be backfilled with neat cement placed by tremie pipe.

TASK 8 - PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a report outlining the methods and findings of this assessment. The report will be submitted under the seal of state registered civil engineer or geologist. This report will include a summary of all work completed during this assessment including tabulated soil and groundwater analytical results, conclusions and recommendations. Copies of the analytical report and chain of custody will be included as appendices.

SCHEDULE

ASE plans to begin field activities immediately upon approval of this workplan by the ACHCSA. Drilling is tentatively scheduled for October 9, 1998.

Should you have any questions or comments, please call us at (925) 820-9391.

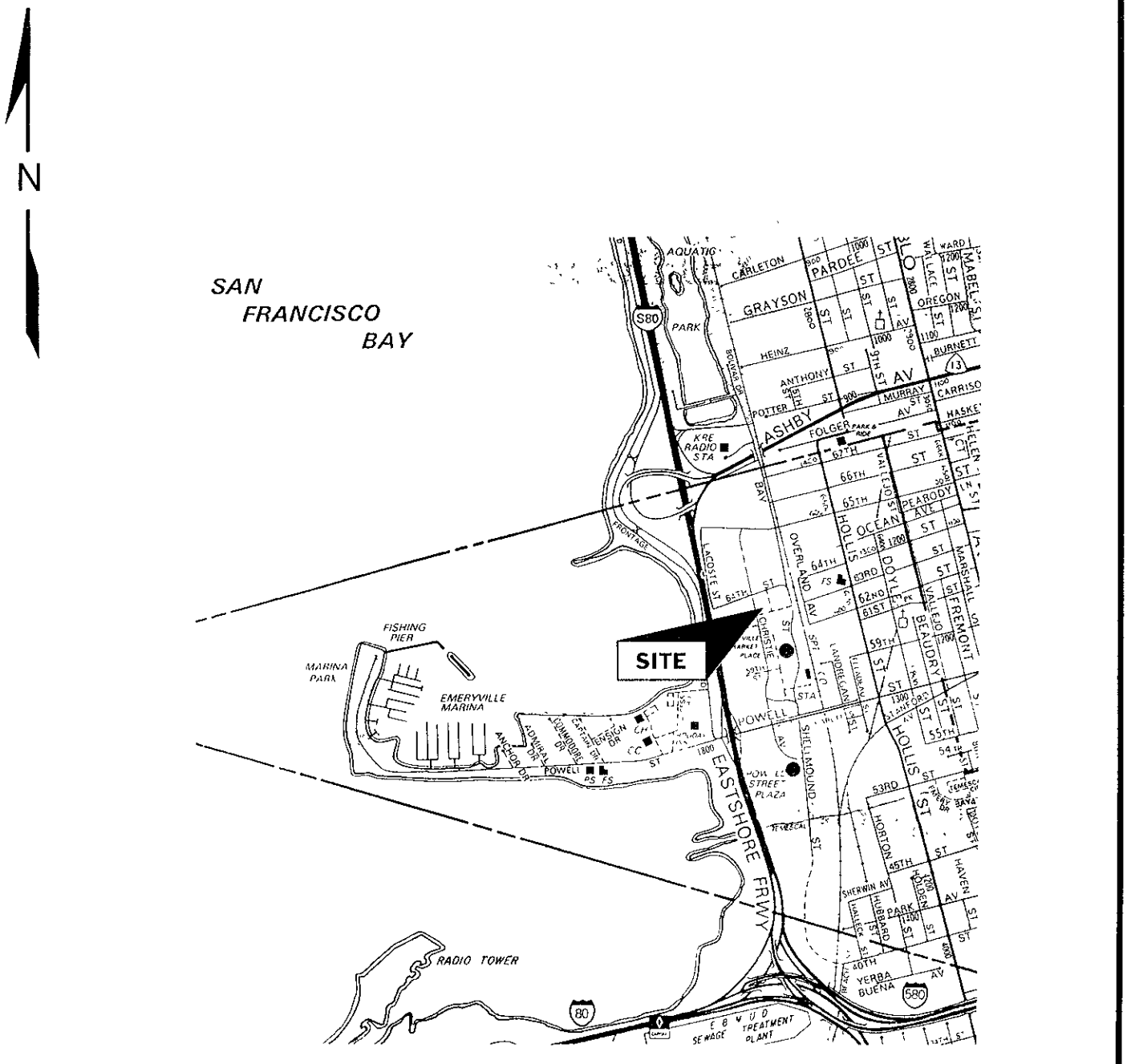
Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Greg Schramm
Staff Geologist

cc: Ms. Susan Hugo, ACHCSA
Mr. Rick Gold, Lerer Bros. Transmission Service

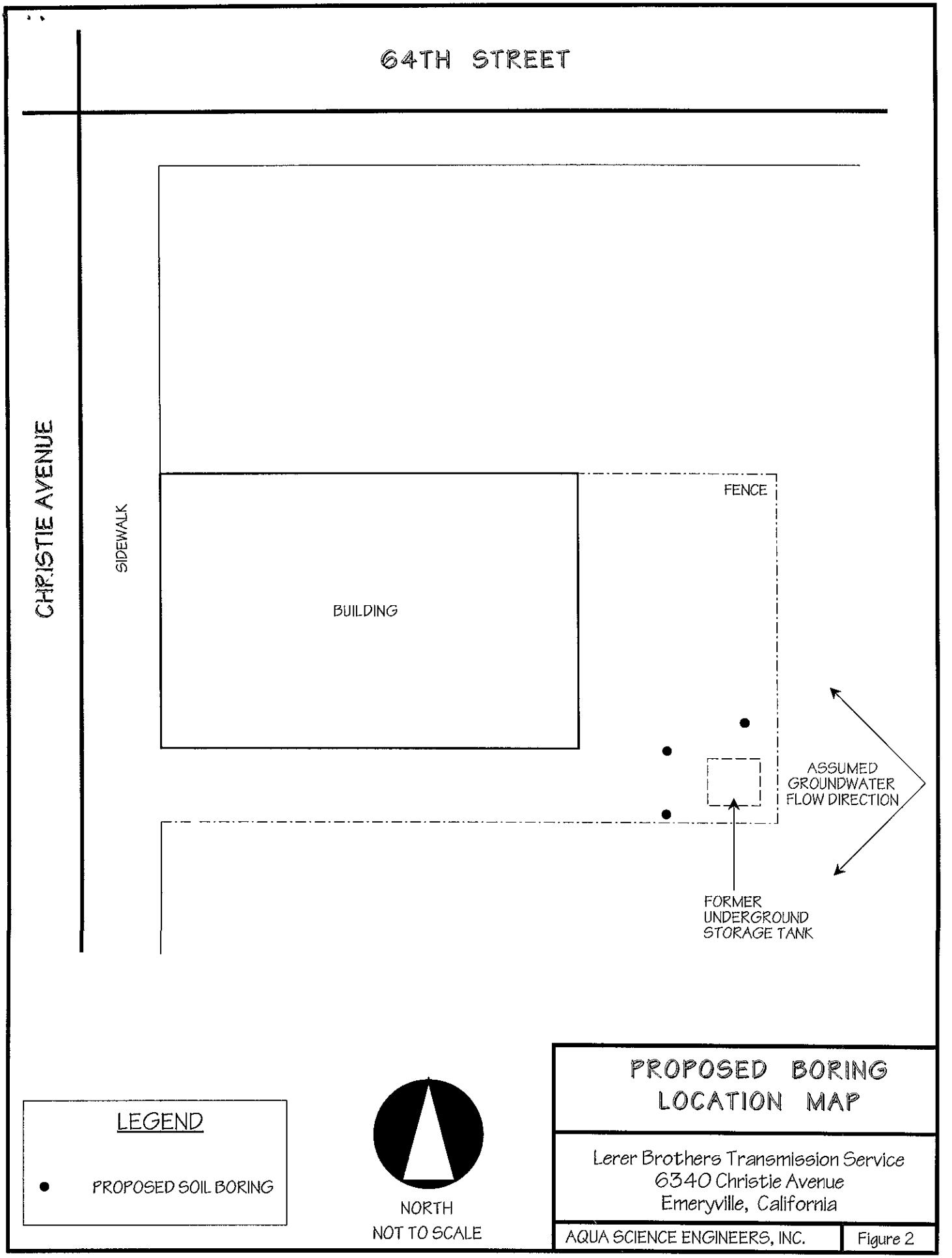
FIGURES



SITE LOCATION MAP

6340 Christie Avenue
Emeryville, California

Aqua Science Engineers | Figure 1



PROPOSED BORING LOCATION MAP

Lerer Brothers Transmission Service
6340 Christie Avenue
Emeryville, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2