aqua science engineers inc.

ENVIRONMENTAL PROTECTION

99 OCT -8 PM 2:27

October 6, 1999

LOP 1247

WORKPLAN
for an
ADDITIONAL SOIL AND GROUNDWATER ASSESSMENT
at
Lerer Brothers Transmission
6340 Christie Avenue
Emeryville, California

10/14/99 Talked to Robert Kitay re: LOP. GW samples only 1) need to verify downgradient direction (SE) 2) notify schedule of work

10/22/99 → started implementing WP

11/4/99 talked to Robert Kitay.

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

1.0 INTRODUCTION

This submittal outlines Aqua Science Engineers, Inc. (ASE)'s workplan for an additional soil and groundwater assessment at the Lerer Brothers Transmission Service property located at 6340 Christie Avenue in Emeryville, California (Figure 1). The proposed site assessment activities were initiated by Mr. Rick Gold of Lerer Brothers Transmission Service to define the downgradient extent of soil and groundwater contamination related to the former underground storage tank (UST) at the site.

2.0 BACKGROUND INFORMATION

One 2,000 gallon steel UST used to store unleaded gasoline was removed from the site in 1988. No verifiable records have been located regarding the UST removal.

On October 9, 1998, ASE drilled five soil borings at the site (Figure 2). Up to 1,400 ppm total petroleum hydrocarbons as gasoline (TPH-G), 25 parts per million (ppm) toluene, 7.1 ppm ethylbenzene and 15 ppm total xylenes were detected in the soil sample collected from boring BH-A. No TPH-G was detected in soil samples collected from the remaining borings above detection limits. Soil samples collected from borings BH-B through BH-D contained one or more benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) compound at concentrations below 1 ppm. None of the BTEX concentrations exceeded US EPA preliminary remediation goals (PRGs) for industrial soil. No methyl tertiary butyl ether (MTBE) was detected in any of the soil samples analyzed.

Groundwater samples collected from borings BH-A, BH-B and BH-C contained BTEX concentrations exceeding California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water. Very low to non-detectable hydrocarbon concentrations were detected in groundwater samples collected from borings BH-D and BH-E further away from the former UST location. No MTBE was detected in any of the groundwater samples analyzed.

In January 1999, ASE installed three groundwater monitoring wells at the site (Figure 3). None of the hydrocarbon or lead concentrations detected in soil samples collected during the installation of these monitoring wells exceeded US EPA PRGs for residential soil. Benzene concentrations detected in groundwater samples collected from monitoring wells MW-1 and MW-2 exceeded DHS MCLs for drinking water. The toluene concentration detected in groundwater samples collected from

monitoring well MW-2 also exceeded the DHS MCL for drinking water. No lead was detected in groundwater samples collected from any of the monitoring wells.

Groundwater samples have been collected from the three site monitoring wells on a quarterly basis. The hydrocarbon concentrations have been generally consistent over this period. The hydrocarbon concentrations are tabulated in Table One. Over this period, the groundwater flow direction has generally been to the south or southeast.

3.0 PROPOSED SCOPE OF WORK (SOW)

ASE's proposed SOW is as follows:

1) Prepare a workplan for approval by the ACHCSA.

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

3) Obtain an access agreement from the neighboring property owner to drill soil borings on the property to the south.

4) Drill two (2) soil borings to approximately 12-feet below ground surface (bgs) at the site. Collect groundwater samples from the borings for analysis.

5) Analyze the groundwater sample collected from each boring at a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020.

6) Backfill the borings with neat cement.

7) Prepare a report detailing the methods and findings of this assessment.

Details of the assessment are presented below.

TASK 1 - PREPARE A WORKPLAN AND HEALTH AND SAFETY PLAN

Based on the site history and the analytical results of the soil and groundwater samples collected during the previous assessment at the site, ASE has prepared a site-specific health and safety plan. A nearby hospital is designated in the site safety plan as the emergency medical facility of

first choice. A copy of the site specific Health and Safety Plan will be present at the site at all times.

TASK 2 - OBTAIN NECESSARY PERMITS

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

TASK 3 - SECURE AN ACCESS AGREEMENT WITH THE NEIGHBORING PROPERTY OWNER

An access agreement will be secured from The Martin Group, the neighboring property owner, to drill soil borings on the property to the south. The Martin Group has stated that they would probably be willing to allow temporary soil borings on their property as long as they are placed in parking spaces and not in entrance driveways. Work would also only be allowed in early morning hours.

TASK 4 - DRILL TWO SOIL BORINGS DOWNGRADIENT OF THE SITE

ASE will drill two soil borings on the neighboring property to the south in the closest locations to the former UST that would be allowable from the neighboring property owner (in closest parking spaces). These locations, shown on Figure 3, are south and southeast of the former UST which cover the potential downgradient range based on the groundwater flow directions calculated during previous quarterly groundwater monitoring events.

The borings will be drilled using a Geoprobe hydraulic sampling rig. The drilling will be directed by a qualified ASE geologist. Undisturbed soil samples will be collected continuously for subsurface hydrogeologic description. Since these borings are drilled in off-site locations, no soil samples will be retained for analysis. The samples will be described by the ASE geologist according to the Unified Soil Classification System. 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.

Groundwater samples will be collected from each boring using a bailer lowered through a temporary casing placed into the boring. The groundwater sample will be decanted from the bailer into a 40-ml volatile organic analysis (VOA) vial, preserved with hydrochloric acid, sealed without headspace, labeled and then placed into an ice chest with wet ice for transport to the analytical laboratory under chain of custody procedures.

All sampling equipment will be cleaned in buckets with brushes and a trisodium phosphate (TSP) or Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums until off-site disposal can be arranged.

TASK 5 - ANALYZE THE GROUNDWATER SAMPLES

The groundwater sample collected from each boring will be analyzed by a CAL-EPA certified analytical laboratory for TPH-G by modified EPA Method 5030/8015 and BTEX and MTBE by EPA Method 8020.

TASK 6 – BACKFILL THE BORINGS WITH NEAT CEMENT

Following the collection of the groundwater samples, the temporary casings will be removed from the borings and the borings will be backfilled with neat cement. The surface at each location will match the surrounding surface material, believed to be asphalt.

TASK 7 - PREPARE A SUBSURFACE ASSESSMENT REPORT

ASE will prepare a subsurface assessment report outlining the methods and findings of this assessment. This report will include a summary of the results, the site background and history, tabulated analytical results, conclusions and recommendations. Formal boring logs, analytical reports, and chain of custody documents will be included as appendices. This report will be submitted under the seal of a California registered civil engineer or geologist.

4.0 SCHEDULE

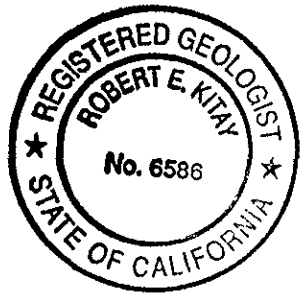
ASE plans to begin field activities immediately upon approval of this workplan by the ACHCSA and as soon as an access agreement can be secured from the neighboring property owner.

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

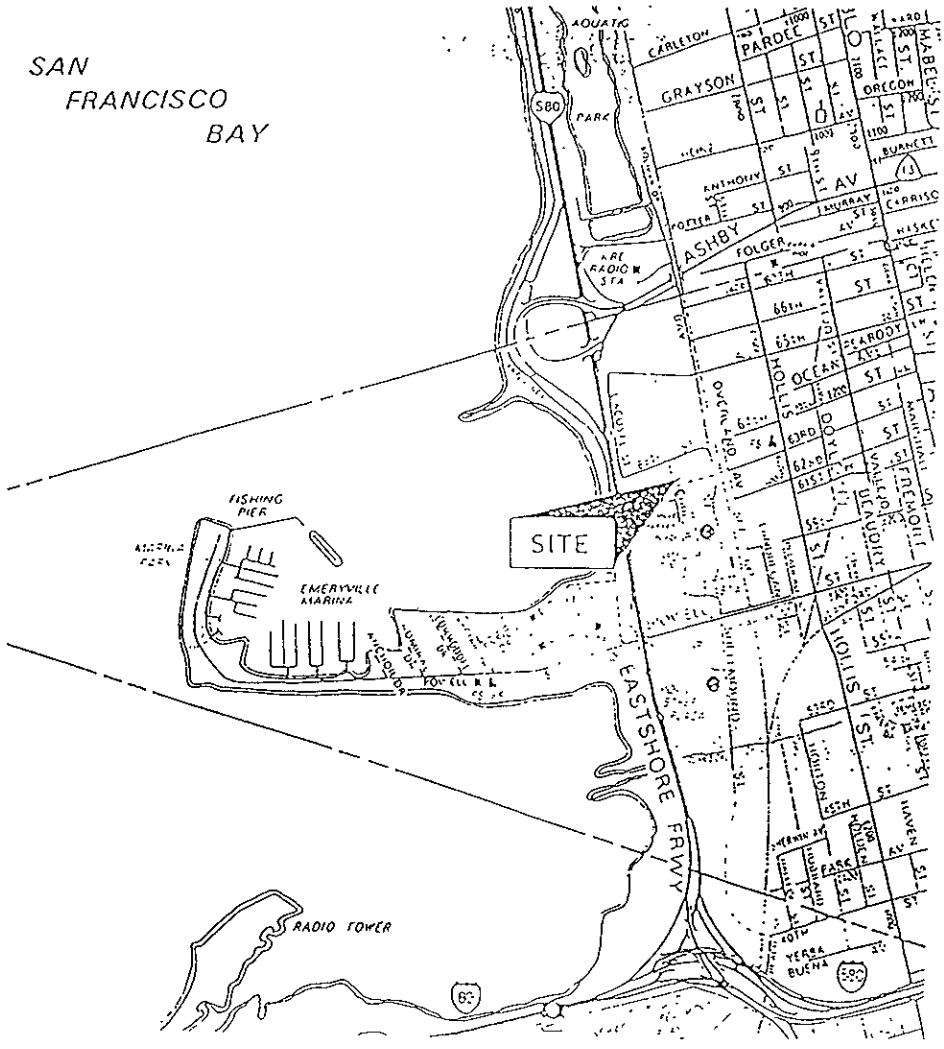
Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, R.G., R.E.A.
Senior Geologist



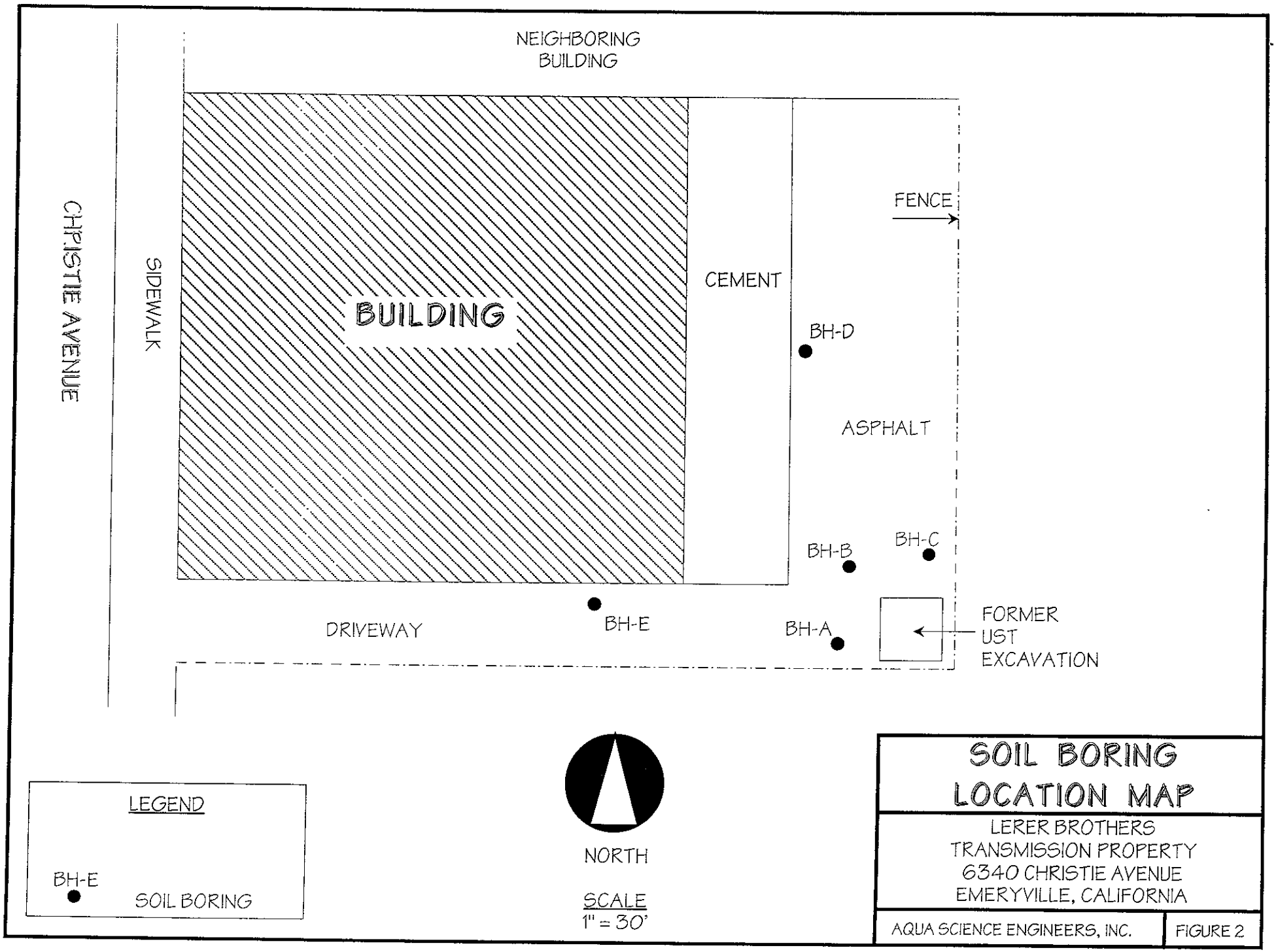
FIGURES



SITE LOCATION MAP

6340 Christie Avenue
Emeryville, California

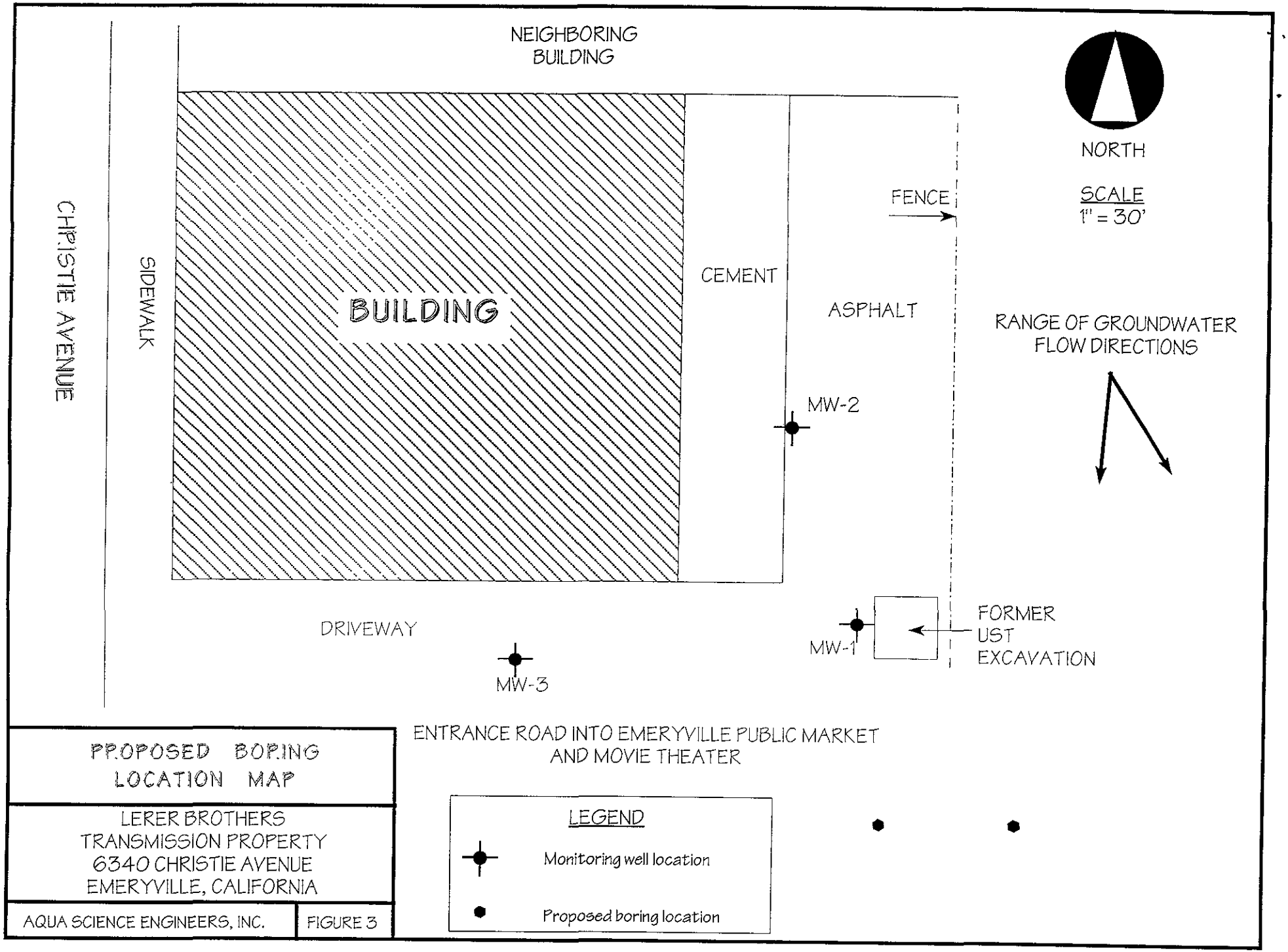
Aqua Science Engineers | Figure 1



SOIL BORING LOCATION MAP

LERER BROTHERS
TRANSMISSION PROPERTY
6340 CHRISTIE AVENUE
EMERYVILLE, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2



PROPOSED BORING LOCATION MAP

LERER BROTHERS
TRANSMISSION PROPERTY
6340 CHRISTIE AVENUE
EMERYVILLE, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 3

TABLES

TABLE ONE

Certified Analytical Results of **GROUNDWATER** Samples
All results are in **parts per billion**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Lead
MW-1							
1-28-99	730	22	3.3	24	61	< 5.0	< 5.0
3-29-99	950	37	5.7	27	60	< 5.0	--
7-20-99	970	40	5 4	67	120	< 5.0	--
MW-2							
1-28-99	710	20	180	14	67	< 5.0	< 5.0
3-29-99	500	8.6	44	4.3	25	< 5.0	--
7-20-99	510	8.4	44	6.0	31	< 5.0	--
MW-3							
1-28-99	< 50*	< 0.5	< 0.5	< 0.5	0.69	< 5.0	< 5.0
3-29-99	130	1.9	8.2	1.4	7.1	< 5.0	--
7-20-99	170	< 0.5	1.9	< 0.5	0.89	< 5.0	--
DHS MCL	NE	1	150	700	1,750	13	15
EPA METHOD	5030/ 8015M	8020	8020	8020	8020	8020	6010

Notes:

* = Hydrocarbons uncharacteristic of gasoline detected in the gasoline range at 68 ppb.
-- = Not analyzed
NE = DHS MCL not established
DHS MCL = California Department of Health Services maximum contaminant level for drinking water.
Non-detectable concentrations noted by the less than sign (<) followed by the laboratory detection limit.