ENVIRONMENTAL AUDIT, INC.®

1000-A ORTEGA WAY • PLACENTIA, CA 92670-7125

714/632-8521 • FAX: 714/632-6754

November 14, 1996

Project No. 1706

Ms. Jennifer Eberle
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

RE: SOIL AND GROUND WATER INVESTIGATION WORK PLAN
Roadway Express, 1708 Wood Street, Oakland, CA
LOP STID 4072

Dear Ms. Eberle:

Reference your letter to Roadway Express dated September 16, 1996 regarding the above-referenced site. As requested in the letter, attached hereto is a Soil and Ground Water Investigation Work Plan for the site prepared by Environmental Audit, Inc. dated November 14, 1996.

Please call me at 714/632-8521, extension 232 or Steve Bright at extension 224, or Cheryl Madden of One Environment at 310/987-1096 if you have any questions or need additional information.

Sincerely,

ENVIRONMENTAL AUDIT, INC.

Edward H. Leonhardt, R.C.E.
Manager, Civil Engineering

attachment

EHL:SAB:sh

cc: Cheryl Madden (two copies)
One Environment
240 Termino Avenue
Long Beach, CA 90803

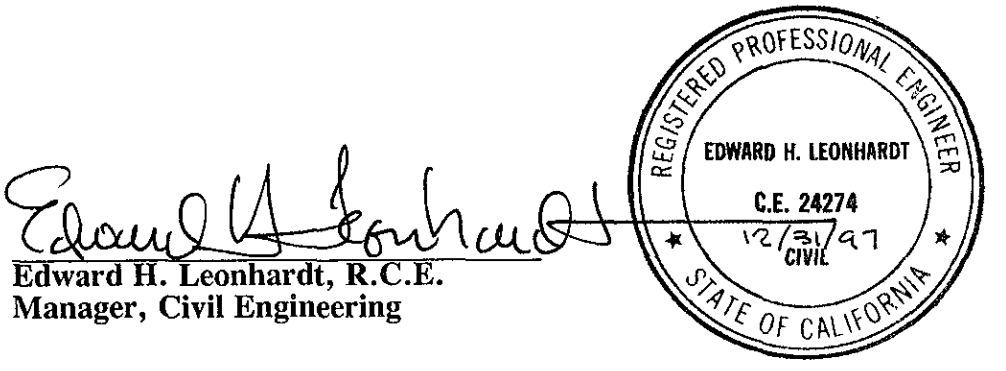
EHL WORD:1706 001

SOIL AND GROUND WATER INVESTIGATION WORK PLAN

Roadway Express, Inc.
1708 Wood Street
Oakland, CA 94607

Project No. 1706

November 14, 1996



Edward H. Leonhardt, R.C.E.
Manager, Civil Engineering

ENVIRONMENTAL AUDIT, INC. ®

Planning, Environmental Analyses and Hazardous Substances Management and Remediation

1000-A ORTEGA WAY
PLACENTIA, CA 92670-7125
714/632-8521

TABLE OF CONTENTS

1.0 INTRODUCTION

Environmental Audit, Inc. (EAI) was retained to prepare a Soil and Ground Water Investigation Work Plan (Work Plan) associated with underground storage tank (UST) systems formerly located at the Roadway Express, Inc. facility, 1708 Wood Street, Oakland, California (Site) (see Figure 1). The purpose of the Work Plan is to describe the proposed subsurface investigation activities that will be completed at the Site to attempt to determine the extent of soil and/or ground water contamination, if any, beneath the former USTs areas. The lead agency overseeing work at the Site related to the UST systems is the Alameda County Health Care Services Agency, Environmental Health Division (Alameda County). Alameda County identifies the Site as LOP STID 4072.

1.1 BACKGROUND

1.1.1 Removed USTs

On July 11, 1996, one 10,000-gallon diesel fuel UST was removed from the Site (see Figure 2). No contaminants were detected in the soil samples collected and tested from the UST excavation following tank removal. However, 11,000 parts per million (ppm) of total petroleum hydrocarbons as diesel fuel (TPH-D) was detected in the sample collected from beneath the dispenser, and 7,400 ppm of TPH-D was detected in the sample collected from the soil excavated and stockpiled as part of the UST removal activities (see One Environment, 1996).

Information provided to EAI indicates that two other USTs (a 10,000-gallon gasoline UST and a 2,000-gallon motor oil UST) were remove from the Site on March 31, 1987 (see Figure 2). The documents indicate that two observation wells were installed in the area where the USTs were formerly located (see Figure 2). Analytical testing results reported in April 1987 indicated:

- No contaminants were detected in the soil samples collected from beneath the former location of the gasoline UST.
- Oil and grease (O&G) concentrations ranging from 610 to 770 ppm were detected in the soil samples collected from beneath the former location of the motor oil UST.
- Volatile hydrocarbons (500 ppm) and O&G (21 ppm) were detected in water samples collected from the observation wells.

1.1.2 In-Place Closed USTs

Two additional USTs (a 10,000-gallon UST of unknown service, and a 2,000-gallon waste oil UST) were reportedly closed in-place at the Site by filling the USTs with a sand slurry grout. ~ 1987 No problematic concentrations of contaminants reportedly were encountered in the soil samples collected from three borings drilled around the perimeter of these two USTs.

1.2 SCOPE

Alameda County, in its letter to Roadway Express, Inc. regarding the Site dated September 16, 1996, requested that additional assessment work be completed in the area where the three removed USTs were formerly located (see Figure 2). No additional work was requested in the area which contains the two in-placed closed USTs.

The scope of the proposed investigation described herein consists of:

- Drilling and sampling six drive point borings in the area of the Site that formerly contained three USTs (i.e., the two USTs removed in 1987 and the one UST removed in 1996).
- Collecting ground water samples from the drive point borings.
- Checking the condition of the one existing on-site well and collecting a ground water sample from this well, if the well is in a condition to allow for such sampling.
- Analytically testing soil and ground water samples for constituents known to have been stored in the USTs.
- Preparing a report presenting the findings of the investigation, including recommendations for additional action, should they be required.

2.0 PROPOSED FIELD WORK

All work will be completed under the supervision of a California registered civil engineer or registered geologist experienced in conducting hydrogeologic investigations. A Health and Safety Plan also will be prepared for Site assessment activities.

A bound field notebook with numbered pages will be maintained to record project information, e.g., sample locations, and date and time of work activities. Field logs, e.g., boring and ground water sampling logs, will be used in consort with the project notebook.

2.1 DRILLING AND SOIL SAMPLING

Six borings will be advanced in the area which formerly contained the three USTs as approximately shown on Figure 2. The precise locations of the borings will be determined in the field and may change slightly based on the presence of underground or overhead utilities or obstructions, if any. All borings will be advanced using Geoprobe Systems subsurface sampling equipment. Permits to advance the borings will be obtained from the Alameda County Flood Control District. All borings will be logged in accordance with the Unified Soils Classification System and will contain, at a minimum, the following information:

- Name of client.
- Location of boring.
- Identification of boring.
- Boring diameter.
- Start and completion time(s) and date(s).
- Name of drilling contractor.
- Name of driller.
- Make and model of drilling equipment.
- Name of person logging the boring.
- Project number.
- Elevation reference.
- Sampling intervals.
- Depth to ground water, if encountered.
- Complete and detailed description of the materials penetrated.
- Results of any field screening/testing of materials, e.g., soil vapor readings.
- As built drawings of wells, piezometers or other devices installed in the borehole.
- Any other pertinent information such as problems encountered during drilling, odors, etc.

Geoprobe uses hydraulics to force a probe-drive sampler into the soil. Unlike split-spoon samplers used in hollow stem auger drilling, the probe-drive sampler (containing a plastic sample liner), remains sealed while it is pushed or driven into the soil to the desired sampling depth. A piston stop-pin at the trailing end of the probe-drive sampler is removed by means of extension rods inserted down the inside diameter of the probe rods after the sampler has been driven to depth. This enables the piston to retract into the sample tube and liner as it is displaced by soil while the sample is being taken. The probe rods are then retracted from the hole to recover the soil sample contained in the sample liner.

The first boring will be continuously sampled from ground surface to approximately 10 feet below the depth at which ground water is first encountered. The depth to ground water beneath the Site is reportedly encountered at about five feet below ground surface (bgs). The remaining borings will be advanced to ground water. Soil samples for analytical testing will be collected from each boring at one foot bgs and at the soil water interface.

Soil samples will be collected in a plastic liner mounted within the sampling tube of the probe-drive sampler. After sample recovery, the ends of the selected portion of the soil-column/liner will be covered with plastic caps and sealed using tape. Each sample will be labeled with a unique sample point identification (e.g., B-1 @ 5'), project number, client name, time and date, and preservatives add, if any, and immediately placed into an ice chest chilled using ice or frozen blue ice. The samples will be kept chilled until delivered to the laboratory for analytical testing. All samples will be logged on a chain-of-custody record form (see Form 1).

A HNU Model DL-101 Photoionizer (PID) calibrated against an isobutene gas standard, or equivalent instrument, will be used on the soil contained in the cutting shoe at the bottom of the probe-drive sampler, at each sampling interval within the borings, to determine if volatile hydrocarbon vapors are emanating directly from the soil. Each sample will be placed in an air tight "Ziploc" plastic bag. The samples will be allowed to sit in the sun for approximately five

minutes and then the head space in the bags will be analyzed using the PID. The results of this field testing will be recorded on the boring logs.

2.2 GROUND WATER SAMPLING

2.2.1 Drive Point Borings

Ground water samples from each drive point boring will be obtained using a screened stainless steel ground water sampler attached to the end of the probe. The stainless steel screen will be inserted across the top of the water table allowing ground water to enter the probe. After the ground water level in the probe tube equilibrates, a length of sterile plastic tubing equipped with a check valve at the intake end will be lowered into the probe. Ground water samples will then be obtained by manually forcing ground water through the check valve into the plastic tube. The ground water samples will then be transferred from the plastic tubing into 40 milliliter volatile organic analysis (VOA) vials with Teflon septa-lined lids and one-liter bottles. Each vial will be completely filled so that no head space exists between the sample and the lid. The samples will be labeled, handled and transported as described in Section 2.1.

2.2.2 Existing Observation Wells

Ground water samples will be collected from the two existing observation wells, if their condition is such that samples can be obtained. Prior to conducting any purging or sampling activities, depth measurements to fluid levels, e.g., free-product (should any be present) and ground water will be recorded using an interface probe accurate to 0.01 foot. The measurements will be obtained from a known point located either at the top of the well casing or well cover. Information associated with the sampling will be recorded on a Ground Water Sampling Log Form (see Form 2).

If free-product is present in a well, no ground water sample will be collected for analytical testing. A sample of the free-product will be collected that is indicative of the thickness of the free-product within the well, using a disposable bottom bailer. The sample will be sealed in VOA vials and one-liter bottles.

Prior to sampling, the wells will be purged of three to four well casing volumes of water using a down-hole pump or bailer. Temperature, conductivity, turbidity and pH readings will be recorded to evaluate the effectiveness of purging activities (see Form 2). The water samples will be collected from just below the water surface using Voss Technologies disposable bottom bailers equipped with volatile organic compound sampling tips. Use of disposable bailers precludes the potential for cross contamination. The samples will be sealed in VOA vials and one-liter bottles. Each vial will be completely filled so that no head space exists between the sample and the lid. The samples will be labeled, handled and transported as described in Section 2.1.

2.3 EQUIPMENT DECONTAMINATION

All down-hole boring equipment used to advance the borings and down hole equipment used to purge and samples borings/wells, will be decontaminated prior to each event by the following procedure:

- The equipment will be washed/flushed in a solution of Alconox detergent and tap water;
- The equipment will be washed/flushed with tap water; or
- The equipment will be stem cleaned.

2.4 EFFLUENT MANAGEMENT

All effluent generated by the investigation will be sealed in labeled 55-gallon drums. The drums will remain on the Site pending the results of the analytical testing, at which time the appropriate disposal method(s) will be determined.

2.5 QUALITY ASSURANCE/QUALITY CONTROL

In addition to the quality assurance and quality control procedures previously described herein, the following two types of blanks will be prepared and tested to determine if sample collection and handling procedures affected the quality of the samples:

- Trip Blank: Three VOA vials will be filled with distilled water on the day that drilling and ground water sampling activities will occur. The sample will be carried unopened during the sampling trip in the project ice chest.
- Equipment Blank: After decontamination of the equipment used to advance the borings (see Section 2.3), the equipment will be flushed with distilled water and the distilled water collected in three VOA vials.

The blanks will be handled in a manner identical to the samples collected in the field. The laboratory will not be informed that the samples are blanks.

3.0 PROPOSED ANALYTICAL TESTING

All analytical testing will be completed by a State of California certified hazardous waste testing laboratory. The laboratory will be certified for all tests proposed as part of the investigation.

3.1 SOIL SAMPLES

The soil samples will be tested for TPH-D and total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015, benzene, toluene, xylenes and ethylbenzene (BTXE) by EPA Method 8020, and O&G by SM Method 5520 D&F. If O&G is detected in soil at or above 100 ppm, then at least one of these samples will be tested for halogenated volatile organic compounds (HVOCs) by EPA Method 8010 and semi-volatile organic compounds (SVOCs) by EPA Method 8270.

3.2 GROUND WATER SAMPLES

The ground water samples will be tested for TPH-D and TPH-G by modified EPA Method 8015, BTXE by EPA Method 8020, and O&G by SM Method 5520 B&F. If O&G is detected in ground water at or above 10 ppm, then at least one of these samples will be tested for HVOCs by EPA Method 601 and SVOCs by EPA Method 625.

4.0 PROPOSED PROCEDURE

Once Roadway Express, Inc. has received written Alameda County approval of this Work Plan, the actions to be implemented are as follows:

- Obtain requisite permits to complete the work.
- Mark sample locations on the ground surface and contact Underground Service Alert to obtain clearance for subgrade utilities.
- Complete the field work.
- Complete analytical testing.
- Complete and submit a report to Alameda County documenting the work completed.

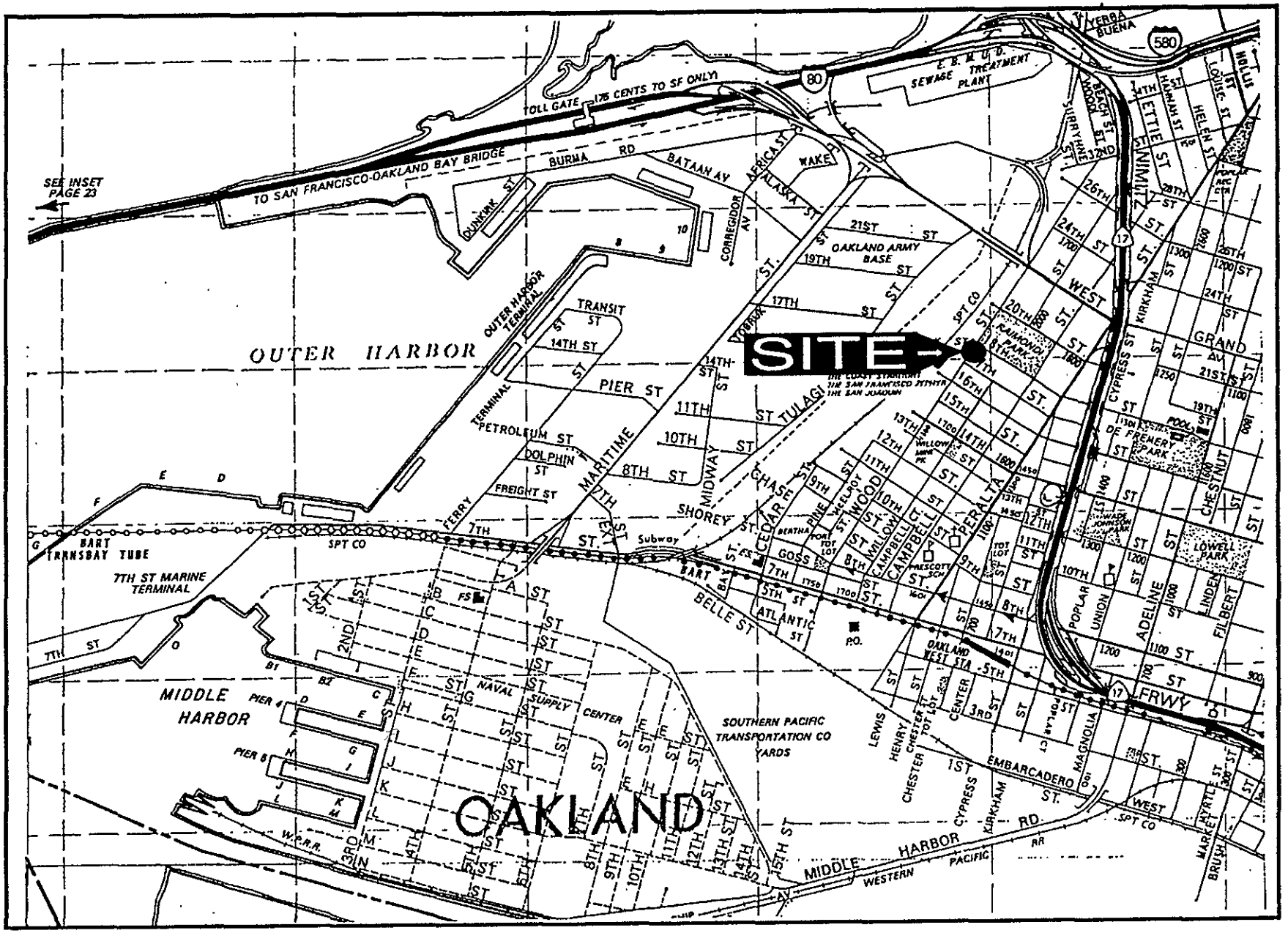
The report documenting the results of the work will be submitted within 60 days of receipt of written approval of the Work Plan.

5.0 REFERENCES CITED

One Environmental, "Report on Underground Storage Tank Removal and Site Closure, Roadway Express, Inc., 170 Wood Street, Oakland, CA 94607," dated July 22, 1996.

EHL:SAB:sh

EHL:WORD:1706-WP



ENVIRONMENTAL AUDIT, INC.

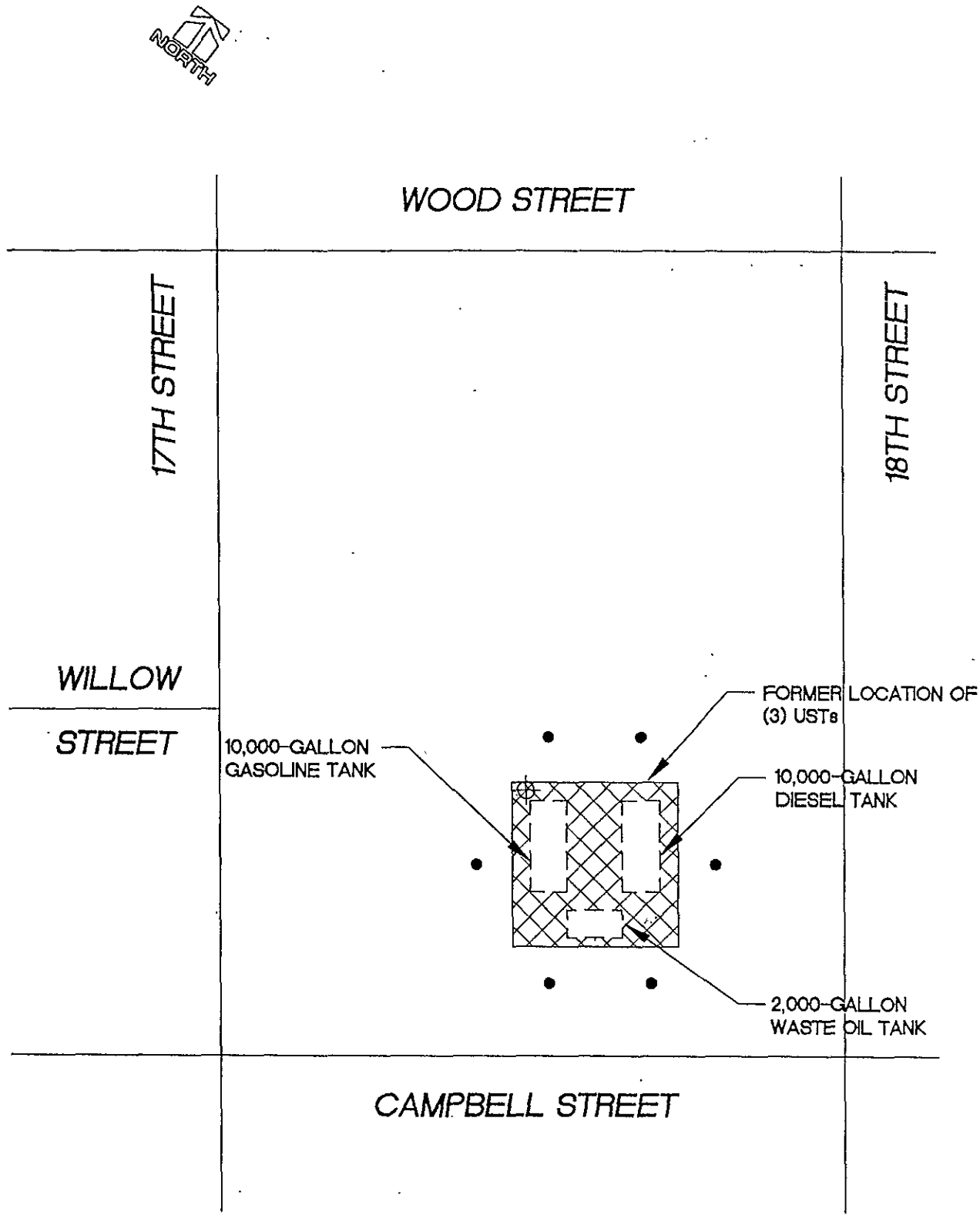
VICINITY MAP
1708 WOOD STREET
OAKLAND, CA

N

Figure 1

Project No. 1706

K:\1706/1706-LM.CDR



LEGEND:

- ● PROPOSED SOIL BORING
- ⊕ OBSERVATION WELL

NOT TO SCALE

ENVIRONMENTAL AUDIT, INC.
1000-A ORTEGA WAY • PLACENTIA, CA 92670-7125
714/632-8521 • FAX: 714/632-6754

SITE PLAN

DRAWN BY: M.C.	DATE CREATED: 10/15/96
CHECKED:	LAST REV: 10/16/96
SIZE: 8.5 x 11	FIGURE: 2
FILE NAME: I:\MISC\RWAYEX	

1708 WOOD STREET
OAKLAND, CALIFORNIA

Job No. 1706

ENVIRONMENTAL AUDIT, INC.®

Planning, Environmental Analyses and Hazardous Substances Management and Remediation

1000 ORTEGA WAY, SUITE A
PLACENTIA, CA 92670-7125

☎ (714) 632 - 8521
FAX (714) 632 - 6754

Chain of Custody Record

SAMPLING REQUIREMENTS: RCRA ☐ NPDES ☐ SDWA ☐ _____ ☐

WRITTEN QC REPORT
ROUTINE QC ☐
RWQCB QC ☐

TURNAROUND TIME:
SAME DAY ☐ 24hr ☐ 48hr ☐ NORMAL ☐

PROJECT NO.	PROJECT NAME

SAMPLER (Signature with Printed Name)	PROJECT MANAGER

SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION	CONTR TYPE: GLASS	PLASTIC	BRASS/ SS TUBE	ANALYSES REQUESTED: TPH-D 8015M	TPH-G 8015M	TRPH 418.1	BTEX 8020	VOC 8240	EOC 8270	OIL & GREASE	CAM METALS TOT WET	LEAD	HVOC 8010	NUMBER OF CONTAINERS	REMARKS

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature/Name)	DATE/TIME	RECEIVED BY: (Signature/Name)	RELINQUISHED BY: (Signature/Name)	DATE/TIME	RECEIVED BY: (Signature/Name)
RELINQUISHED BY: (Signature/Name)	DATE/TIME	RECEIVED BY: (Signature/Name)	RELINQUISHED BY: (Signature/Name)	DATE/TIME	RECEIVED BY: (Signature/Name)

SAMPLES SHIPPED VIA.	SHIPPED BY: (Signature/Name)	COURIER: (Signature/Name)	RECEIVED FOR BY: (Signature/Name)	DATE/TIME
FEDEX ☐ UPS ☐ AIRBORNE ☐				
HAND ☐ AIRFREIGHT ☐ _____ ☐	AIRBILL #:		LAB:	

Form 1

GROUND WATER Sampling Log

Environmental Audit, Inc.®
Planning, Environmental Analyses and Hazardous Substances Management and Remediation
1000 ORTEGA WAY, SUITE A
PLACENTIA, CA 92670-7125
☎ (714) 632 - 8521
FAX (714) 632 - 6754

DATE:	
PROJECT NO.:	
CLIENT:	
WELL NO.:	
WELL DIAMETER (INCHES):	
SAMPLED BY:	

WELL PURGING INFORMATION

ONE CASING VOLUME OF WATER CALCULATED USING THE FOLLOWING:

WELL VOLUME FACTORS	
WELL CASING ID (inches)	VOLUME FACTOR
2.0	0.16
4.0	0.65
6.0	1.47

TOTAL DEPTH OF WELL (ft.) — DEPTH TO WATER LEVEL (ft. bgs) — DEPTH TO FREE PRODUCT (ft. bgs) → ____ X WELL VOLUME VOLUME FACTOR = ____ ONE CASING VOLUME OF WATER (GALLONS)

PURGE TIME (hrs.): START ____ STOP ____

METHOD: DOWN HOLE PUMP ☐ DEDICATED PUMP ☐ BAILER ☐ OTHER ☐

TYPE/MODEL: ____

GALLONS PURGED	TEMP (°F)	CONDUCTIVITY (Micro-ohms/cm) x 10^3	pH	TURBIDITY (NTU)	REMARKS

WELL SAMPLING INFORMATION

TIME SAMPLED (hrs.): ____

METHOD: DOWN HOLE PUMP ☐ DEDICATED PUMP ☐ BAILER ☐ OTHER ☐

TYPE/MODEL : ____

COMMENTS: ____