

Hello Barry.

In hand delivering the enclosed Revised Work Plan and realize I didn't print out the cover letter.

Throw the first submitted away to avoid confusion. I rewrote the WP.

Also call me upon review, as I mentioned before its' an escrow site and I want to schedule drills

~~ASAP.~~

Alameda County

NOV 18 2003

Environment & Planning

Barry

Harry Mawhinney

510 385 4308

H.MawhinneyETS@acl.com



# **ENVIRONMENTAL TECHNICAL SERVICES**

AN ENVIRONMENTAL CONSULTING FIRM

(800) 200-4ETS

20301  
—

REVISED

**A WORK PLAN  
FOR A LIMITED SITE ASSESSMENT  
IN THE AREA OF A FORMER  
500-GALLON GASOLINE UNDERGROUND STORAGE TANK**

*Beneath the site at:*

**1115 21<sup>st</sup> STREET  
OAKLAND, CALIFORNIA 94607**

**Alameda County**

NOV 18 2003

Environmental Health

NOVEMBER 2003

## **1.0 INTRODUCTION**

The following work plan, prepared in response to a pending real estate transaction, describes the proposed method of soil boring advancement, sample collection, and analyses, in the area of one former 500-gallon gasoline underground storage tank (UST), beneath the site at 1115 21<sup>st</sup> Street, Oakland, California. The site location is shown in the map of Figure 1. (Appendix A). The 500-gallon gasoline underground storage tank (UST) was removed from the subject site on November 11, 1993.

The Subject Site is located at 1115 21<sup>st</sup> and 2015 Chestnut Street, on the southwest side of 21<sup>st</sup> Street and on the northwest side of Chestnut Street in the City of Oakland. The subject site is located approximately 1-mile northwest of Highway 980 and approximately 1-mile southeast of the San Francisco Bay.

The purpose of the investigation is to attempt to determine the lateral and vertical migration, if any, of known contaminants in soil and ground water.

### **1.1 Subject Property Setting**

The subject property located in the western portion of the City of Oakland in the San Francisco Bay Area occupies a broad alluvial valley that slopes gently northward toward the San Francisco Bay and is flanked by alluvial fans deposited at the foot of the Diablo Range to the east and the Santa Cruz Mountains to the west.

The subject site is located approximately 1.25-miles west of Lake Merritt, a tidally influenced lake. Surface topography on and in the immediate vicinity of the subject property is almost flat.

### **1.2 Geologic and Soil Conditions**

Materials underlying the site area are Quaternary-age sediments consisting of unconsolidated gravels, sands, and silts with interbeds of fine-grained floodplain clay deposits that form aquitards. Beneath these sediments, are older fine to coarse-grained sandy sediments (Lake Merritt Sand) deposited by erosion and alluvial deposition from the nearby upland surfaces. Bedrock at an estimated depth of less than 250-feet beneath the sediments consists of Jurassic-aged sedimentary rocks of the Franciscan Formation.

### **1.3 Groundwater Conditions**

The subject site is located on the San Francisco Bay plain in the northernmost part of the Santa Clara Valley Groundwater Basin, (RWQCB, 1986), the surface of which slopes gently down toward the San Francisco Bay. The regional groundwater flow follows the topography, moving from areas of higher elevations to areas of lower elevation. The regional groundwater flow direction in the area of the subject property is estimated to be toward the west.

## 2.0 PREVIOUS ENVIRONMENTAL HISTORY

### 2.1 Removal of 500-Gallon Gasoline Underground Storage Tanks

A 500-gallon gasoline underground storage tank (UST) was removed from the subject site on November 11, 1993. A soil sample, designated as BP-1, was collected from beneath the former UST. The analytical results indicated Total Petroleum Hydrocarbons as gasoline (TPHg) at 630 mg/Kg, Benzene 600 ug/Kg, Toluene 770 ug/Kg, Ethyl Benzene 940 ug/Kg, Total Xylenes 2.5 ug/Kg and Lead 6.6 mg/Kg. Two samples, designated as SP-1 and SP-2, were collected from the stockpiled soil. Analytical results are presented in Table I.

**TABLE I**  
**Original Removal of One 500-Gallon Gasoline UST**  
**November 23, 1993**

Sample ID	TPHg (mg/Kg)	Benzene ( $\mu$ g/Kg)	Toluene ( $\mu$ g/Kg)	Ethyl-Benzene ( $\mu$ g/Kg)	Total Xylenes ( $\mu$ g/Kg)	Lead (mg/Kg)
BP-1	630	600	770	940	2500	6.6
SP-1	ND	ND	ND	ND	ND	7.0
SP-2	22	21	27	33	85	3.2
Detection Limit	1.0	5.0	5.0	5.0	5.0	1.0

ND = Non Detect for constituent analyzed.

### 2.2 Attempt to Excavate Contaminated Soil

On May 6, 1994, Tank Protect Engineering attempted to remove soil impacted with TPHg and BTEX. Analytical results indicate the excavation was successful with the exception of the tank pit wall adjacent to 21<sup>st</sup> Street. The laboratory analyses reported Total Petroleum Hydrocarbons as gasoline (TPHg) at 290 mg/Kg, Benzene 2.8 mg/Kg, Toluene 5.8 mg/Kg, Ethyl Benzene 6.0 mg/Kg, and Total Xylenes 38 mg/Kg.

Analytical results are presented within Table II.

### 2.3 Associated Dispenser and Product Lines

Records addressing the collections of samples beneath the dispenser and product lines have not found.

**TABLE II**  
**Over Excavation of Tank Pit**  
**May 6, 1994**

<b>Sample ID</b>	<b>TPHg (mg/Kg)</b>	<b>Benzene (mg/Kg)</b>	<b>Toluene (mg/Kg)</b>	<b>Ethyl-Benzene (mg/Kg)</b>	<b>Total Xylenes (mg/Kg)</b>	<b>Lead (mg/Kg)</b>
VSP-1 (10')	290	2.8	5.8	6.0	38.0	NA
VSP-2 (10')	ND	ND	ND	ND	ND	NA
VSP-3 (11')	ND	ND	ND	ND	ND	NA
VSP-4 (10')	ND	ND	ND	ND	ND	NA
VSP-5 (10')	ND	ND	ND	ND	ND	NA

ND = Non Detect for constituent analyzed.

### **3.0 SCOPE OF SERVICES**

This work plan describes a limited site assessment to be performed in the area of one former 500-gallon gasoline underground storage tank (UST) and beneath the associated dispenser and product lines. The purpose of the assessment is to attempt to determine the lateral and vertical migration of contamination, if any, in soil and groundwater.

#### **3.1 Site Investigation**

The assessment will be accomplished by advancing one to four soil borings to a total depth of 3.0' below groundwater. Soil and/or groundwater samples will be collected and analyzed. Groundwater depth is anticipated to be approximately 10' below ground surface (bgs).

The number of soil borings, their location, and sample collection will be based upon field monitoring i.e.; Gastech Model 1314 readings, odor and discoloration. The exploratory borings investigating the former tank pit area will be designated as XVSP-1, FB-1, and FB-2. Borings investigating the former dispenser and product lines will be designated as DISP. and PL respectively.

##### **3.11 Former Tank Pit**

One exploratory soil boring (XVSP-1) will be placed in the north wall of the former tank pit (location of over excavation confirmatory sample VSP-1). Soil and groundwater samples will be collected and analyzed.

Should indications of contamination be present in soil or groundwater additional soil borings will be advanced as follows: Boring FB-1 will be placed north of and within 10' of sample XVSP-1; and an additional boring FB-2 will be placed 30' west (assumed down gradient flow) of the former tank pit. Water samples will be collected and analyzed. Soil samples will be collected and analyzed if hydrocarbon vapors, odor, or discoloration are encountered above the vadose/saturated capillary zone.

##### **3.12 Dispenser, Product Lines**

One exploratory soil boring (#DISP) will be advanced 4' below ground surface (bgs) beneath the former product dispenser. An additional boring (#PL) will be placed beneath the former product line, between the former dispenser and product line, to a total depth of 4' bgs. Soil collected between surface and 4' will be examined for indications of contamination and the worst-case sample analyzed.

### **3.2 Exploratory Soil Borings**

Environmental Control Associates (ECA) of Aptos, California, will be engaged to perform field exploration using direct push Geoprobe® equipment. Two-inch diameter soil probes will be advanced using truck-mounted hydraulic equipment to push and/or hammer, the Geoprobe®, sampler into undisturbed soil. Continuous soil samples will be retrieved in clear plastic liners, so as to allow continuous profiling of the lithologic column. A State Licensed Geotechnical Engineer, using the Unified Soil Classification System, will log the soil profile in the field.

The probes will be advanced to approximately three-feet below first encountered water, to allow for the collection of groundwater samples.

### **3.3 Collection of Soil Samples**

Soil samples will be collected upon encountering native soil (below the backfill), at five-foot intervals thereafter, at changing lithologies, and where indications of contamination are present.

The clear plastic liner will be cut and prepared for transport to an analytical laboratory, based upon field monitoring results. The liner will be cut to a six-inch length, using a clean cutting tool designed specifically for this purpose. Each end of the tube will be covered with a clean Teflon sheet and tightly fitting plastic caps, then labeled with the site project number, date, and time of collection, depth interval, company and sampler ID. Pertinent data will be entered on to the chain of custody (COC) document. The sample will then be placed in a clean cooler, with ice in a plastic container, pending transport to an analytical laboratory.

### **3.4 Field Monitoring**

Soil will be field monitored for odor and discoloration, and hydrocarbon vapor using a Gastech Model 1314, calibrated with hexane for gasoline vapor detection.

### **3.5 Collection of Groundwater Samples**

Groundwater samples will be collected within each probe hole by lowering a clean 1/2-inch stainless steel bailer into the hole, and retrieving a groundwater sample. This process will be repeated and the bailer decanted into two one-liter amber glass bottles and two 40-ml volatile analysis vials (VOAs), to a positive meniscus eliminating headspace.

### **3.6 Decontamination**

Prior to arriving on site the drill rig and all parts that may approach the borings will be decontaminated using a hot pressure wash. All sampling equipment will be decontaminated between samples using an Alconox wash, and two tap water rinses.

### **3.7 Analyses**

Soil samples will be transported to Entech Analytical Laboratory of San Jose, California, a state certified hazardous materials analytical laboratory, under chain of custody.

Selected soil samples and all groundwater samples, will be analyzed for Total Petroleum Hydrocarbons as Gasoline (TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX) and MTBE, using EPA Modified Method 8015/8020/602.

### **3.8 Health and Safety Plan**

A site specific Health and Safety Plan will be prepared to guide the field crew in safely handling potentially hazardous materials, to discuss potential site and work hazards, and to identify the nearest health care facilities. These issues will be discussed in a tailgate safety meeting prior to the initiation of work.

### **4.0 Report**

A report will be prepared documenting work performed, tables of analytical results, laboratory analytical reports, field observations, chain of custodies, soil boring logs, and to-scale diagrams.



## **APPENDIX A - FIGURES**

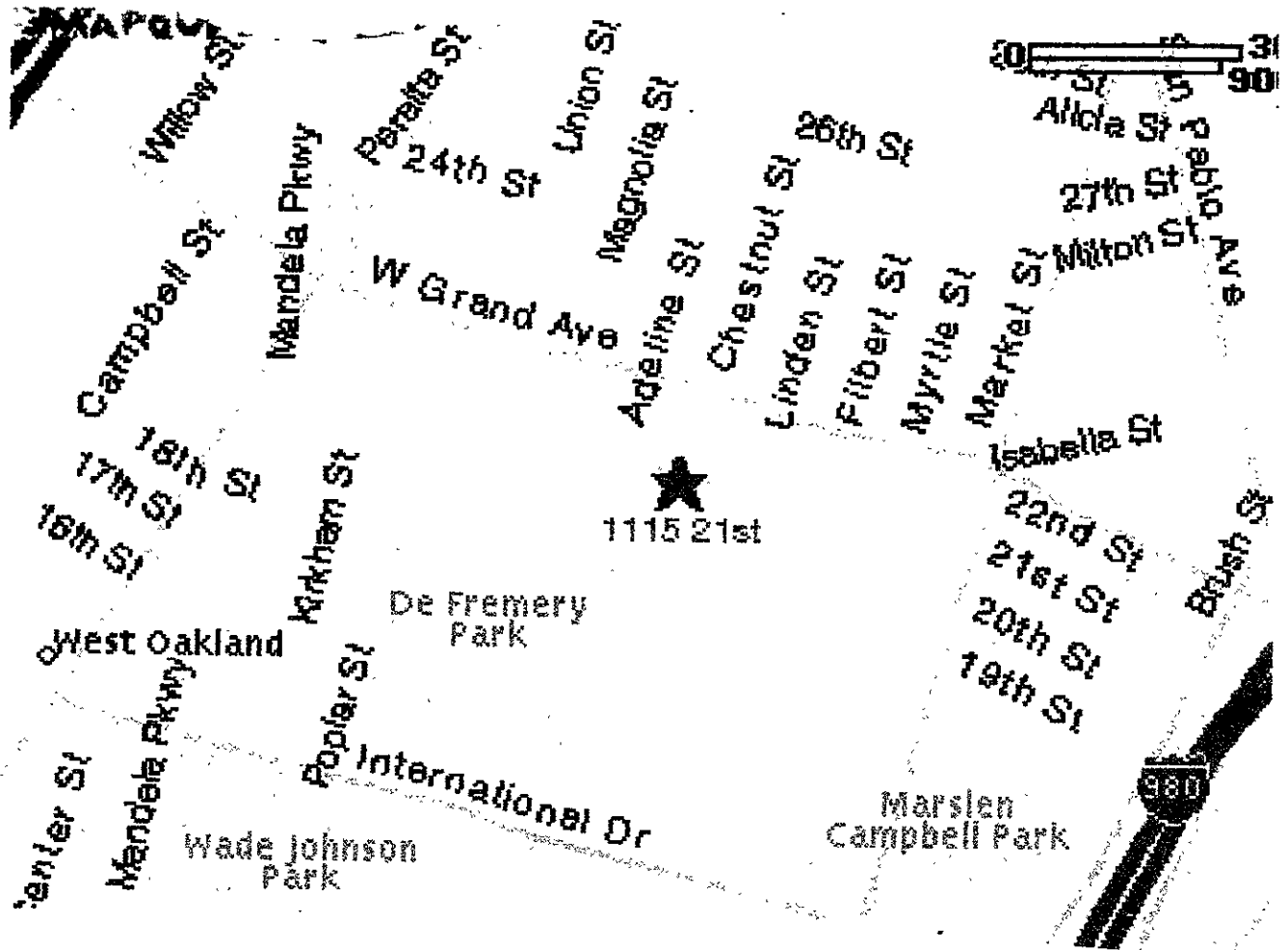
Figure 1. Site Location Map

Figure 2. Location of Former 500-Gallon Gasoline UST

Figure 3. Over Excavation of Tank Pit

Figure 4. Proposed Soil Boring Locations

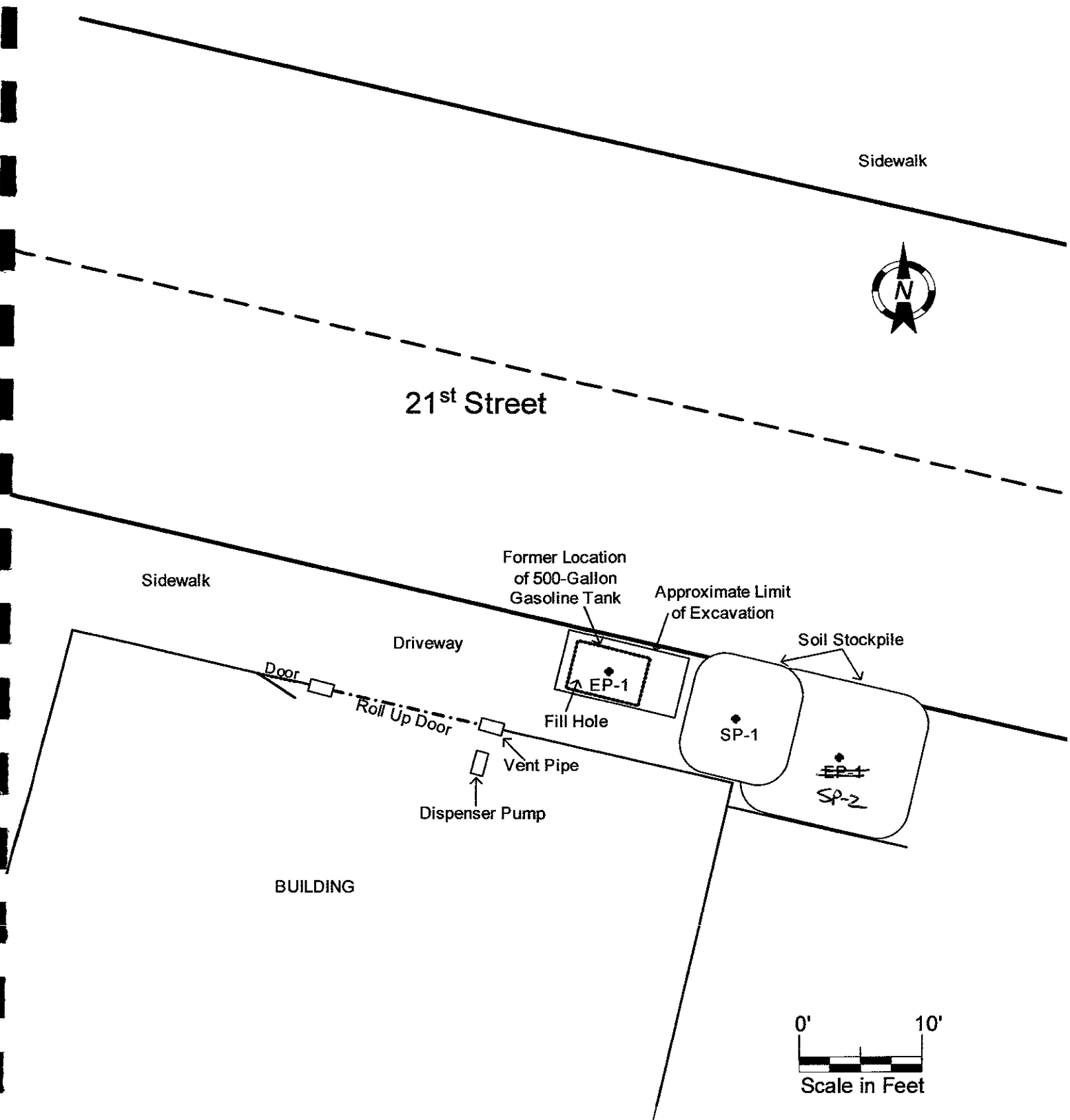
1115 21<sup>st</sup> STREET  
OAKLAND, CALIFORNIA



**Figure 1 - Site Location Map**

**Site Location:**  
1115 21<sup>st</sup> Street  
Oakland, CA 94607

**Environmental Technical Services**  
1548 Jacob Avenue, San Jose, CA 95124  
(408) 267-6427

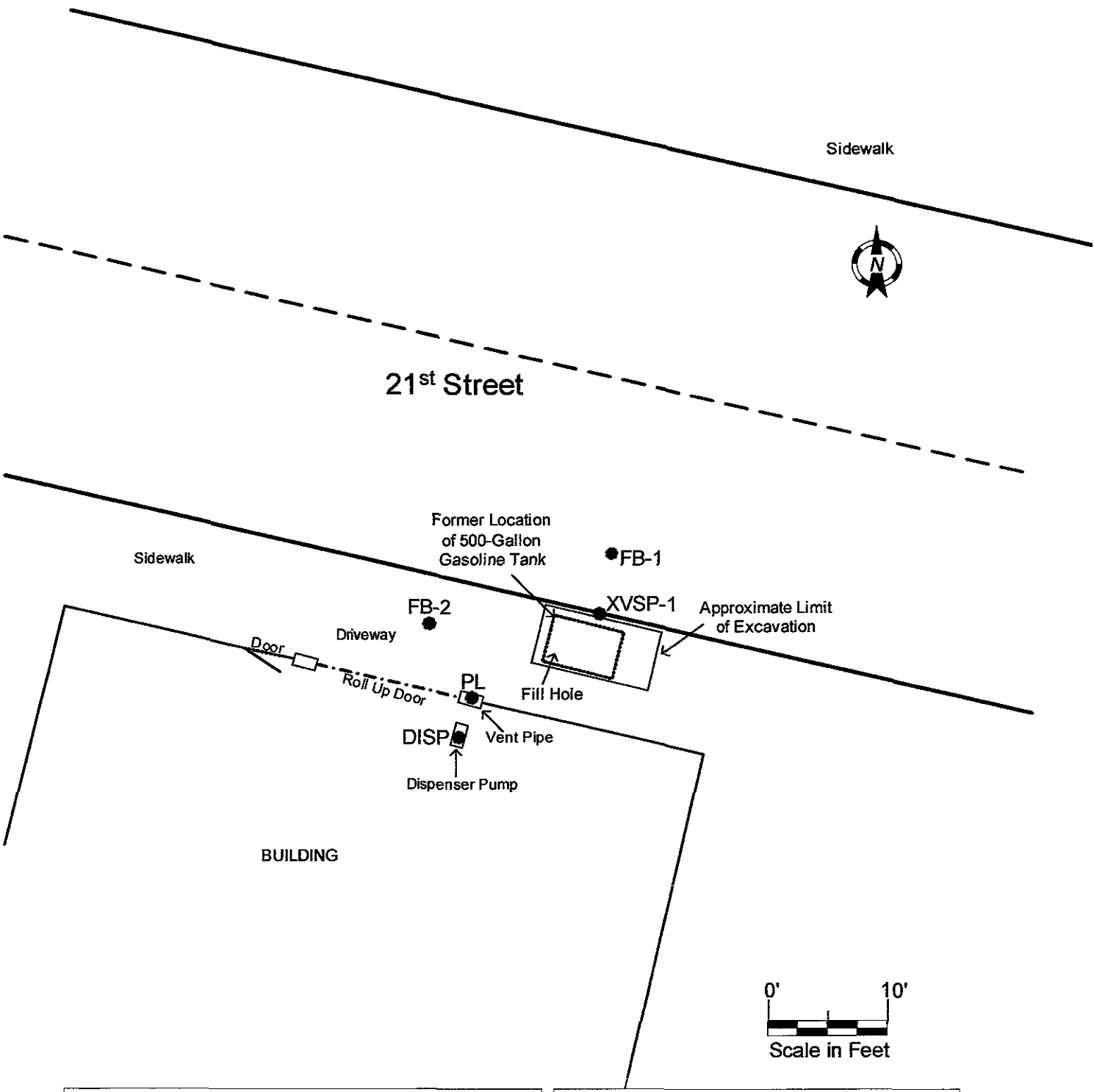


**Figure 2 - Former 500-Gallon Gasoline UST Location and Soil Samples Locations collected on November 11, 1993**

**Site Location:**  
 1115 2<sup>nd</sup> Street  
 Oakland, CA 94607

**Environmental Technical Services**  
 1548 Jacob Avenue, San Jose, CA 95124  
 (408) 267-6427

- Legend:**
- ◆ Location of Soil Sample
  - ▭ Location of Former UST



**Figure 4 - Location of Former 500-Gallon Gasoline UST and Proposed Soil Boring Locations**

**Site Location:**  
 1115 21st Street  
 Oakland, CA 94607

**Environmental Technical Services**  
 1548 Jacob Avenue, San Jose, CA 95124  
 (408) 267-6427

**Legend:**

- Location of Proposed Soil Boring
- Location of Former UST