



# Technology, Engineering & Construction, Inc.

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June 30, 2006

Mr. Barney M. Chan  
Hazardous Materials Specialist  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**SUBJECT:     ADDITIONAL SITE CHARACTERIZATION WORKPLAN**

**SITE:           FORMER SAINT FRANCIS PIE SHOP**  
1125 67th Street,  
Oakland, California  
(Fuel Leak Case RO0002602)

Dear Mr. Chan:

On behalf of Mr. John Buschini (Property Owner), TEC Accutite is pleased to submit this workplan to conduct an additional subsurface investigation at the above listed property. The workplan is in response to findings of the October 2005 investigation, and to address the requests of the Alameda County Environmental Health (ACEH) to investigate petroleum hydrocarbon impacted soil and groundwater beneath the site.

The objective of this work plan is to further evaluate the presence of petroleum hydrocarbons in soil and groundwater beneath the site. The site background and our proposed scope of work are outlined below.

## **SITE DESCRIPTION**

The subject site is located at 1125 67th Street, near the intersection of San Pablo Avenue and 67th Street in Oakland, California (Figure 1). The site consists of a concrete walled, and wooden roof building, occupying approximately 15,000 square feet of a 19,000 square foot lot. Formerly occupied by Saint Francis Pie Shop, Inc., the subject site is now occupied by Rudolph Commercial Interiors, Inc.. A 10,000-gallon gasoline UST used to fuel Saint Francis Pie Shop company vehicles and trucks previously existed onsite. The UST was removed on December 2, 2003. The surrounding area is mostly commercial business with one residential property bordering the west side of the subject site (Figure 2).

## **GEOGRAPHICAL, GEOLOGICAL AND HYDROGEOLOGICAL SETTING**

The site elevation is approximately 40 feet above mean sea level (msl) with a topographic slope towards the west to southwest. The previously conducted soil excavation onsite, the geologic logs generated from drilling conducted by TEC Accutite in 2005 and Baseline Environmental Consultants (Baseline) in 1999 at the neighboring McDonald's site (Figure 2) provide the basis for describing the geologic conditions underlying the site. The site is located on the bay plain deposits of the San Francisco Bay consisting of shallow marine and continental deposits known as the "Bay Mud". Sediments beneath the site consist mainly of interbedded clays and silts ("Bay Mud") up to 35 feet below grade (fbg). A sandy layer was encountered in the borings below the bay mud which is believed to be the upper section of the Merrit Sand.

Water was first encountered in the UST excavation onsite at approximately 7 fbg. Groundwater was encountered in the borings installed on site from 20 to 30 fbg and rose to 6 to 8 fbg. Groundwater was not encountered in Kleinfelder borings installed to a maximum depth of 16.5 fbg on the McDonald's site in 1996. However, during drilling conducted by Baseline on the neighboring McDonald's site, a low yield, potentially intermittent water-bearing zone was encountered at approximately 7 to 10 fbg. According to the Kleinfelder investigation report at the McDonald's site, groundwater near the subject site is confined. This was consistent with TEC Accutite's investigation conducted in October 2005. The groundwater beneath the site flows toward southwest according to the water level measurements from the four temporary piezometers installed at the site during the October 2005's investigation.

The nearest surface water to the subject site is the San Francisco Bay, located approximately ½ mile west of the site. According to the San Francisco Bay Regional Water Quality Control Board, Summary of Groundwater Basin Evaluation, the groundwater management zone under the subject site is classified as a limited drinking water resource. Groundwater in these areas has limited potential to serve as drinking water supply. The basins are shallow, with depths generally less than 300 fbg. While water quality is good, well yields are generally not sufficient for municipal supply.

## **SITE HISTORY**

**December 2003, UST Removal:** On December 2, 2003, TEC Accutite removed a 10,000-gallon fiberglass gasoline UST, associated product piping, and a fuel dispenser at the site. After the UST removal, the soil stockpile generated during the UST removal activities was temporarily placed in the excavation pit pending receipt of analytical results. The laboratory analysis on confirmation soil samples collected from the excavation and soil stockpile contained noticeable concentrations of the fuel additive methyl tertiary butyl ether (MTBE). Concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene, ethyl benzene, toluene, and xylenes (BTEX) were low to non-detect.

A maximum MTBE concentration of 7.06 parts per million (ppm) was detected in a soil sample collected from the north sidewall of the UST excavation (TP-N) and a concentration of 0.238 ppm was detected in the soil stockpile composite sample (SP (1-4)). For more details regarding the UST removal, please refer to TEC Accutite's report dated December 19, 2003.

**February 26, 2004 through May 19, 2004 Groundwater Extraction and Soil Over Excavation:** With the approval of ACEHS, TEC Accutite extracted a total of 5,000 gallons of purge water from the open UST pit excavation and then overexcavated approximately 417.4 tons of gasoline impacted soil from the former UST location and another 85.57 tons of gasoline impacted soil from the former dispenser island and piping trench locations (Figure 2). Confirmation soil samples showed maximum concentrations of TPHg, benzene, and MTBE (29.9 ppm, 0.264 ppm, and 4.69 ppm, respectively) were below the ESLs for the protection of human health and the environment for a commercial/industrial land use scenario where potentially impacted groundwater is not a current or potential drinking water resource.

Analytical results of a grab groundwater sample collected from the UST excavation pit contained TPHg, benzene, and MTBE at concentrations of 4,140 ppb, 37.8 ppb, and 2280 ppb, respectively. In addition xylenes were detected at a concentration of 174 ppb. The TPHg, total xylenes, and MTBE concentrations exceeded the ESLs for the protection of human health and the environment for a commercial/industrial land use scenario where potentially impacted groundwater is not a current or potential drinking water resource.

In a report documenting the above field work, TEC Accutite recommended conducting a Preliminary Site Assessment (PSA) to further define the extent of soil and groundwater impact at the subject site and the adjacent McDonald's site. This recommendation was approved by the ACEH in a regulatory letter dated August 4, 2004.



**October 2005, Preliminary Site Assessment:** In October 2005, TEC Accutite conducted the initial site investigation at the site and advanced seven direct-push borings (B1 through B7). Four of these borings were converted into temporary piezometers. Petroleum hydrocarbons were detected in the soil samples collected from four of the seven locations (B1, B3, B4, and B7) with the maximum concentrations detected at boring B3 located south of the former UST. Petroleum hydrocarbons were detected in the groundwater samples collected from all seven locations with the highest concentrations detected at boring B3 located south of the former UST. TEC Accutite recommended further delineation of the petroleum hydrocarbon impact to soil to the south and north of the former UST location (near borings B-3 and B-7) and installing three groundwater monitoring wells near borings B3, B5, and B7.

This recommendation was approved with comments by the ACEH in a regulatory letter dated May 24, 2006. Presented below is the scope of work to further delineation of the petroleum hydrocarbon impact at the site.

## **SCOPE OF WORK**

TEC Accutite proposes to execute the following tasks to further evaluate petroleum hydrocarbons in soil and groundwater beneath site.

### **TASK #1      PERMITTING, CLEARING UTILITIES AND NOTIFICATIONS**

Upon ACEH approval of this workplan, TEC Accutite will prepare the following pre-field work activities to complete the proposed investigation:

- Obtain a drilling permit from the ACEH to advance the proposed borings and install the proposed monitoring wells at the site.
- Obtain encroachment permit from the Oakland City Department of Public Work since one of borings will be in the public right-of-way (Figure 2).
- Obtain a copy of the Baseline Environmental Report *Passive Gas Sampling and Work Plan for Additional Investigation September 24, 2001*. The detailed gas survey results would guide the additional boring location(s) to the south of boring B3.
- Prepare a Health and Safety Plan outlining all field activities to be conducted during the site characterization activities. A copy of the Health and Safety Plan will be available on-site during all field activities.
- Contact Underground Service Alert (USA) prior to the installation of the soil borings/monitoring wells in order to identify any underground utilities.
- Obtain the services of a subsurface utility locator contractor to clear the locations of the proposed soil borings and monitoring wells of underground utilities.
- Notify the property owner/manager and ACEH at least 72-hours prior to the scheduled drilling activities.

## **TASK #2      PROPOSED SITE INVESTIGATION ACTIVITIES**

### **Installation of Six Soil Borings**

TEC Accutite proposes to advance three soil borings at each target area where elevated petroleum hydrocarbons were detected during the Preliminary Site Assessment (Figure 2). Three soil borings (B8 through B10) will be advanced to evaluate the extent of petroleum hydrocarbon impact in the vicinity of boring B7 (near former dispenser island area). Another three soil borings (B11 through B13) will be advanced in the vicinity of boring B3 to evaluate the extent of petroleum hydrocarbon impact south and west of the former UST area. A total of six borings (B8 through B13) will be drilled. Borings will be terminated at a depth where groundwater is encountered. The maximum boring depth is expected to be up to 35 fbg as indicated from the previous investigation.

Borings B8 through B13 will be advanced using the Geoprobe method. Geoprobe Model 6600 is recommended due to the clayey/silty soil condition. Drilling will proceed by advancing direct push (Geoprobe) rods lined with 4-foot clear acetate tubes into undisturbed sediments at the bottom of the boring. Samples will be logged according to the Unified Soil Classification System (USCS). Soil samples will be screened onsite with the use of a Photo-Ionization Detector (PID) to determine the presence of volatile organic compounds (VOCs). A portion of each soil sample will be placed into a Ziploc bag and left in a warm location where VOCs within the soil can accumulate within the headspace of the Ziploc bag. The PID probe will then be inserted into the Ziploc bag to measure the concentration of VOCs. Prior to field use, the PID will be calibrated according to the manufacturer's specifications.

Approximately two soil samples will be collected from each boring for laboratory analysis. Additional samples will be collected if evidence of hydrocarbon contamination (i.e., stained soil, hydrocarbon odor, or elevated PID readings) is encountered. Soil samples will be covered with Teflon liners and capped. All samples will be labeled, placed on blue ice in an ice chest, and delivered to a California State Certified Laboratory under a chain-of-custody for analysis. Grab groundwater samples will be collected from all borings using a disposable bailer and transferred into three 40-ml HCL preserved VOAs and one unpreserved 1L Amber.

All soil and groundwater samples will be analyzed for the following:

- TPHd by EPA Method 8015
- TPHg, BTEX, MTBE, and oxygenates (EPA Method 8260)

### **Installation of Monitoring Wells**

TEC Accutite proposes to install groundwater monitoring wells to monitor the groundwater conditions (plume migration status) at this site. Because the data going to be collected from borings B8 through B13 will help decide the placement of the well locations, the number and locations of wells will be determined after the completion of the task above (installation of six borings).

Although groundwater was not encountered in the borings at the site until 20 to 30 fbg, groundwater was observed in the former excavation pit where the excavation depth was approximately 12 fbg. TEC Accutite also noted that the shallow screened well MW-1A at the neighboring McDonald's site was dry for a few weeks after installation. Therefore, TEC Accutite suggests to install a shallow temporary well first to observe any groundwater would be encountered or not. An additional test boring (TB) will be advanced by installing 1-inch diameter PVC casing with a 0.010-inch slotted PVC well screen from 5 to 15 fbg.

Based on the findings from the installation of six borings and one temporary well, TEC Accutite will discuss with the ACEH and decide the number and locations of wells to be installed. The final



detailed well construction information (shallow and/or deep) will be provided in a separate document (supplemental workplan).

**TASK #3      WELL ELEVATION SURVEY**

Monitoring wells will be surveyed for elevation control by a State of California licensed surveyor. The survey data will include horizontal and vertical position relative to North American Datum of 1983 (NAD83), and National Geodetic Vertical Datum of 1988 (NGVD88), respectively.

**TASK #4      REPORT PREPARATION AND REGULATORY LIAISON**

TEC Accutite will prepare a detailed report summarizing all field activities and analytical findings. A copy of the report will be submitted to the ACEH and the client.

**TASK #5      QUARTERLY GROUNDWATER MONITORING**

TEC Accutite proposes to conduct quarterly groundwater sampling for four quarters for a complete hydraulic cycle after well installation. All groundwater samples will be analyzed for the following:

- TPHd (EPA Method 8015)
- TPHg, BTEX, MTBE, and oxygenates (EPA Method 8260)

TEC Accutite would like to conduct groundwater monitoring and sampling activities to coincide with groundwater monitoring of adjacent McDonald site at 6623 San Pablo Avenue, Oakland. TEC Accutite is hoping that the ACEH can issue a request to the consultant at neighboring McDonald's site to express TEC Accutite's wishes. A quarterly groundwater sampling report summarizing field activities and analytical results will be submitted to the ACEH and the client. Following completion of the fourth quarter sampling episode, TEC Accutite will prepare a Site Conceptual Model, Task #6.

**TASK #6      SITE CONCEPTUAL MODEL**

Following the fourth quarter groundwater monitoring episode, TEC Accutite will develop a Site Conceptual Model (SCM) in accordance with the State Water Resources Control Board (SWRCB) "Guidelines for Investigation and Cleanup of MTBE and other Ether-Based Oxygenates" as outlined in the final draft dated April 7, 2000. The SCM is a summary of known environmental conditions regarding the site, historic fuel releases, hydrogeologic and geologic conditions, and other aspects that are relevant to understanding the potential risk posed by hydrocarbons at the site.

**SCHEDULE OF ACTIVITIES**

TEC Accutite will begin permitting after receiving written approval of this workplan from the ACEH and the budget approval from the client. Upon receiving the permits from the ACEH, TEC Accutite will implement the workplan within 90 days and prepare a subsurface investigation report documenting the activities within 60 days.

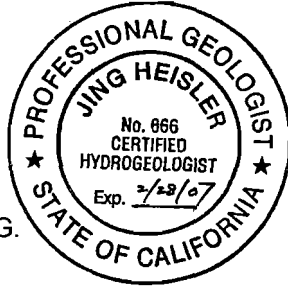


TEC Accutite would like to thank you in advance for your assistance and prompt attention to this matter. Please feel free to call the undersigned at (650) 616-1200 if you have any questions or comments.

Sincerely,  
**TEC ACCUTITE**



Jing Heisler, P.G., C.H.G.  
Project Manager



Nicholas B. Haddad  
V.P., Environmental

Figures:           1 - Vicinity Map  
                      2- Proposed Soil Boring Locations

cc:       Mr. John Buschini, 1260 Shell Circle, Clayton, California 94517



**References**

ACEH (2006) *Fuel Leak Case RO0002602, St. Francis Pie Shop, 1125 67<sup>th</sup> St., Oakland, 94608*, Alameda County Environmental Health, May 24, 2006.

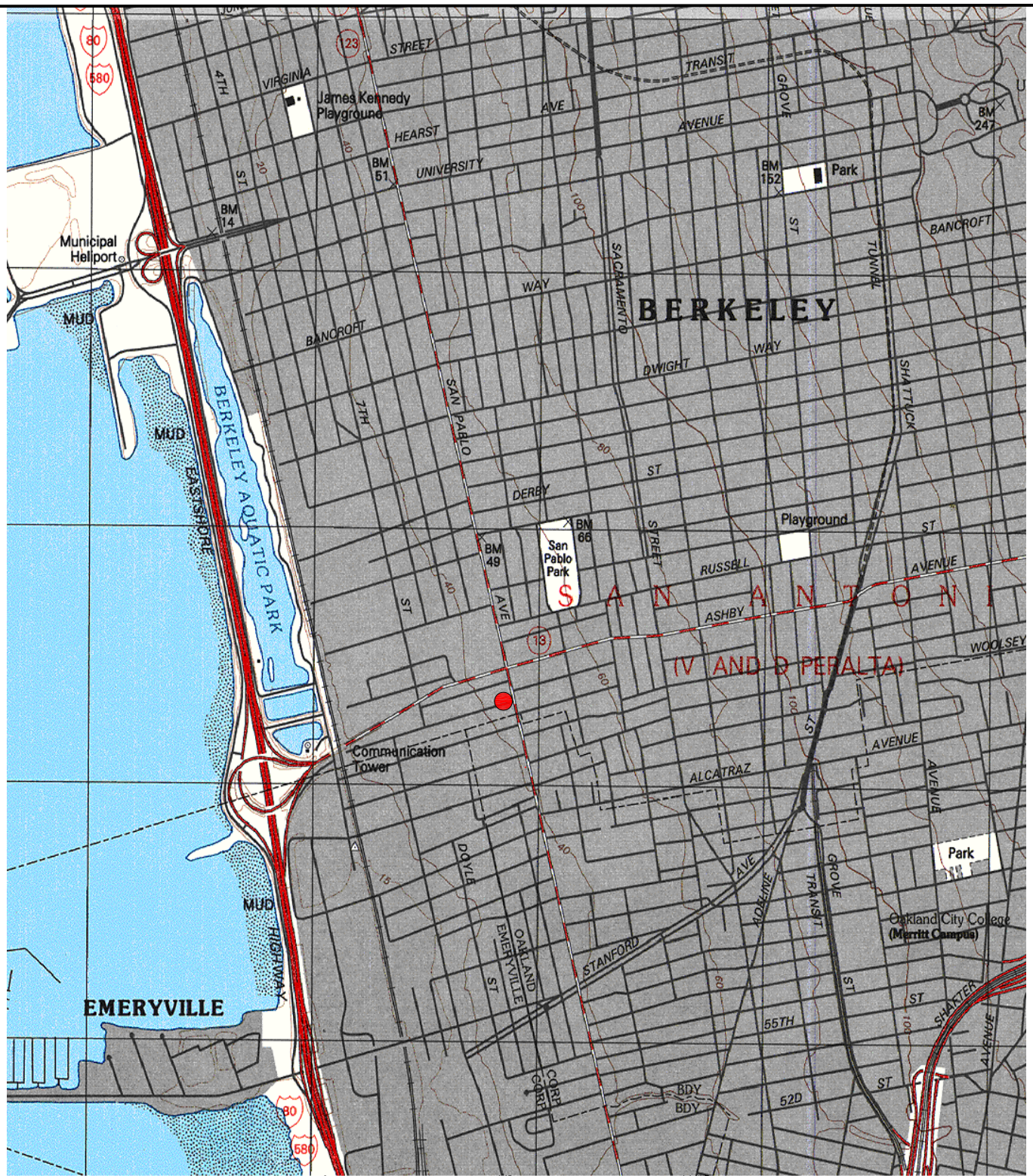
TEC (2005) *Preliminary Site Assessment Report, October 2005*, TEC Accutite, November 14, 2005.



## FIGURES







TN  $\uparrow$  /MIN  
15 $\frac{1}{2}$ °

0 1/2 1 MILE  
0 1000 FEET 0 500m 1000m  
Printed from TOPO! ©1998 Wildflower Productions (www.topo.com)

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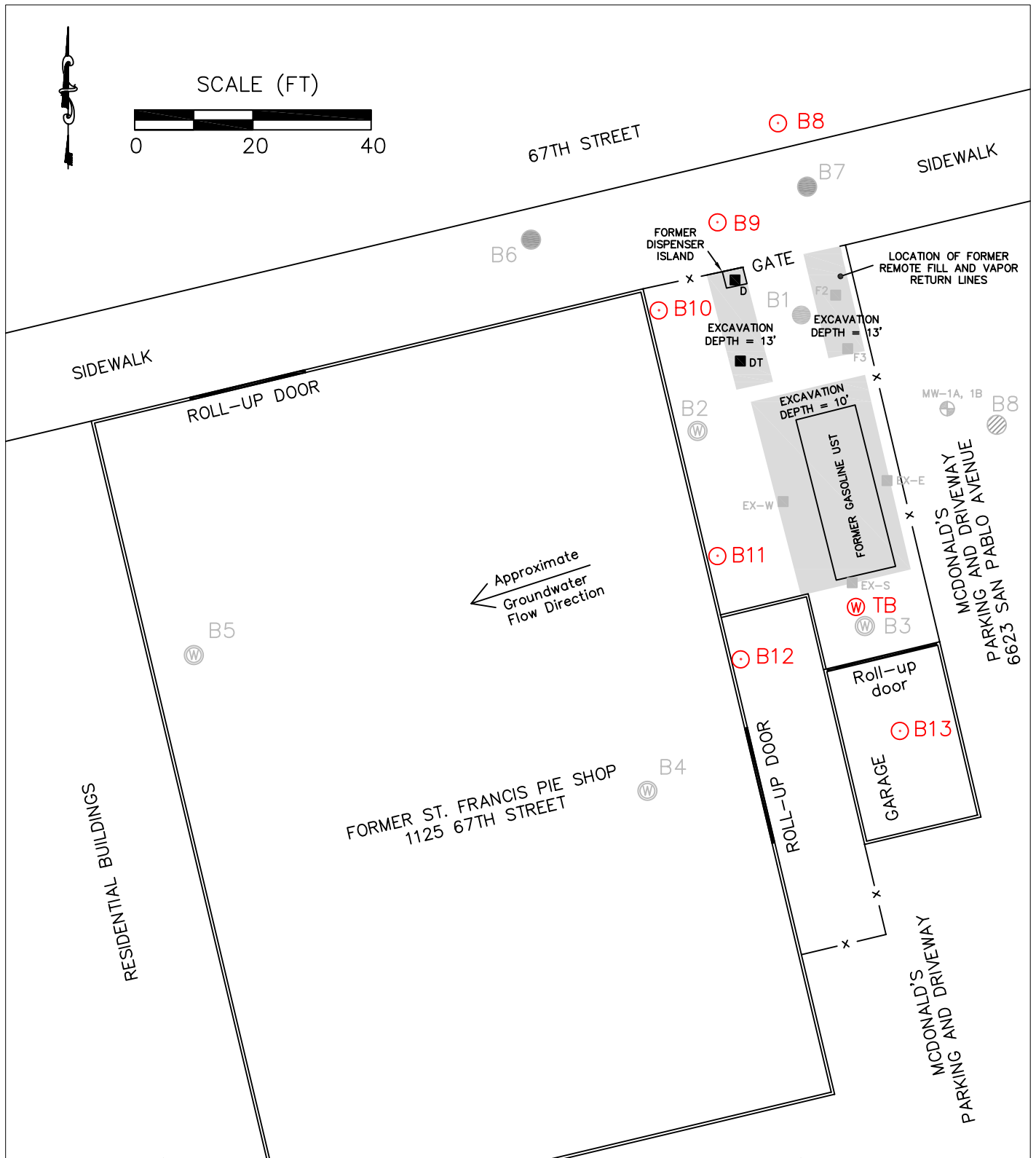
LEGEND:  
● Subject Site  
SCALE: As Above












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FORMER ST. FRANCIS PIE SHOP  
1125 - 67TH STREET  
OAKLAND, CALIFORNIA

FIGURE 1  
VICINITY MAP



PAGE: 1 OF 1	LEGEND:	 <p>262 MICHELLE COURT SOUTH SAN FRANCISCO</p>	FORMER ST. FRANCIS PIE SHOP 1125 - 67TH STREET OAKLAND, CALIFORNIA
DATE: 6/21/2006	<ul style="list-style-type: none"> <li> SOIL BORING</li> <li> ATTEMPTED SOIL BORING</li> <li> CONFIRMATION SOIL SAMPLE</li> <li> SOIL BORING CONVERTED TO TEMPORARY PIEZOMETER</li> <li> MONITORING WELL</li> <li> AREA OF EXCAVATION</li> <li> PROPOSED SOIL BORING LOCATIONS</li> <li> TEST BORING (TB)</li> </ul>		
CAD BY: DrRao			
			<p><b>FIGURE 2</b> <b>Proposed Boring Locations</b></p>