

10 November 1999
Project No. 2543.01-3100

Treadwell & Rollo
PROTECTION
99 NOV 16 PM 3:56

Larry Seto
Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94507-6577

Subject: Workplan for
Floating Product Plume Delineation
2855 Mandela Parkway Property
Oakland, California

Dear Mr. Seto:

This workplan to perform additional subsurface investigation has been prepared by Treadwell & Rollo, Inc. on behalf of 2855 Mandela Property, the current owner of the subject property (the site) (see Figure 1). The objective of the planned work is to delineate the western and northern extent of the floating product plume.

BACKGROUND

Two underground storage tanks (USTs) were removed from the site in 1991. There have been a number of environmental investigations at the property since 1990 conducted by several consultants (sample locations are presented on Figure 2). The subsurface investigations have generally been focused in the southeast area of the property where the tanks were removed in 1991 and the adjacent portion of Willow Street. Gasoline floating product and associated dissolved-phase constituents were detected beneath the site. Laboratory analysis indicates that the product is a leaded gasoline that does not contain MTBE or other oxygenates.

The most recent work performed included eight soil borings (SB-17 to SB-24), three temporary piezometers (TR-1, -2 and -3) and grab groundwater and product samples in May 1999, installation of three monitoring wells (TR-4, -5 and -6) in June, and trial extraction of floating product from these wells in October. Preliminary results were presented at the meeting 4 November 1999 where the Alameda County Department of Environmental Health (ACDEH) agreed that the next phase of work is to delineate the extent of the floating product plume. Final results will be incorporated in the report of activities undertaken for this workplan.

The thickness of the product layer encountered in borings and monitoring wells has ranged as high as 12 feet. At some locations the presence of free product in the direct vicinity is inferred based on concentrations in groundwater (in addition to the usual variability of geologic conditions and the number of factors affecting migration of free product, it appears that some of

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To Larry Seto		From McGuire	
Co./Dept.		Co.	
Phone #		Phone # 925.253.2683	
Fax # 510.337-9335		Fax #	



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Subject: Workplan for
 Floating Product Plume Delineation
 2855 Mandela Parkway Property
 Oakland, California

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the drilling techniques used at the site tended to seal off the boring sidewalls from inflow of free product). The full extent under the building has not yet been defined. The sampling point located furthest inside the building, monitoring well TR-6, had the greatest thickness of free product.

Soil conditions consist of approximately four feet of sandy fill materials overlying relatively low permeability silty clay (Bay Mud). The depth to groundwater is shallow, on the order of 2 to 10 feet below grade, and a perched water zone may be present in the sandy fill above the Bay Mud. Based on two rounds of field measurements from temporary piezometers, groundwater was calculated to be flowing to the west-northwest, from Willow Street onto the Property.

PURPOSE AND SCOPE OF WORK

The overall objective of this investigation is to further delineate floating product extent under the site. To meet these objectives, we propose to:

- utilize small-bore direct-push equipment to install approximately 14 temporary borings at the site generally to 15 feet bgs;
- install the borings further to the north and west than previously investigated (the plume is delineated to the south and east);
- where product does not readily enter the borehole, obtain groundwater samples for analysis as secondary indicators of floating product in the immediate area;
- obtain samples of the sandy fill material immediately above the underlying Bay Mud from five selected borings for chemical analysis; and
- obtain samples of the perched water, if encountered, from five selected borings for chemical analysis.

Proposed sample locations for the 14 temporary borings are shown on Figure 3.

Subsequent to this effort, a technical report will be submitted with results of the 1999 investigation efforts, including the October product extraction program.

PROCEDURES

Field Preparation Activities

In accordance with OSHA regulations, the existing site-specific Health and Safety Plan (HSP) will be updated, as necessary, for the field investigations described herein. All field personnel will be required to implement the procedures presented in the HSP while conducting onsite field work.

Prior to commencing field activities, subsurface drilling permits will be obtained from the Alameda County Public Works Agency. Safety precautions regarding subsurface utilities include notifying Underground Service Alert (USA) of the proposed drilling locations and a private subsurface utility locator will clear each boring location.

Drilling and Sampling

Eleven borings will be advanced to approximately 15 feet bgs and 3 borings will be advanced to approximately 25 feet bgs using a continuous-core direct-push technique to penetrate below the groundwater table. An onsite geologist or engineer will log the borings in general accordance with the American Society for Testing and Materials test designation D 2488-90, Standard Practice for Description and Identification of Soils (Visual – Manual Procedure) and the Unified Soil Classification System, and note observations such as discolored soil. Soil samples will be collected of the sandy fill near the underlying Bay Mud from five selected borings for laboratory analysis. Soil cores will be collected in plastic or metal sleeves, then capped with teflon and plastic caps in the field, labeled, stored in an ice chest, and then shipped under standard chain-of-custody protocol to a state-certified analytical laboratory.

Grab samples of perched water will be collected at five locations as follows. It is planned to first bore to a depth approximately one foot below the sandy fill – silty clay interface. The driller will then pull up the solid metal casing by approximately two feet. After waiting up to 15 minutes to allow perched water to flow into the newly created “sump,” a sample of this perched water, if present, will be collected.

Product thickness measurements or grab groundwater samples will be collected at all 14 locations as follows. The driller will bore down to the planned depth. The solid metal casing will then be removed, and the depth to groundwater and the thickness of product (if present) will be measured to the nearest 0.01-foot using a solinist electronic interface probe. If product is not encountered, a grab groundwater sample will then be collected from the uncased borehole by use of a peristaltic pump. The soil borings will be grouted flush to the existing floor and/or pavement.

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Following retrieval, the groundwater samples will be placed in glass containers provided by the analytical laboratory, labeled, stored in ice chests, and shipped under chain-of-custody protocol to a state-certified analytical laboratory.

Non-disposable sampling equipment (e.g. stainless-steel bailers) will be washed in a dilute non-phosphate detergent solution, rinsed in fresh and then distilled water, and air dried. If groundwater samples are collected, QA/QC field samples will include one blind groundwater sample duplicate for every 10 groundwater samples, and one trip blank for each cooler of groundwater samples, and one equipment blank for each day of field sampling with non-disposable equipment. No equipment blanks will be collected due to use of the peristaltic pump as new, clean tubing is used to collect each sample.

Soil cuttings and equipment rinsate will be stored onsite in labeled drums pending profile results and appropriate final disposal.

Laboratory Analysis

Previous laboratory analysis has indicated that the floating product is leaded gasoline without MTBE or other oxygenates. Therefore, groundwater, perched water and select soil samples will be analyzed for TPH-gasoline by EPA Method 8015M (including chromatograms) and BTEX by EPA Method 8020.

REPORTING

After completion of the site characterization activities described above, a detailed report will be written evaluating the results of the subsurface investigation and pilot remediation efforts to date in 1999. The report will include discussion and analysis of the samples and measurements obtained from the May temporary borings, June monitoring well installation, October product extraction, and subsequent plume delineation outlined herein, and conclusions and recommendations. Figures will be prepared summarizing the sampling results, and estimated direction and gradient of groundwater flow. The report will include tables summarizing the analytical results, monitoring well construction diagrams, boring logs, laboratory reports and chromatograms, and field procedures and results.

SCHEDULE

Treadwell & Rollo is prepared to begin this investigation upon approval from the ACDEH. Upon procurement of all necessary permits, utility clearances, and drilling contractor mobilization, it is estimated that the field well installation and development services described above will require

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approximately 2 days to perform. Receipt of laboratory data typically requires 2 weeks. The technical report will be submitted 4 weeks after receipt of the laboratory results.

We trust that this workplan is acceptable to you. If you have any questions or comments, please contact Faye Beverett of 2855 Mandela Property at (415) 398-2266 or Carrie Austin at (925) 253-2681.

Sincerely,
TREADWELL & ROLLO, INC.



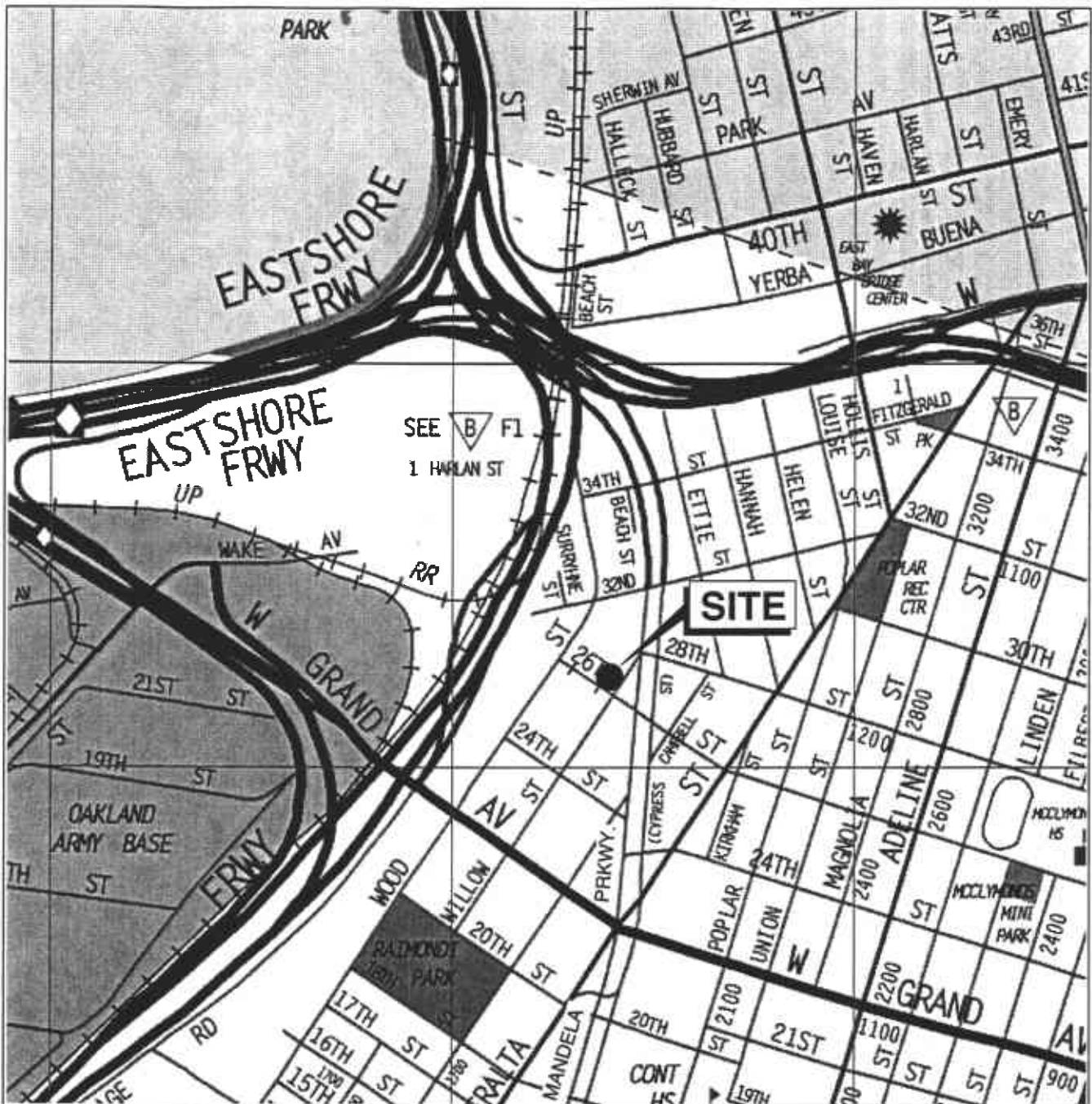
Carrie M. Austin
Environmental Engineer



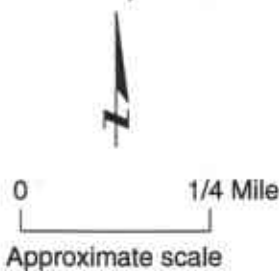
Michael P. McGuire, P.E.
Associate Engineer

Attachments:

- Figure 1 Site Location map
- Figure 2 Sampling Locations
- Figure 3 Proposed Groundwater Grab Sample Locations



Reference: The Thomas Brothers Maps
 Alameda County
 1999

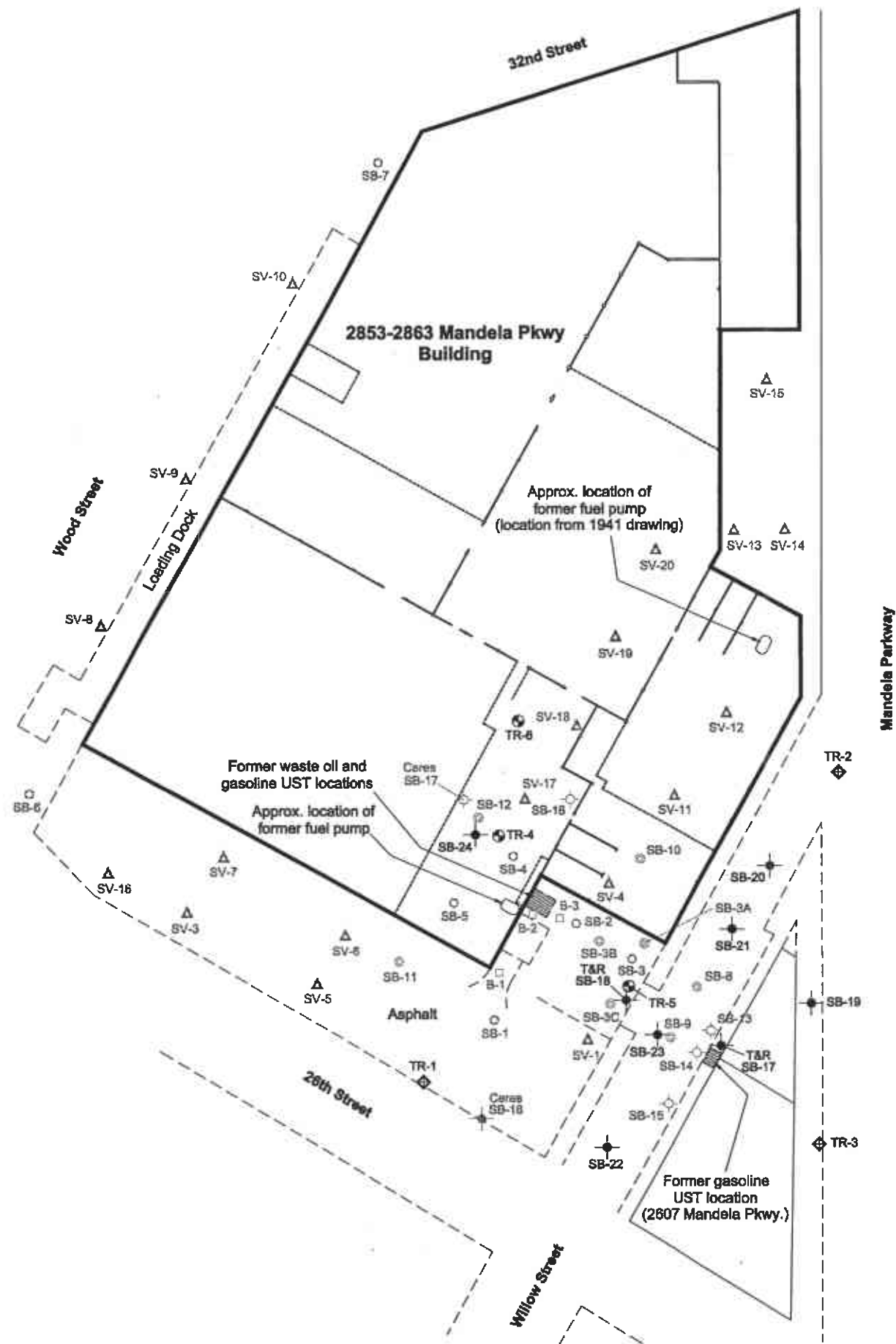


2855 MANDELA PARKWAY
 Oakland, California

SITE LOCATION MAP

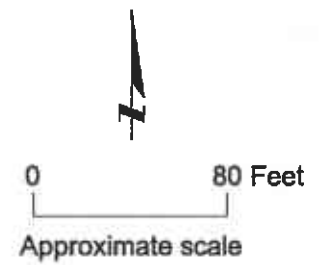
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Date 5/19/99 Project No. 2543.01 Figure 1



- EXPLANATION**
- ⊕ Monitoring well (1999)
 - ⊕ Soil boring (1999)
 - ⊕ Piezometer (1999)
 - ⊕ Soil boring (11/98)
 - ⊕ Soil boring (10/98)
 - Soil boring (08/98)
 - △ Soil vapor sampling location (08/98)
 - Soil boring (06/92)

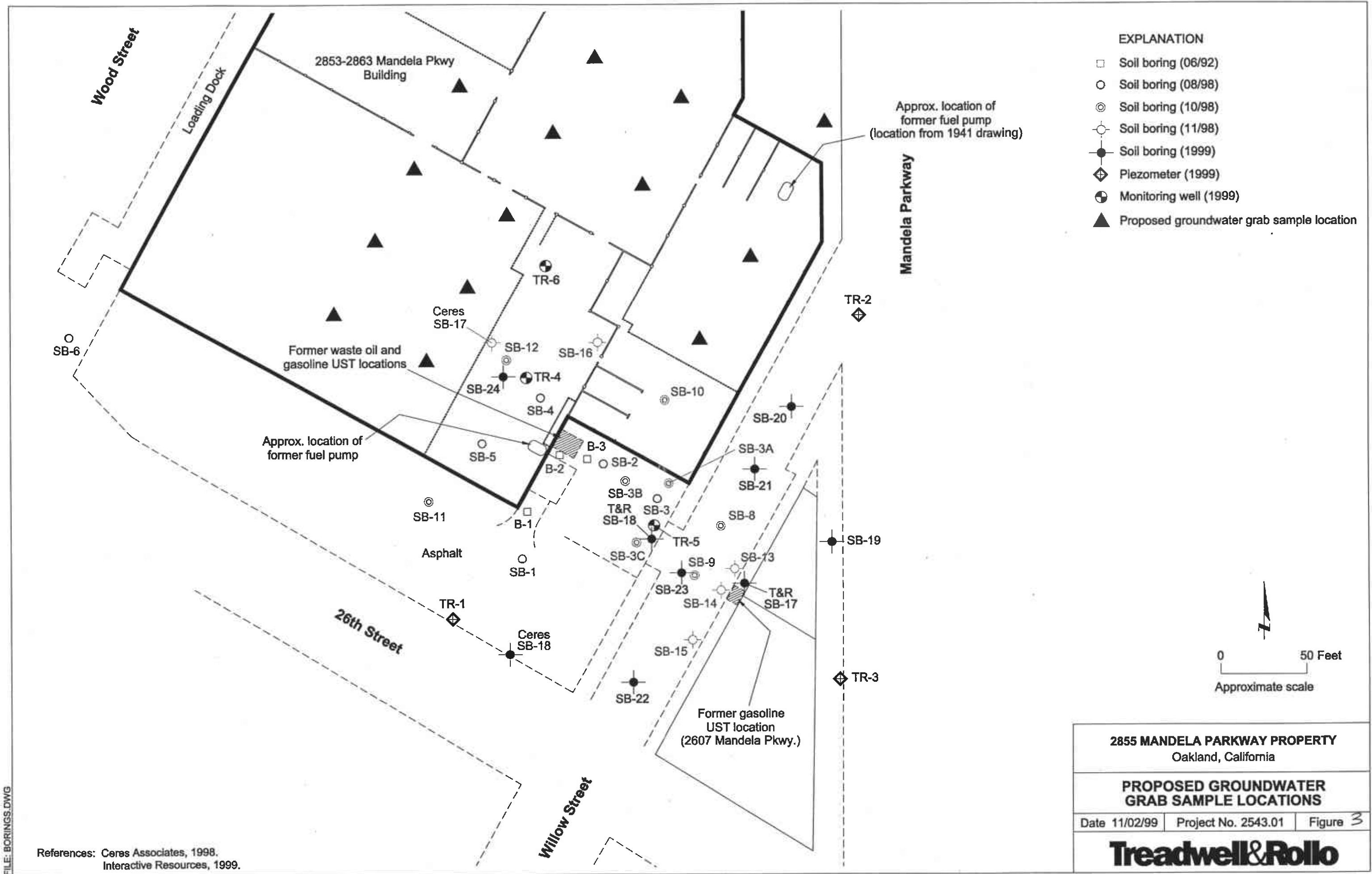
- NOTES**
1. 1992 soil vapor sample locations are not shown.
 2. 1991 UST removal sample locations are not shown.



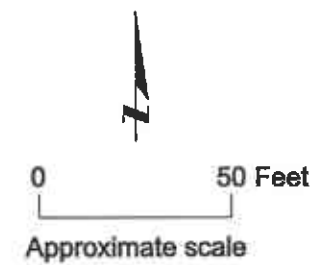
2855 MANDELA PARKWAY PROPERTY Oakland, California		
SAMPLING LOCATIONS		
Date 11/02/99	Project No. 2543.01	Figure 2
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References: Ceres Associates, 1998.
Interactive Resources, 1999.

FILE: 1-90BASE.DWG



- EXPLANATION**
- Soil boring (06/92)
 - Soil boring (08/98)
 - ⊙ Soil boring (10/98)
 - ⊖ Soil boring (11/98)
 - Soil boring (1999)
 - ⊕ Piezometer (1999)
 - ⊗ Monitoring well (1999)
 - ▲ Proposed groundwater grab sample location



2855 MANDELA PARKWAY PROPERTY Oakland, California		
PROPOSED GROUNDWATER GRAB SAMPLE LOCATIONS		
Date 11/02/99	Project No. 2543.01	Figure 3
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FILE: BORINGS.DWG

References: Ceres Associates, 1998.
Interactive Resources, 1999.