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May 22, 2013

1211.001.03.001

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Attention: Mr. Mark Detterman

RECEIVED

By Alameda County Environmental Health at 1:52 pm, May 23, 2013

**Transmittal
Site Conceptual Model
1650 65th Street
Emeryville, California
Fuel Leak Case No. RO0000440
Geotracker Global ID T0600100511**

Dear Mr. Detterman:

Submitted herewith for your review is the document: *Site Conceptual Model, 1650 65th Street, Emeryville, California* prepared by PES Environmental, Inc.

I declare, under penalty of perjury, that the information and recommendations contained in the attached document are true and correct to the best of my knowledge.

Very truly yours,

GRIFFIN CAPITAL CORPORATION

Julie A. Treinen
Managing Director, Asset Management

cc: Chris Baldassari, PES Environmental, Inc.



A Report Prepared for:

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**SITE CONCEPTUAL MODEL
1650 65th STREET
EMERYVILLE, CALIFORNIA
Fuel Leak Case No. RO0000440
Geotracker Global ID T0600100511**

MAY 22, 2013

By:

Christopher J Baldassari, P.G.
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1211.001.03.001

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DISTRIBUTION

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1.0 INTRODUCTION

This Site Conceptual Model (SCM) has been prepared by PES Environmental, Inc (PES) on behalf of Griffin Capital Corporation (Griffin), agent for the fee owners for the commercial property located at 1650 65th Street, in Emeryville, California (site; Plate 1). The site location is shown on Plate 1.

1.1 Objective

The objective of this report is to develop and present an SCM based on a synthesis of data related to the leaking underground storage tank (LUST) case for the former 2,000-gallon underground storage tank (UST) formerly present in the southeast portion of the property (Alameda County Department of Environmental Health [ACEH] case number RO0000440). This SCM presents an evaluation of potential receptors and exposure pathways within the affected area. The SCM also includes: (1) identification of the contaminants of concern (COCs); (2) a summary of the hydrogeologic conditions and distribution of contaminants in the subsurface; and (3) an evaluation of potential contaminant exposure pathways.

Where pertinent to the subject case, additional environmental conditions, including nearby LUST cases and other environmental conditions at or near the site, are discussed.

1.2 Organization

This document is organized as follows:

- **Section 1.0 – Introduction** – presents objectives and organization of the SCM;
- **Section 2.0 – Site Conceptual Model** – presents: (1) local and regional geology and hydrogeology; (2) describes site history, and engineering and institutional controls in place at the site; (3) describes prior environmental actions performed at and near the site; and (4) describes the potential for exposure to hazardous chemicals based on the identified presence of contaminants, transport media, exposure pathways, and potential human receptors;
- **Section 3.0 – Summary of Current Site Conditions and Conclusions** – presents a summary and conclusions based on the assessment of potential exposures to hazardous chemicals developed within the SCM; and
- **Section 4.0 – References** – presents references utilized in the development of this SCM.

2.0 SITE CONCEPTUAL MODEL

2.1 Historical Site Use

The land on which the site is located historically consisted of San Francisco Bay tidal mud flats and was below sea level (Engineering Science [ES], 1989). In the 1940s, the Eastshore Freeway (now known as Interstate 80) was constructed west of the site on a levee built between the site and San Francisco Bay.

The existing building was constructed over fill materials and was initially utilized as a distribution warehouse center for a supermarket company. It is a single-story building, with concrete exterior walls and a concrete floor slab. Beginning in 1973, the U.S. Postal Service occupied the site, and reportedly used it for storage, distribution, and repair of postal service equipment. The site was renovated from commercial warehousing to commercial uses in the 1980s.

2.2 Current Site and Vicinity Characteristics

The property is situated at an elevation of approximately 15 feet above mean sea level (msl), and the terrain slopes gently to the west-southwest. The nearest surface water body is San Francisco Bay, located approximately 1,000 feet west of the subject property.

2.2.1 Current and Expected Future Land Use

Currently the site is predominantly covered with a building structure and paved walkways and parking areas (Plate 2). The site is used for commercial purposes and is anticipated to remain used as commercial into the future, consistent with current zoning. Current tenants include: (1) the U.S. Department of Treasury; and (2) Ex'pressions College for Digital Arts, a private adult college.

2.3 Regional Geology and Hydrogeology

The San Francisco Bay Area is in the California Coastal Range Province, a region characterized by northwest-trending ridges and valleys that generally parallel the major geologic structures, such as the San Andreas and the Hayward Fault systems. Bedrock is composed of highly-consolidated and tectonically-deformed sedimentary, volcanic, and metamorphic rocks of the Franciscan Formation (Jurassic to Cretaceous age). Franciscan rocks commonly consist of pervasively sheared shale and sandstone that include isolated masses of other types of rocks including serpentinite and are referred to as melange. As much as 540 feet of thick sequences of poorly consolidated late Tertiary/early Quaternary alluvial fan deposits are overlain by unconsolidated surficial deposits of Pleistocene to Quaternary age. These surficial deposits include colluvium, alluvium, dune sands, bay mud and marsh deposits.

Historical development of the San Francisco Bay area also resulted in placement of non-native artificial fill material over substantial portions of modern estuaries, marshlands, tributaries, and creek beds in an effort to reclaim land (Nichols and Wright, 1971). As noted above, the subject site is comprised entirely of land that was reclaimed from San Francisco Bay by placement of fill during the 1940s and 1950s.

The City of Emeryville is located along the southwestern margin of the Berkeley Alluvial Plain, which is a sub-area of the East Bay Plain. The two main water-bearing zones beneath Emeryville include a shallow aquifer (less than 60 feet below the surface) and a deep aquifer (200 to 300 feet below the surface). Shallow groundwater in the region flows generally west to southwesterly, toward San Francisco Bay.

2.4 Site Geology and Hydrogeology

Based on the results of investigations performed on the subject property and in the vicinity, the site is underlain by fill material overlying deposits of native silts and clays known locally as Bay Mud. Saturated soil is generally present at depths varying between 10 to 12 feet below ground surface (bgs). Plate 3 shows the location of Cross Section A-A' and Plate 4 depicts the subject property geologic conditions within the vicinity of the former tank. Lithologic logs are presented in Appendix A.

Groundwater at the site is monitored by a network of shallow groundwater monitoring wells (Table 1 and Plate 2). Historical water level elevation data from site wells indicates that groundwater flows consistently southwest across the site, towards San Francisco Bay. The groundwater elevation contours and flow direction from the most recent groundwater monitoring event is depicted on Plate 5 (PES, 2013).

2.5 Engineering and Institutional Controls

Due to the presence of environmental conditions unrelated to the subject LUST case, engineering and institutional controls have been previously developed and/or constructed for the 1650 65th property, and include: (1) a methane collection, control, and monitoring system, and (2) an Intrusive Earthwork Guidance Plan. As further described below, the implementation of these engineering and institutional controls provide substantial benefits with respect to the subject LUST case and are summarized below.

2.5.1 Methane Collection, Control, and Monitoring System

A methane collection, control, and monitoring system was designed and constructed at the site between 2004 and 2005 as part of interior building improvements (PES, 2004; PES, 2005a). The methane collection, control, and monitoring system is comprised of two functional components: (1) a methane gas collection and control system; and (2) a methane monitoring system. The collection and control system consists of 24 vertical subslab gas ventilation wells connected through a series of lateral and vertical piping to several main header pipes which passively vent collected gases out through the roof of the building to the atmosphere

(PES, 2005a). The wells were installed beneath the concrete floor slab of the building to a depth of approximately 5 feet below the slab. The system serves to lessen the potential for methane (and in effect, other volatile organic vapors, if present) to intrude and/or accumulate beneath, and potentially within, the building.

The methane monitoring system consists of a series of gas monitoring sensors that measure the presence of methane gas in the building interior areas. A total of 23 gas monitoring sensors were installed inside the building in areas including restrooms, electrical rooms, and general open space areas.

As such, the methane collection and control system significantly diminishes the potential for intrusion of fuel-related vapors, if any, to the building interior, and largely mitigates the potential exposure pathway for sub-slab vapor intrusion of organic vapors.

Documentation of the methane control system has been submitted to ACEH for this LUST case under separate cover.

2.5.2 Intrusive Earthwork Guidance Plan

An Intrusive Earthwork Guidance Plan (Plan), was prepared for the site in 2005 and provides health and safety guidance for all subsurface work performed at the site (PES, 2005b). The Plan provides background information on pertinent environmental site conditions, and prescribes procedures for conducting and managing intrusive earthwork that are protective of the public and workers involved in potential subgrade construction, maintenance, repair, inspection or other activities involving subgrade work (“regulated activities”).

As described in the Plan, regulated activities include:

- Subsurface construction or repairs;
- Deep landscaping work;
- Utility line work;
- Sub-slab work; and
- Environmental investigations.

Under the Plan, pertinent required components for intrusive subsurface activities conducted at the site include:

- Verification of the location of potentially affected subsurface utilities utilizing both public and private utility location services;

- Preparation of a work-scope specific health and safety plan (HSP) in accordance with the hazardous material regulations found in the California Occupational Safety and Health Administration (CAL-OSHA), Title 8 of the California Code of Regulations (CCR), Section 5192 (Hazardous Waste Operations and Emergency Response (HAZWOPER). Components of required site-specific HSPs include hazard assessment, verification of safety training, participation in a medical monitoring program, and proper air monitoring for the presence of organic and explosive vapors;
- Soil management and handling plans, where waste soil will be produced; and
- Groundwater management, as applicable.

The institutional controls provided by the Plan ensure that current and future occupants and subsurface construction workers are protected during intrusive subgrade work from potential exposure to residuals from the source area. A copy of the Plan has been submitted to ACEH under separate cover.

2.6 Summary of Nearby Leaking Underground Storage Tank Cases

A description of nearby LUST cases pertinent to the subject site is presented below. As further indicated below, affected groundwater from these nearby cases does not appear to have commingled with affected groundwater for the subject LUST case.

2.6.1 6601/6603 Shellmound Street

The 6601/6603 Shellmound Street site (Shellmound site; ACEH case numbers RO0000042 / RO0000043; Geotracker Global ID's T0600100825 / T0600100470) is north of and adjacent to the subject property. Three USTs were removed in August and October 1989. The three former tanks were located adjacent to the property line of 1650 65th Street. Plate 2 shows the location of the former tank area. Tanks removed in 1989 consisted of a 6,000-gallon diesel tank, a 7,500-gallon leaded gasoline tank, and a 2,000-gallon unleaded gasoline tank (ES, 1991a). Reportedly, approximately 2,000 gallons of petroleum product was removed from the excavation. Soil and groundwater samples were collected in 1989 and 1990 from the excavation sidewalls and bottom; the analytical results of the samples indicated the presence of total petroleum hydrocarbons (TPH) quantified as diesel (TPHd), and TPH quantified as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and oil and grease in both soil and groundwater samples. Between 1989 and 1997, periodic groundwater monitoring was performed at two wells (MW-5 and MW-7).

In December 2011, Erler and Kalinowski, Inc. (EKI) collected groundwater samples from wells MW-3 (located on the western side of the subject property) and MW-5 and MW-7. To assess potential vapor intrusion concerns, EKI also installed sub-slab vapor monitoring probes at both the 6601/6603 Shellmound building and the northeast corner of 1650 65th Street building. Based on a comparison of the sub-slab vapor results with San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs),

EKI concluded: (1) BTEX and TPH concentrations in sub-slab vapor were below applicable screening levels for shallow soil vapor at commercial/industrial sites; and (2) the results indicated that aerobic conditions were present beneath the buildings sufficient to promote biodegradation of petroleum hydrocarbon residuals and related constituents (EKI, 2012).

EKI also requested consideration for site closure under the California State Water Resource Board's (SWRCB) Low-Threat UST Case Closure Policy¹ criteria based on: (1) the reportedly limited extent of residual hydrocarbons in soil and groundwater and stable to declining nature of the plume; (2) the lack of conduits or exposure pathways; and (3) the lack of vapor intrusion risk indicated by the analytical results from two rounds of vapor sampling (EKI, 2012).

Based on the investigation and monitoring results for this adjacent LUST case as well as the subject case, the 6601/6603 Shellmound site is transgradient from the subject LUST case, and there is no indication that affected groundwater from the two sites have commingled.

2.6.2 Garrett Freightlines / Bay Center

The Garrett Freightlines / Bay Center site (also known as Emerybay Condominiums) is located south of the subject site, across 65th Street (ACEH case number RO0002799; Geotracker Global ID SLT2O05561). Prior to the construction of Emerybay Condominiums, the site was occupied by two trucking businesses. Tanks identified at the site included four 12,000-gallon and four 10,000-gallon diesel tanks, and one 6,000-gallon gasoline tank. These USTs were decommissioned and removed in 1987. Groundwater monitoring was initiated in 1987. A total of seven groundwater monitoring wells were installed between 1987 and 1990. Eighteen sampling events have been conducted at the site since 1987; the most current groundwater monitoring data (from the September 2012 semi-annual event) for the site indicate that impacted groundwater is transgradient to the subject site and thus has not impacted the subject site.

2.7 Summary of Previous Environmental Activities

Numerous environmental investigations and actions have been conducted at the subject site since removal of the former UST in 1987. The following sections summarize past investigations and other environmental actions taken at the subject site. Pertinent reference documents are listed in Section 4.0. Historical depth-to-water measurements and groundwater elevations are presented in Table 2, and historical soil, groundwater, and sub-slab vapor analytical results are presented in Tables 3 through 5, respectively. Pertinent data tables and plates from previous reports prepared by PES and others are presented in Appendix B.

¹ California State Water Resources Control Board, 2012. Resolution 2012-0016: "*Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closure.*" May 1.

2.7.1 Removal of UST and Remedial Soil Excavation - 1987-1988

The 2,000-gallon gasoline UST was removed from the site in July 1987 and a fuel release affecting soil and groundwater was confirmed at that time through soil and groundwater samples collected in the vicinity of the former tank. The UST was estimated to have been in place for over 20 years and was reported by Engineering-Science to have contained at various times both gasoline and waste oil. At the time of its removal in 1987, neither the tank nor the product pipe exhibited signs of corrosion, and the observed soil contamination was interpreted to have been caused by leaks in the product line fittings (ES, 1987).

In 1988, a remedial action plan was submitted by ES to ACEH. The plan proposed excavation and disposal of soil containing greater than 1,000 milligrams per kilogram (mg/kg) total petroleum hydrocarbons and backfilling the excavation with clean soil. ACEH subsequently approved the plan. During its implementation approximately 92 cubic yards of soil was excavated in the vicinity of the former tank. The approximate extent of the excavation is shown in Plate 3. Contaminated soils were excavated to approximately 16.5 feet bgs, approximately 4.5 feet below the groundwater surface.

Due to structural concerns the soil excavation was not extended underneath the nearby building (ES, 1988). Based on confirmation sampling that indicated concentrations of TPH in the bottom of the excavation were below 1,000 mg/kg, ACEH and RWQCB representatives agreed that the remedial goals had been met and the excavation was backfilled on March 16 and 17, 1988.

2.7.2 Source Area Evaluation and Remediation Activities - 1989-1999

To assess post-remediation groundwater quality, quarterly groundwater monitoring at the site was initiated in November 1989. According to a report prepared by ES (ES, 1990), the relatively low concentrations of gasoline in wells suggested that hydrocarbon contamination associated with the former UST had not significantly migrated. Based on groundwater sample results from monitoring well MW-5 (located on the northern side of the subject property) a separate groundwater plume associated with the Shellmound site (see Section 2.6.1) was identified.

In March and April 1990, two additional monitoring wells (MW-6 and MW-7) were installed at the southeast and northern portions of the property, a groundwater extraction well (EW-1) was installed, and a pump test was performed on well EW-1 (ES, 1990). Based on the pump test and groundwater sample results, ES prepared a remedial plan that proposed capture, treatment, and discharge of affected groundwater from the source area. The plan was approved by ACEH.

The groundwater system utilized activated carbon to remove dissolved hydrocarbons prior to discharging extracted groundwater to the sanitary sewer. The groundwater extraction and treatment system was operated by Engineering-Science from December 1990 through October 1993. Due to the low-permeability subsurface materials and low solubility of

petroleum hydrocarbons in groundwater, the rate of petroleum hydrocarbons removal was reportedly low (the stable pumping rate was determined to be less than 1 gallon per minute [ES, 1991b]). Groundwater extraction was terminated in October 1993.

In 1993, a passive *in-situ* bioremediation pilot study was conducted (PES, 1993) to assess passive *in-situ* techniques for remediating petroleum hydrocarbons residuals in saturated soils and groundwater. A new upgradient monitoring well (MW-8) was installed in September 1994. As part of the bioremediation pilot study, an oxygen source, in the form of a solution of hydrogen peroxide (H₂O₂) was periodically introduced into wells EW-1, MW-2, and upgradient well MW-8. During the pilot study period, concentrations of TPH and benzene in wells MW-2 and EW-1 declined by approximately 80 percent between August 1994 and February 1997 (PES, 1997). Based on the observed reduction in hydrocarbon concentrations, and historical data indicating that the areal extent of affected groundwater was localized and not migrating, ACEH granted approval to: (1) discontinue groundwater monitoring; and (2) evaluate the site for closure (PES, 2001).

2.7.3 Case Closure Evaluation - 2001

A case closure evaluation report dated April 27, 2001 was submitted by PES to ACEH. The report summarized data indicating the stable and localized nature of the affected groundwater at the site, and compared calculated indoor air concentrations from residual aromatic hydrocarbons in groundwater using a steady-state vapor flux model to U.S. Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRGs) for ambient air. The calculated indoor air concentrations did not exceed the PRGs for the constituents of concern. Based on the results of the evaluation, PES requested that ACEH issue a “No Further Action” (NFA) determination with respect to groundwater conditions in the vicinity of the former UST.

2.7.4 Groundwater Monitoring and Preferential Pathway Study - 2010

ACEH issued a letter to Griffin on July 7, 2009 (ACEH 2009 Letter). Technical comments in the ACEH 2009 Letter included requests for: (1) performing a groundwater sampling and monitoring event; and (2) performing a preferential pathway study. PES submitted a Work Plan on behalf of Griffin, and ACEH conditionally approved the Work Plan on August 16, 2010. PES implemented the Work Plan in August 2010 and submitted a report to ACEH titled *Results of Groundwater Monitoring and Preferential Pathway Study, and Request for Case Closure* dated October 25, 2010.

October 2010 Groundwater Monitoring Results: Results of the work plan implemented in October 2010 indicated: (1) the direction of groundwater flow was to the southwest, consistent with historical groundwater monitoring data; (2) concentrations of TPHg and BTEX in wells MW-2 and EW-1 (in the source area) were significantly lower compared to data collected from MW-2 and EW-1 in October 2000 (the most recent previous sample event), indicating that concentrations in the source area were attenuating with time; and (3) groundwater concentrations were below the ESLs for potential vapor intrusion concerns.

Results of Preferential Pathway Study: The locations and depths of site utilities were determined based on: (1) available files from the City of Emeryville Building Department and Public Works Department; and (2) a subsurface electromagnetic survey conducted on September 29, 2010 by C. Cruz Sub-Surface Locators, Inc. of Milpitas, California. Identified utility locations are presented on Plate 3 of Appendix B.

PES also reviewed water well completion reports obtained from the California Department of Water Resources (DWR) within a 0.25-mile radius of the site. DWR well logs indicated that only relatively shallow monitoring wells were present. No lateral or vertical conduits were identified in the vicinity of the former UST, and available water well information for the vicinity indicates that wells were used only for monitoring or remediation purposes.

ACEH subsequently issued a letter dated April 1, 2011 to Griffin (ACEH 2011 Letter), which included requests for: (1) limited groundwater investigation in the area downgradient of the former UST between monitoring wells MW-4 and MW-6; (2) evaluation of potential vapor intrusion concerns from the source area through sub-slab vapor sampling inside the southeastern corner of the on-site building; and (3) focused delineation of residual petroleum hydrocarbons in soil within the source area. ACEH also requested initiation of groundwater monitoring of select wells on a semi-annual basis. As noted in the ACEH 2011 Letter, monitoring was not required for wells MW-3, MW-5, and MW-7 as analytical results from these wells (located upgradient and transgradient to the source area, as shown on Plate 2) were attributed by ACEH to releases from the former USTs at the 6601/6603 Shellmound site (i.e., releases not associated with the subject site). Additionally, as requested by ACEH, a single round of analyses for additional constituents (including total dissolved solids [TDS], total metals, chlorinated solvents, and motor oil) was requested to document elevated natural TDS levels and confirm the absence of COCs related to potential storage of waste oil in the former UST.

2.7.5 Semi-Annual Groundwater Monitoring - 2011-2012

Periodic groundwater monitoring was initiated at the site in May 2011 at the request of ACEH. Groundwater samples analyses included TPHg using U.S. EPA Method 8015M; and (2) BTEX and fuel oxygenates consisting of methyl-tertiary butyl ether (MTBE), ethyl tertiary-butyl ether (ETBE), di-isopropyl ether (DIPE), tert-butyl alcohol (TBA), ethylene dibromide (EDB), 1,2-dichloroethane (1,2-DCA), and tertiary-amyl methyl ether (TAME) using U.S. EPA Test Method 8260B.

For the fourth quarter 2011 groundwater sampling event, additional analyses for TPH quantified as motor oil (TPHmo), selected metals (the LUFT 5 metals list, including cadmium, chromium, nickel, lead, and zinc), halogenated VOCs, and TDS was conducted. The results indicated that TPHmo, metals, and HVOCs were not detected at or above the laboratory reporting limit in any of the groundwater samples, with the exception of a low concentration of TCE detected in upgradient well MW-8. The detected concentration of TCE in well MW-8 (3.7 $\mu\text{g/L}$) was less than the Maximum Contaminant Level (MCL) of 5 $\mu\text{g/L}$ for drinking water. The results further indicated that: (1) waste oil reportedly stored in the former UST

had not affected groundwater at the site; and (2) the low-level detection of TCE in upgradient well MW-8 was likely from an offsite source.

Concentrations of TDS were above the secondary MCL of 500 mg/L for all sampled wells. Three of the sampled wells (MW-4, MW-6, and MW-8) were above the upper secondary MCL of 1,000 mg/L, and two of the wells (MW-4 and MW-6) were above the RWQCB limit of 3,000 mg/L for waters potentially suitable for municipal supplies (RWQCB, 2010). In conjunction with: (1) the presence of widespread local groundwater contamination; (2) the designation of local groundwater (i.e., in the Berkeley Alluvial Plain) by the RWQCB as being in Zone B, which indicates groundwater is unlikely to be used as a drinking water source, and (3) the City of Emeryville ordinance² prohibiting extraction of groundwater for residential, industrial, or agricultural uses, based on the overall high TDS results the use of local shallow groundwater for human consumption is considered unlikely.

Results of the Fourth Quarter 2012 groundwater monitoring (the most recent event) were submitted to ACEH in a report dated January 22, 2013 (PES, 2013). The fourth quarter 2012 results indicated that: (1) concentrations of TPHg and BTEX in wells MW-2 and EW-1 (in the near vicinity of the former UST) continue to show decreasing trends when compared to historical data; (2) concentrations of TPHg and BTEX in downgradient wells MW-4 and MW-6 indicate that the plume is stable or shrinking when compared to prior monitoring data; and (3) groundwater concentrations at the site are below the ESLs for potential vapor intrusion concerns at commercial/industrial sites.

2.7.6 Additional Investigation - 2012

On June 2, 2011, PES, Griffin, ACEH, and representatives for the UST case at 6601/6603 Shellmound Street (i.e., Sybase and its consultant EKI) met to discuss the technical comments contained in ACEH's April 1, 2012 letter and a similar letter for the Shellmound site. Based on the outcome of the meeting and ACEH's technical request, PES submitted Work Plans and addenda (PES, 2011a; PES 2011b; PES 2011c; PES 2012) to address ACEH's concerns. ACEH conditionally approved the proposed scopes of work on February 22, 2012.

Work Plan implementation activities were performed on March 20 through 22, 2012, and April 19, 2012. The approved scope of work consisted of: (1) installing and developing a temporary well and collecting a groundwater sample (TGW-1) in the area between monitoring wells MW-4 and MW-6; (2) installing two sub-slab vapor probes in the southeast corner of the building (SS-1 and SS-2) and collecting and analyzing sub-slab vapor samples for petroleum hydrocarbon constituents as well as methane and standard atmospheric gases; and (3) advancing 5 soil borings for soil sampling purposes (SB-1 through SB-5). The results were submitted to ACEH in a report entitled *Results of Additional Investigation* and dated September 18, 2012. A summary of the additional investigation results follows:

² City of Emeryville Ordinance No. 07-006.

Sub-Slab Vapor: The sub-slab vapor results indicated: (1) fuel-related VOCs (e.g., benzene) and methane are not present under the southeast area of the 1650 65th Street building; (2) based on the absence of fuel-related vapors and methane, the methane collection system appears to be functioning as intended and significantly reduces the potential for vapor intrusion concerns; and (3) high oxygen concentrations detected in the vapor samples suggest the subsurface environment beneath the southwest portion of the building is conducive to biological degradation of petroleum hydrocarbon vapors. Taken as a whole, the vapor results indicated no current vapor intrusion concern for building occupants.

Groundwater: TPHg, BTEX, and fuel oxygenates were not detected in a groundwater sample obtained from temporary groundwater monitoring well TGW-1 at or above their respective laboratory reporting limits, with the exception of a very low concentration of toluene (1.2 micrograms per liter [$\mu\text{g/L}$]). The results indicate that there is not an area of affected groundwater between wells MW-4 and MW-6, and that affected groundwater is restricted to a localized, on-site area monitored by wells MW-2 and EW-1.

Soil: In general, relatively low concentrations of TPHmo, TPHd, TPHg and BTEX were detected in shallow soil samples collected from the upper vadose zone (i.e., 4.5 feet bgs). Concentrations of TPHmo, TPHd, TPHg, and BTEX generally attenuated between 16 and 20 feet bgs at all boring locations (SB-1 through SB-5).

As indicated by the analytical results at boring SB-1 (Plate 6 and Table 3), concentrations of petroleum hydrocarbons generally attenuated at all sampled depths and did not extend appreciably beneath the building.

The locations of borings SB-3, SB-4, and SB-5 were placed in close proximity to the source area and, as expected, concentrations of petroleum hydrocarbon residuals in both the saturated and smear zones were consistent with the presumed maximum concentration of petroleum hydrocarbon residuals (i.e., TPHg and BTEX) at the site. When compared to the low concentrations of TPHg and BTEX detected in nearby groundwater (represented by wells MW-4, MW-6, MW-8, and TGW-1) and analytical soil samples from wells MW-4 and MW-6 (ES, 1989, ES, 1990) it was inferred that the lateral extent of petroleum hydrocarbon residuals in soil did not extend significantly further beyond these boring locations.

Recommendations in the report included: (1) a SCM should be prepared for the site; and (2) the site should be evaluated for case closure under the California SWRCB's low-threat UST case closure policy.

2.8 Distribution of Petroleum Hydrocarbon Residuals in the Subsurface

The distribution of petroleum hydrocarbon residuals related to the historical release from the former tank area is summarized below.

2.8.1 Distribution of Petroleum Hydrocarbon Residuals in Soil

Prior soil remediation activities included excavation and disposal of 92 cubic yards of contaminated soil in the vicinity of the former UST (ES, 1988). Contaminated soils were excavated to approximately 16.5 feet bgs, approximately 4 to 6 feet below the water table and discrete soil samples were collected from the bottom of the excavation at approximately 17 feet bgs (samples BW-2 and BE-2, respectively), and from the excavation sidewall at approximately 9.5 feet bgs (samples SW-1 and SNE-1).

To provide additional characterization of the distribution of petroleum hydrocarbon residuals within the site source area, in March 2012, five soil borings (SB-1 through SB-5) were advanced to depths of between 20 and 24 feet bgs. Soil borings SB-1 and SB-2 were advanced within the interior of the building, and SB-3 through SB-5 were drilled at exterior locations, as shown on Plate 3.

The presence of petroleum hydrocarbons in soil is shown graphically on Plate 6. Isoconcentration maps representing estimated extents of residual petroleum hydrocarbons (TPHg and benzene) in soil are shown on Plates 7 through 14.

The locations of borings SB-3, SB-4, and SB-5 were placed in close proximity to the limits of the former excavation area and likely represent maximum concentration of petroleum hydrocarbon residuals. Soil from the upper vadose zone (i.e., 4.5 feet bgs) from these borings exhibited relatively low concentrations of TPHmo, TPHd, TPHg and BTEX, while higher concentrations of lighter-fraction hydrocarbons (e.g., TPHg and BTEX) were detected in soil samples located within the “smear zone” (i.e., 9 feet bgs). Deeper soil samples (collected from below the water table) indicated that concentrations of TPHg, and BTEX attenuated between 16 and 20 feet bgs at all five boring locations (SB-1 through SB-5).

2.8.2 Distribution of Petroleum Hydrocarbon Residuals in Groundwater

Historical groundwater sampling results are presented in Table 4. The distribution of petroleum hydrocarbons in groundwater from the most recent groundwater monitoring event (November 2012) is presented on Plates 15 through 17.

As shown on the isoconcentration contour maps for TPHg and benzene (Plates 16 and 17, respectively), concentrations of contaminants in downgradient wells MW-4 and MW-6 indicate that groundwater affected by the release from the former tank is restricted to a localized on-site vicinity (represented by wells MW-2 and EW-1) near the source area. Additionally, results from temporary groundwater well TGW-1 (located between MW-4 and MW-6) similarly indicated the absence of downgradient impacts to groundwater

Concentrations of TPHg and BTEX in wells MW-2 and EW-1 (in the near vicinity of the former UST) indicate a decreasing trend when compared to historical data. Concentration trends for wells MW-2 and EW-1 are evaluated further in Section 2.8.5.

As shown on Plate 15 and Table 4, current and historical groundwater concentrations at the site indicate that there is not a potential vapor intrusion concern.

TPHg and BTEX have been detected in upgradient well MW-8 at varying concentrations since the Fourth Quarter 2010 event; however, these constituents were generally not detected during previous monitoring events conducted from 1994 through 2000 and, as such, recent detected concentrations are likely from an unknown off-site source.

2.8.3 Distribution of Petroleum Hydrocarbon Residuals in Vapor

As shown in Table 5 and Plate 18, BTEX and methane were not detected at or above the laboratory reporting limit in samples collected from sub-slab vapor probes SS-1 and SS-2 installed in the southeast corner of the building. The results indicate an absence of fuel-related VOCs (e.g., benzene) and methane, as well as high oxygen levels, under the southeast area of the building, and indicate there is no current vapor intrusion concern.

Furthermore, based on historical groundwater data indicating: (1) observations of the stable and/or decreasing concentrations of hydrocarbon-affected groundwater in the vicinity of the former tank (and adjacent to the building); and (2) the age of the release, there does not appear to be a significant potential for increased future risk of vapor intrusion concerns as a result of the historic release.

2.8.4 Residual Petroleum Hydrocarbon Transport Mechanisms and Attenuation

Residual petroleum hydrocarbon contamination is present in the vicinity of the former UST. The source of the contamination was attributed at the time of the tank removal to leaks in product lines and fittings (ES, 1988). The release from the former UST system likely migrated vertically through the more permeable product piping and tank backfill materials and then laterally outward along the water-bearing portions of underlying fill materials. Based on soil and groundwater data indicating that both media are affected, adsorption and desorption between the two phases may be occurring. Potential fate and transport mechanisms for the residual contamination in the saturated zone are advection, dispersion, adsorption, desorption, degradation, and volatilization.

As shown in Plates 15 through 17, based on their distribution in groundwater, residual petroleum hydrocarbon constituents have not significantly migrated. Previous investigation and monitoring activities have verified that off-site migration of petroleum hydrocarbons in groundwater has not occurred (PES, 2012b). The lack of plume migration can likely be attributed to the relatively shallow groundwater gradient, the low permeable nature of the fill and native units, and natural biologic and physical attenuation.

Based on the soil results (see Plates 4 and 6), the presence of the native Bay Mud appears to have impeded the downward migration of contaminants. Previous sub-slab vapor testing indicates that fuel-related VOCs are absent beneath the building and sufficient oxygen to promote biodegradation is present in the vicinity of the former tank (PES, 2012b).

2.8.5 Concentration Trend Evaluation of Source Area-Affected Groundwater

To evaluate temporal concentration trends in groundwater at the source area, analyses were performed for monitoring wells where concentrations of COCs exceed relevant screening criteria during recent monitoring (2010 and later monitoring events). First-order decay rate constants were derived from concentration versus time plots, and linear regression analyses were performed with log-normalized concentration data to estimate trend direction, attenuation rates, and approximate time to reach applicable screening levels³ at wells with decreasing trends (U.S. EPA, 2002). As a conservative measure, concentrations trend plots were created for wells with COCs above their applicable California Department of Public Health (CDPH, 2010) maximum contaminant level (California MCL) for drinking water or ESL. Based on data from recent monitoring events, trend analyses were conducted for COCs which exceeded the following screening levels:

- TPHg: 100 $\mu\text{g/L}$ (drinking water ESL [RWQCB, 2008]);
- Benzene: 1 $\mu\text{g/L}$ (California MCL); and
- Toluene: 150 $\mu\text{g/L}$ (California MCL).

TPHg, benzene, and toluene trends for source area wells MW-2 and EW-1 were evaluated. The following further describes the observed trends for chemicals detected at concentrations above their respective screening levels, and calculations utilized to project the timeframe to meet the applicable trend analysis screening levels.

To estimate concentration trends over time, a method described by the U.S. EPA in the document: *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies, EPA/540/S-02/500*, dated November 2002, was utilized (U.S. EPA, 2002). To calculate first-order decay rate constants (k_{point}) for COCs in wells above the trend analysis screening levels, concentration versus time was plotted for each chemical. The k_{point} was calculated as the slope of the best-fit line using simple regression. Positive k_{point} values (i.e., a downward sloping best-fit lines) indicate a decreasing trend in chemical concentrations. Following the U.S. EPA method, the time to reach the applicable trend analysis screening level was calculated using the equation:

$$t = \frac{-\ln\left[\frac{C_{\text{goal}}}{C_{\text{start}}}\right]}{k_{\text{point}}}$$

where:

t = Time (years since monitoring initiated)

C_{goal} = Trend analysis screening level concentration ($\mu\text{g/l}$)

C_{start} = Starting groundwater concentration (y-axis intercept) ($\mu\text{g/l}$)

k_{point} = Decay rate constant (year^{-1})

³ Not applicable for increasing or stable trends.

Calculation worksheets and linear regression plots are provided in Appendix C. As a conservative estimate for trend analysis, non-detect values were incorporated as equal to the laboratory reporting limits.

Results of these analyses demonstrate decreasing trends for COCs (i.e., TPHg, benzene, and toluene) in groundwater within the source area. Based on the regression analysis, concentrations of dissolved-phase petroleum hydrocarbon residuals in groundwater are estimated to reach applicable screening levels within a reasonable timeframe (i.e., approximately 25 to 35 years).

2.9 Evaluation of Potential Preferential Migration Pathways

A preferential pathway study conducted in 2010 by PES (Section 2.6.1) identified: (1) locations and depths of the site utility corridors; and (2) wells within 0.25 miles of the site. No significant lateral or vertical conduits were identified within the former source area, and available information indicates that vicinity wells are used only for monitoring or remediation purposes (PES, 2010).

2.10 Evaluation of Potential Receptors

A receptor represents hypothetical groups of people that are associated with various assumed exposure scenarios. Commercial indoor workers are currently present, and are expected to be present in the future at the site. In addition to typical indoor workers, the adult student population at Ex'pressions College can be conservatively considered as equivalent to indoor workers. Although construction is not currently being conducted at the site, related activities may occur in the future, including periodic maintenance activities requiring temporary subsurface excavation or trenching conducted by construction workers (such work would be controlled by the Intrusive Earthwork Guidance Plan, as discussed below). Under the current and expected future scenario, the outdoor commercial worker category does not exist. Aside from the existing on-site structure the remainder of the site is comprised of an unattended asphalt-paved parking lot. Site visitors are anticipated to have less significant exposure than either indoor commercial or outdoor construction workers since their presence is transient (compared to indoor workers) and the potential for exposure would likely be significantly less.

Categories of potential site users include: (1) current and future indoor commercial workers; and (2) future outdoor construction workers. These categories are based on the current and anticipated future use of the site and potential access and/or exposure to impacted media (i.e., soil, soil vapor, and groundwater).

2.11 Evaluation of Exposure Pathways

An exposure pathway is a mechanism by which receptors are assumed to contact chemicals in site media (U.S. EPA, 1989). Potential exposure pathways are discussed in the following sections and shown schematically on Plate 19.

2.11.1 Direct Exposure

Direct exposure can occur via soil incidental ingestion, soil dermal contact, groundwater incidental ingestion, and groundwater dermal contact, as discussed below.

Groundwater Incidental Ingestion: Shallow groundwater is not used as a drinking water source for the site or surrounding area, so ingestion of groundwater by site users (indoor or outdoor commercial/construction workers) is highly improbable. The potential for exposure to groundwater is further limited by the City of Emeryville Ordinance No. 07-006 prohibiting extraction of groundwater for drinking, industrial, or irrigation purposes. The site is paved and no direct contact exposure pathway for groundwater exposure exists for occupants of the site; therefore direct contact with groundwater via incidental ingestion is not considered a significant or complete exposure pathway.

Groundwater Dermal Contact: The site is paved and no direct contact exposure pathway for groundwater exposure exists for occupants (e.g., indoor commercial workers) of the site. Shallow groundwater at the site has been observed at depths ranging from 8 to 11 feet bgs; based on the results of the Preferential Pathway Study (PES, 2010), site utilities are installed above the depth to shallow groundwater and it is therefore unlikely future construction workers will come into direct contact via dermal exposure with groundwater. The exposure pathway for groundwater dermal contact is not considered complete.

Soil Incidental Ingestion/Soil Dermal Contact: The site is paved and no direct contact exposure pathway exists for commercial users of the site; therefore direct contact with soil is not considered to be a significant or complete exposure pathway for commercial indoor workers.

Direct exposure via incidental ingestion or dermal contact with soil and/or groundwater during temporary subsurface excavation or trenching conducted by construction workers is regulated by the Intrusive Earthwork Guidance Plan (PES, 2005b) which stipulates procedures for conducting subsurface work (including, for example, wearing protective clothing and monitoring ambient air for organic vapors) that are protective of the public and workers involved in subgrade construction, maintenance, repair, inspection or other activities involving subgrade work at the site. Therefore, direct contact for construction workers via soil incidental ingestion or dermal contact is largely mitigated through implementation of the Plan and is considered a complete but insignificant pathway.

2.11.2 Indirect Exposure

Indirect exposure can occur to receptors via indoor air inhalation, ambient air inhalation, and fugitive dust inhalation.

Indoor Air Inhalation: Vapor inhalation may occur from volatile chemicals originating in the groundwater or soil in the subsurface. As indicated in the schematic SCM (Plate 19), indoor air inhalation exposure risk is comprised of the cumulative effects of vapor migration to indoor air from organic vapors in soil and/or groundwater. Although enclosed structures are present at the site, the potential exposure to vapor from soil or groundwater is effectively mitigated through normal functioning of the methane collection system. Additionally, sub-slab vapor testing results indicate that: (1) petroleum hydrocarbon vapors are absent from the subsurface near the source area; and (2) oxygen levels in shallow soil in the vicinity of the source area sufficient to promote biological attenuation processes. As such, the vapor intrusion pathway is not considered a significant and complete exposure pathway for current or future indoor commercial workers.

Ambient Air Inhalation: The impacted area is capped by low-permeability asphalt/concrete paved parking and/or walkways, or covered by the building structure concrete slab. No ambient air exposure pathway exists for occupants of the site.

Fugitive Dust Inhalation: The impacted area is capped by asphalt/concrete paved parking and/or walkways, or covered by the building structure concrete slab; therefore, the fugitive dust inhalation pathway is not considered complete for current or future site receptors.

2.11.3 Potential Ecological Receptors

The site is located in a developed urban environment and is devoid of ecological habitat. There are no surface water bodies at the site. As such, ecological receptors are absent and will not likely be present at the site in the future. Due to the distance between the site and San Francisco Bay (where site groundwater is presumed to discharge to surface water [approximately 1,000 feet away]), and the lack of off-site impacts to groundwater, potential exposure pathways for ecological receptors are incomplete.

2.11.4 Summary of Potential Exposure Pathways

Potential and current future human receptors at the site include current and future indoor commercial workers and future construction workers. The current and future land use at the site is anticipated to remain the same.

Based on existing engineering and institutional controls, potentially complete (but likely insignificant) exposure pathways are:

- Incidental ingestion of or dermal contact with subsurface soil; and
- Inhalation of vapors migrating from the subsurface into the enclosed building structure (indoor air inhalation).

2.12 Assessment of Potential Public Health Concerns from Residual Constituents

This section provides an assessment of potential human health concerns from residual petroleum hydrocarbons associated with the subject LUST case, and compares COCs to applicable screening criteria.

RWQCB's East Bay Plain Groundwater Basin Beneficial Use Evaluation Report (RWQCB, 1999; "East Bay Plan") states that groundwater in the site vicinity is "unlikely to be used as a drinking water resource" for which "passive remediation to restore municipal beneficial uses as a long-term goal is recommended." RWQCB further identifies groundwater beneath the site as "Other Groundwater (uses other than drinking water)." Background water quality likely precludes use for human consumption based on: (1) the presence of the site within a former fill area of Emeryville; (2) the City of Emeryville Ordinance 07-006 prohibiting extraction of groundwater for site use; and (3) generally high TDS values in background groundwater samples. Comparison to ESLs⁴ where groundwater is "not a current or potential use of drinking water" may be most appropriate.

2.12.1 Assessment of Potential Human Health Concerns - Groundwater Volatilization

While the indoor air inhalation pathway and outdoor air ambient volatilization are not considered significant or complete base on the existing engineering controls and site use, current groundwater concentrations were compared to ESLs for potential vapor intrusion concerns⁵ as a conservative measure. The average benzene concentration over the previous four monitoring events (since 2011) within the well exhibiting the highest concentrations of benzene (source area well MW-2) was 250 $\mu\text{g/L}$, and below the ESL for vapor intrusion concerns from groundwater (270 $\mu\text{g/L}$). Groundwater concentrations for other COCs in the source area were also below the applicable ESL concentrations for vapor intrusion concerns.

2.12.2 Assessment of Potential Human Health Concerns - Direct Contact with Soil

As described previously, the site is paved or covered by the building and no direct contact or soil incidental ingestions/dermal contact pathway exists for users of the site. Direct exposure for construction workers via contact with soil during temporary subsurface excavation or trenching is also regulated at the site by the Intrusive Earthwork Guidance Plan⁶, stipulating procedures for conducting subsurface work that are protective of the public and workers involved in subsurface work at the site.

⁴ Comparisons made using the latest interim final version released by the RWQCB in February 2013 (RWQCB, 2013).

⁵ Utilizing commercial land use scenario (fine-coarse mix), as defined in Table E-1 (RWQCB, 2013).

⁶ PES Environmental, Inc., 2005b. *Intrusive Earthwork Guidance Plan, the Atrium at Emery Bay Plaza, 1650 65th Street, Emeryville, California.* May 5.

As a conservative measure, site soil data was compared versus Table 1 of the Low Threat UST Case Closure Policy⁷. The relevant comparisons indicate:

- For commercial/industrial direct contact criteria, the maximum concentrations of petroleum hydrocarbon constituents are less than those listed for commercial/industrial use (0 to 5 feet below ground surface [bgs]) in Table 1 of the policy;
- The maximum concentration presented in Table 1 of the policy for volatilization from soil to outdoor air (commercial/industrial) exposure pathways for benzene and ethylbenzene is 12 and 134 milligrams per kilogram (mg/kg), respectively. The maximum benzene and ethylbenzene soil concentrations detected at the site in the vicinity of the release were 160 and 290 mg/kg, respectively (in soil sample SB-3-9 at a depth of 9.0 feet bgs). Based on direct comparison of maximum soil concentrations at the site versus the conservative screening level concentrations presented in Table 1⁸ for benzene and ethylbenzene (for volatilization to outdoor air), the estimated cumulative additional lifetime excess cancer risk (LECR) from benzene and ethylbenzene is approximately 1.5×10^{-5} , well within the range of 10^{-6} to 10^{-4} generally considered protective of human health at commercial use sites by the U.S. Environmental Protection Agency (U.S. EPA, 1989; SWRCB, 2012b). This assessment likely overstates the actual risk because of the absence of consistent outdoor receptors in the parking lot; and
- For utility worker direct contact criteria, concentrations exceed only the screening levels listed in Table 1 of the policy for benzene (14 mg/kg). The maximum benzene concentration in site soil samples was 160 mg/kg (sample SB-3-9 at a depth of 9.0 feet bgs). Direct comparison of the maximum concentrations to the conservative screening level indicates the LECR from the maximum benzene concentration is approximately 1.1×10^{-5} , also well within the range considered by the U.S. EPA as protective of human health for commercial sites.

3.0 SUMMARY OF CURRENT SITE CONDITIONS AND CONCLUSIONS

This SCM has been developed to assess the existing data and evaluate for significant data gaps as well as potential site user exposure to COCs identified at the site. Conditions at the site are summarized below:

⁷ As noted in the 2013 update to the ESLs (RWQCB, 2013), comparisons for LUFT sites should be made using the screening levels presented in Table 1 of the Low-Threat Underground Storage Tank Case Closure Policy (SWRCB, 2012b). The screening levels indicate concentrations for which there is no significant risk of adversely affecting human health.

⁸ The methodology for development of the conservative screening levels presented in Table 1 is provided in the SWRCB document entitled *Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways* (SWRCB, 2012a). For chemicals listed in Table 1, the final screening criteria was based on modeling concentrations that resulted in an estimated additional carcinogenic risk of 1×10^{-6} .

- Petroleum hydrocarbon-affected groundwater is representative of a stable, mature release, is limited to the vicinity of the former UST area, and does not extend off-site;
- There are no identified preferential pathways of significance;
- Results of linear regression analysis for affected groundwater within the source area demonstrate decreasing concentration trends, and concentrations of dissolved-phase petroleum hydrocarbon residuals are estimated to reach applicable screening levels within a reasonable time period;
- Petroleum residuals in soil appear to be limited to the vicinity of the former tank;
- The potential for construction worker exposure to petroleum residuals in the subsurface is mitigated by the presence of the building and parking lot pavement, and the requirements of the *Intrusion Earthwork Guidance Plan* for the site, which specifies health and safety precautions for any significant subsurface work that may occur in the future;
- Fuel-related VOC vapors and methane are not present beneath the southeastern portion of the building;
- Sufficient oxygen levels are present beneath the building in the vicinity of the former tank to facilitate current and future biological degradation processes;
- The methane collection system installed on the building in 2004/2005 provides considerable additional protection from potential petroleum vapor intrusion concerns, and effectively mitigates the vapor intrusion pathway for building occupants; and
- There are no significant data gaps that preclude evaluation of the case for closure under the SWRCB's Low-threat UST Case Closure Policy.

In summary, the soil, sub-slab vapor, and groundwater investigation and monitoring activities conducted at the site over the preceding 25 years have defined the extent of contamination and associated risks from the former fuel tank release, and no significant data gaps remain. It is recommended that the site be evaluated for closure under SWRCB's Low-Threat UST Closure Policy criteria.

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TABLES

Table 1
Summary of Groundwater Monitoring Well Construction Details
1650 65th Street
Emeryville, California

Well Identification	Top of Casing* (feet MSL)	Date Installed	Screened Interval (feet bgs)	Filter Pack Interval (feet bgs)	Screen Slot Size (inches)
EW-1	18.25	28-Mar-90	8.3 - 28.9	6.3 - 30.0	0.020
MW-2	18.24	28-Sep-89	8.3 - 28.0	7.0 - 29.0	0.020
MW-3	14.92	14-Nov-89	6.6 - 18.0	5.3 - 18.3	0.020
MW-4	14.73	15-Nov-89	6.1 - 15.8	5.1 - 16.3	0.020
MW-5	15.34	16-Nov-89	6.7 - 17.9	5.3 - 17.9	0.020
MW-6	14.53	27-Mar-90	7.1 - 21.8	5.7 - 22.1	0.020
MW-7	15.45	29-Mar-90	6.7 - 18.7	5.0 - 18.7	0.020
MW-8	17.52	22-Sep-94	6 - 26	4.0 - 26.0	0.020

Notes:

MSL - mean sea level, referenced to North American Vertical Datum of 1988 (NAVD88).

* Top of casing elevations from October 6, 2010 survey data.

bgs - below ground surface.

Table 2
Historical Depth-to-Groundwater and Groundwater Elevation Data
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)
MW-2	2/21/1990	15.75	11.72	4.03
	5/25/1990	15.75	11.83	3.92
	8/29/1990	15.75	11.72	4.03
	11/29/1990	15.75	11.99	3.76
	3/1/1991	15.79	12.87	2.92
	5/28/1991	15.79	12.21	3.58
	8/1/1991	15.79	NA	NA
	1/27/1992	15.79	11.78	4.01
	2/28/1992	15.79	11.70	4.09
	5/28/1992	15.79	11.83	3.96
	8/27/1992	15.79	12.28	3.51
	11/10/1992	15.79	12.40	3.39
	2/18/1993	15.79	12.00	3.79
	5/20/1993	15.79	12.00	3.79
	8/19/1993	15.79	12.11	3.68
	11/15/1993	15.79	11.64	4.15
	2/14/1994	15.79	11.45	4.34
	5/16/1994	15.79	11.25	4.54
	8/10/1994	15.79	11.22	4.57
	11/3/1994	15.79	11.32	4.47
	2/9/1995	15.79	10.64	5.15
	5/9/1995	15.79	10.60	5.19
	8/10/1995	15.79	10.98	4.81
	11/13/1995	15.79	11.18	4.61
	3/2/1996	15.79	10.42	5.37
	5/9/1996	15.79	10.78	5.01
	8/8/1996	15.79	10.56	5.23
	11/11/1996	15.79	10.64	5.15
	2/14/1997	15.79	10.29	5.50
	5/14/1997	15.79	10.60	5.19
	8/12/1997	15.79	10.87	4.92
	11/12/1997	15.79	10.64	5.15
	2/4/1998	15.79	10.83	4.96
5/18/1998	15.79	10.10	5.69	
8/11/1998	15.79	10.58	5.21	
12/17/1998	15.79	10.45	5.34	
10/7/1999	15.79	10.51	5.28	
10/12/2000	15.79	10.73	5.06	
10/6/2010*	18.24	10.36	7.88	
5/26/2011	18.24	10.29	7.95	
11/17/2011	18.24	10.73	7.51	
5/23/2012	18.24	10.58	7.66	
11/21/2012	18.24	11.02	7.22	
MW-3	2/21/1990	12.45	9.18	3.27
	5/25/1990	12.45	9.25	3.20
	8/29/1990	12.45	9.50	2.95
	11/29/1990	12.45	9.80	2.65
	3/1/1991	12.43	9.51	2.92
	5/28/1991	12.43	9.03	3.40
	8/1/1991	12.43	NA	NA
	1/27/1992	12.43	9.44	2.99
	2/28/1992	12.43	8.80	3.63
	5/28/1992	12.43	8.80	3.63
	8/27/1992	12.43	9.18	3.25
	11/10/1992	12.43	9.44	2.99

Table 2
Historical Depth-to-Groundwater and Groundwater Elevation Data
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)	
MW-3 Cont.	2/18/1993	12.43	7.59	4.84	
	5/20/1993	12.43	8.21	4.22	
	8/19/1993	12.43	8.71	3.72	
	11/15/1993	12.43	9.09	3.34	
	2/14/1994	12.43	8.84	3.59	
	5/16/1994	12.43	8.18	4.25	
	8/10/1994	12.43	8.72	3.71	
	11/3/1994	12.43	8.13	4.30	
	2/9/1995	12.43	6.86	5.57	
	5/9/1995	12.43	7.16	5.27	
	8/10/1995	12.43	8.00	4.43	
	11/13/1995	12.43	8.44	3.99	
	3/2/1996	12.43	7.31	5.12	
	5/9/1996	12.43	7.72	4.71	
	8/8/1996	12.43	8.22	4.21	
	11/11/1996	12.43	8.67	3.76	
	2/14/1997	12.43	7.18	5.25	
	5/14/1997	12.43	8.03	4.40	
	8/12/1997	12.43	7.39	5.04	
	11/12/1997	12.43	8.53	3.90	
	2/4/1998	12.43	7.39	5.04	
	5/18/1998	12.43	7.31	5.12	
	8/11/1998	12.43	7.95	4.48	
	12/17/1998	12.43	8.58	3.85	
	10/7/1999	12.43	8.25	4.18	
	10/12/2000	12.43	8.22	4.21	
	10/6/2010*	14.92	8.41	6.51	
	5/26/2011	14.92	7.72	7.20	
	11/17/2011	14.92	8.70	6.22	
	5/23/2012	14.92	8.29	6.63	
	11/21/2012	14.92	8.36	6.56	
	MW-4	2/21/1990	12.24	8.63	3.61
		5/25/1990	12.24	8.58	3.66
8/29/1990		12.24	8.50	3.74	
11/29/1990		12.24	8.74	3.50	
3/1/1991		12.24	8.65	3.59	
5/28/1991		12.24	8.57	3.67	
8/1/1991		12.24	NA	NA	
1/27/1992		12.24	8.62	3.62	
2/28/1992		12.24	8.52	3.72	
5/28/1992		12.94	8.35	3.89	
8/27/1992		12.24	9.00	3.24	
11/10/1992		12.24	8.85	3.39	
2/18/1993		12.24	8.17	4.07	
5/20/1993		12.24	8.21	4.03	
8/19/1993		12.24	8.20	4.04	
11/15/1993		12.24	8.33	3.91	
2/14/1994		12.24	8.30	3.94	
5/16/1994		12.24	8.20	4.04	
8/10/1994		12.24	8.14	4.10	
11/3/1994		12.24	8.30	3.94	
2/9/1995		12.24	8.11	4.13	
5/9/1995		12.24	7.76	4.48	
8/10/1995		12.24	7.91	4.33	
11/13/1995		12.24	7.95	4.29	
3/2/1996		12.24	7.89	4.35	
5/9/1996		12.24	7.64	4.60	
8/8/1996		12.24	7.76	4.48	
11/11/1996	12.24	8.00	4.24		
2/14/1997	12.24	7.63	4.61		
5/14/1997	12.24	7.78	4.46		

Table 2
Historical Depth-to-Groundwater and Groundwater Elevation Data
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)
MW-4 Cont.	8/12/1997	12.24	7.71	4.53
	11/12/1997	12.24	7.84	4.40
	2/4/1998	12.24	7.11	5.13
	5/18/1998	12.24	7.35	4.89
	8/11/1998	12.24	7.52	4.72
	12/17/1998	12.24	7.99	4.25
	10/7/1999	12.24	7.82	4.42
	10/12/2000	12.24	7.97	4.27
	10/6/2010*	14.73	8.03	6.70
	5/26/2011	14.73	7.83	6.90
	11/17/2011	14.73	8.02	6.71
	5/23/2012	14.73	8.10	6.63
	11/21/2012	14.73	7.79	6.94
	MW-5	2/21/1990	12.81	6.91
5/25/1990		12.81	7.58	5.23
8/29/1990		12.81	7.75	5.06
11/29/1990		12.81	8.17	4.64
3/1/1991		12.82	8.11	4.71
5/28/1991		12.82	7.39	5.43
8/1/1991		12.82	NA	NA
1/27/1992		12.82	7.90	4.92
2/28/1992		12.82	7.73	5.09
5/28/1992		12.82	7.18	5.64
8/27/1992		12.82	7.54	5.28
11/10/1992		12.82	7.90	4.92
2/18/1993		12.82	6.58	6.24
5/20/1993		12.82	6.29	6.53
8/19/1993		12.82	6.89	5.93
11/15/1993		12.82	7.43	5.39
2/14/1994		12.82	7.16	5.66
5/16/1994		12.82	6.50	6.32
8/10/1994		12.82	6.98	5.84
11/3/1994		12.82	7.36	5.46
2/9/1995		12.82	5.68	7.14
5/9/1995		12.82	5.36	7.46
8/10/1995		12.82	6.29	6.53
11/13/1995		12.82	6.89	5.93
3/2/1996		12.82	7.26	5.56
5/9/1996		12.82	6.00	6.82
8/8/1996		12.82	6.67	6.15
11/11/1996		12.82	6.69	6.13
2/14/1997		12.82	5.88	6.94
5/14/1997		12.82	6.25	6.57
8/12/1997		12.82	6.77	6.05
11/12/1997		12.82	7.21	5.61
2/4/1998		12.82	6.81	6.01
5/18/1998	12.82	4.81	8.01	
8/11/1998	12.82	6.38	6.44	
12/17/1998	12.82	7.00	5.82	
10/7/1999	12.82	7.23	5.59	
10/12/2000	12.82	7.30	5.52	
10/6/2010*	15.34	6.83	8.51	
5/26/2011	15.34	6.45	8.89	
11/17/2011	15.34	7.10	8.24	
5/23/2012	15.34	6.91	8.43	
11/21/2012	15.34	7.71	7.63	
MW-6	3/1/1991	12.03	8.59	3.44
	5/28/1991	12.03	8.35	3.68
	8/1/1991	12.03	NA	NA
	1/27/1992	12.03	8.32	3.71

Table 2
Historical Depth-to-Groundwater and Groundwater Elevation Data
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)
MW-6 Cont.	2/28/1992	12.03	8.08	3.95
	5/28/1992	12.03	8.04	3.99
	8/27/1992	12.03	8.48	3.55
	11/10/1992	12.03	8.52	3.51
	2/18/1993	12.03	8.14	3.89
	5/20/1993	12.03	8.46	3.57
	8/19/1993	12.03	8.61	3.42
	11/15/1993	12.03	8.30	3.73
	2/14/1994	12.03	8.09	3.94
	5/16/1994	12.03	7.82	4.21
	8/10/1994	12.03	8.46	3.57
	11/3/1994	12.03	8.16	3.87
	2/9/1995	12.03	7.66	4.37
	5/9/1995	12.03	8.57	3.46
	8/10/1995	12.03	7.72	4.31
	11/13/1995	12.03	8.15	3.88
	3/2/1996	12.03	8.02	4.01
	5/9/1996	12.03	7.64	4.39
	8/8/1996	12.03	7.53	4.50
	11/11/1996	12.03	8.45	3.58
	2/14/1997	12.03	7.58	4.45
	5/14/1997	12.03	8.62	3.41
	8/12/1997	12.03	7.62	4.41
	11/12/1997	12.03	8.56	3.47
	2/4/1998	12.03	6.56	5.47
	5/18/1998	12.03	7.29	4.74
	8/11/1998	12.03	7.25	4.78
	12/17/1998	12.03	8.42	3.61
	10/7/1999	12.03	7.62	4.41
	10/12/2000	12.03	8.05	3.98
10/6/2010*	14.53	8.19	6.34	
5/26/2011	14.53	7.95	6.58	
11/17/2011	14.53	8.37	6.16	
5/23/2012	14.53	7.91	6.62	
11/21/2012	14.53	8.16	6.37	
MW-7	3/1/1991	12.9	7.51	5.39
	5/28/1991	12.9	7.07	5.83
	8/1/1991	12.9	NA	NA
	1/27/1992	12.9	7.28	5.62
	2/28/1992	12.9	7.04	5.86
	5/28/1992	12.9	6.81	6.09
	8/27/1992	12.9	7.12	5.78
	11/10/1992	12.9	7.80	5.10
	2/18/1993	12.9	6.54	6.36
	5/20/1993	12.9	6.17	6.73
	8/19/1993	12.9	6.60	6.30
	11/15/1993	12.9	6.89	6.01
	2/14/1994	12.9	6.50	6.40
	5/17/1994	12.9	6.07	6.83
	8/10/1994	12.9	6.34	6.56
	11/3/1994	12.9	6.18	6.72
	2/9/1995	12.9	5.57	7.33
	5/9/1995	12.9	5.15	7.75
	8/10/1995	12.9	5.72	7.18
	11/13/1995	12.9	5.98	6.92
3/2/1996	12.9	6.02	6.88	
5/9/1996	12.9	6.11	6.79	
8/8/1996	12.9	6.87	6.03	
11/11/1996	12.9	6.39	6.51	
2/14/1997	12.9	5.97	6.93	
5/14/1997	12.9	5.89	7.01	

Table 2
Historical Depth-to-Groundwater and Groundwater Elevation Data
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)
MW-7 Cont.	8/12/1997	12.9	6.56	6.34
	11/12/1997	12.9	6.76	6.14
	2/4/1998	12.9	5.94	6.96
	5/18/1998	12.9	4.19	8.71
	8/11/1998	12.9	6.21	6.69
	12/17/1998	12.9	6.80	6.10
	10/7/1999	12.9	NM	NM
	10/12/2000	12.9	7.18	5.72
	10/6/2010*	15.45	5.78	9.67
	5/26/2011	15.45	5.80	9.65
	11/17/2011	15.45	7.10	8.35
	5/23/2012	15.45	5.97	9.48
	11/21/2012	15.45	4.44	11.01
	MW-8	11/3/1994	15.01	11.06
2/9/1995		15.01	10.23	4.78
2/9/1995		15.01	10.48	4.53
8/10/1995		15.01	10.74	4.27
11/13/1995		15.01	11.02	3.99
3/2/1996		15.01	10.11	4.90
5/9/1996		15.01	10.50	4.51
8/8/1996		15.01	10.04	4.97
11/11/1996		15.01	10.55	4.46
2/14/1997		15.01	9.95	5.06
5/14/1997		15.01	10.08	4.93
8/12/1997		15.01	10.63	4.38
11/12/1997		15.01	10.13	4.88
2/4/1998		15.01	10.17	4.84
5/18/1998		15.01	9.49	5.52
8/11/1998		15.01	10.57	4.44
12/17/1998		15.01	10.52	4.49
10/7/1999		15.01	NM	NM
10/12/2000		15.01	10.15	4.86
10/6/2010*		17.52	10.85	6.67
5/26/2011	17.52	10.46	7.06	
11/17/2011	17.52	10.85	6.67	
5/23/2012	17.52	10.61	6.91	
11/21/2012	17.52	10.54	6.98	
EW-1	10/6/2010	18.25	10.39	7.86
	5/26/2011	18.25	10.30	7.95
	11/17/2011	18.25	10.61	7.64
	5/23/2012	18.25	10.49	7.76
	11/21/2012	18.25	11.01	7.24

Notes:

MSL - mean sea level, referenced to North American Vertical Datum of 1988 (NAVD88).

btoc - below top of casing

* = Well top-of-casing resurveyed on October 6, 2010. Earlier survey datum unknown.

Table 3
Historical Soil Analytical Data
1650 65th Street
Emeryville, California

Sample ID	Sample Depth (ft bgs)	Sample Location	Date	TPHmo (mg/Kg)	TFH (mg/Kg)	TPHd (mg/Kg)	TPHg (mg/Kg)	VOCs										
								Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	TBA (mg/Kg)	MTBE (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	1,2-DCA (mg/Kg)	TAME (mg/Kg)	1,2-DBA (mg/Kg)
N-1	12.0	Beneath northern end of tank	7/2/1987	--	<0.1	--	--	<0.03	<0.03	<0.04	<0.04	--	--	--	--	--	--	--
S-1	12.0	Beneath southern end of tank	7/2/1987	--	<0.1	--	--	<0.03	<0.03	<0.04	<0.04	--	--	--	--	--	--	--
FP-1	3.0	Beneath product line	7/2/1987	--	490	--	--	<1.0	0.9	<1.0	23	--	--	--	--	--	--	--
N-1	12.0	Beneath Tanks	7/2/1987	--	ND	--	--	--	ND	--	ND	--	--	--	--	--	--	--
S-1	12.0	Beneath Tanks	7/2/1987	--	ND	--	--	--	ND	--	ND	--	--	--	--	--	--	--
FP-1	3.0	Beneath product line	7/2/1987	--	490	--	--	--	0.9	--	23	--	--	--	--	--	--	--
BW-1	12.5	Bottom of Excavation	2/24/1988	--	4,800	--	--	--	200	--	350	--	--	--	--	--	--	--
BW-2	17	Bottom of Excavation	3/9/1988	--	390	--	--	--	56	--	51	--	--	--	--	--	--	--
SW-1	8 , 9.5	Sides of Excavation	2/24/1988	--	6.5	--	--	--	0.11	--	0.25	--	--	--	--	--	--	--
SNE-1	9.5	Sides of Excavation	2/24/1988	--	520	--	--	--	5.6	--	78	--	--	--	--	--	--	--
BE-2	17	Bottom of Excavation	3/9/1988	--	ND	--	--	--	ND	--	ND	--	--	--	--	--	--	--
MW-4	5.5	MW-4	11/15/1989	--	--	--	<10	<0.005	0.010	<0.005	0.010	--	--	--	--	--	--	--
MW-6	6.5-7.0	MW-6	3/27/1990	--	--	--	ND	ND	ND	ND	ND							
SB-1-4.5	4.5	SB-1	3/20/2012	110	--	9.2 Y	<0.23	<0.0049	<0.0049	<0.0049	<0.0049	<0.097	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
SB-1-9	9.0	SB-1	3/20/2012	13	--	4.6 Y	0.91	0.240	0.015	<0.0066	0.0073	<0.13	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066
SB-1-14	14.0	SB-1	3/20/2012	510	--	140 Y	250	0.48	7.4	6.0	31.3	<4.0	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SB-1-20	20.0	SB-1	3/20/2012	520	--	440	3.1 Y	0.056	0.018	<0.0060	<0.0060	<0.120	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB-2-4.5	4.5	SB-2	3/20/2012	410	--	48 Y	0.24	<0.0058	<0.0058	<0.0058	<0.0058	<0.120	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
SB-2-8.5	8.5	SB-2	3/20/2012	280	--	27 Y	4.0	0.021	<0.015	0.120	0.367	<0.30	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
SB-2-13	13.0	SB-2	3/20/2012	320	--	1,200 Y	8,600	8.9	100	75	353	<86.0	<4.300	<4.300	<4.300	<4.300	<4.300	<4.300
SB-2-21	21.0	SB-2	3/20/2012	28	--	20 Y	3.0	0.029	0.011	<0.0069	0.0069	<0.14	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069
SB-3-4.5	4.5	SB-3	3/21/2012	600	--	110 Y	22	<0.450	<0.450	<0.450	1.2	<9.0	<0.450	<0.450	<0.450	<0.450	<0.450	<0.450
SB-3-9	9.0	SB-3	3/21/2012	1,300	--	130 Y	7,500	160	21	290	1,080	<320	<16.0	<16.0	<16.0	<16.0	<16.0	<16.0
SB-3-16	16.0	SB-3	3/21/2012	110	--	42 Y	1.0	0.150	0.180	0.023	0.086	<0.085	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
SB-3-20	20.0	SB-3	3/21/2012	6.9	--	3.5 Y	2.3	0.016	0.100	0.059	0.274	<0.085	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
SB-4-4.5	4.5	SB-4	3/21/2012	620	--	99 Y	<0.22	<0.0050	<0.0050	<0.0050	<0.0050	<0.099	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-4-9	9.0	SB-4	3/21/2012	1,600	--	970 Y	11	1.1	<0.210	<0.210	0.430	<4.20	<0.210	<0.210	<0.210	<0.210	<0.210	<0.210
SB-4-16	16.0	SB-4	3/21/2012	130	--	130 Y	1.8	0.2	0.1	0.044	0.176	<0.13	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066
SB-4-20	20.0	SB-4	3/21/2012	<5.0	--	1.4 Y	<0.17	<0.0056	<0.0056	<0.0056	0.0058	<0.110	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
SB-5-4.5	4.5	SB-5	3/21/2012	20	--	4.1 Y	3.8	0.040	<0.0063	<0.0063	0.037	<0.130	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB-5-9.5	9.5	SB-5	3/21/2012	76	--	270 Y	13,000	<15	240	210	930	<310.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0
SB-5-16	16.0	SB-5	3/21/2012	190	--	130 Y	0.81	0.160	0.037	<0.0042	<0.0042	<0.084	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042
SB-5-20	20.0	SB-5	3/21/2012	<5.0	--	2.5 Y	<0.20	<0.0042	<0.0042	<0.0042	<0.0042	<0.085	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042

Notes:

VOCs = Volatile Organic Compounds
 mg/kg = milligrams per kilogram
 ft bgs = Feet below ground surface
 < 0.15 = Not detected at or above the indicated laboratory reporting limit
 -- = Not analyzed or not applicable
 Y = Sample exhibits chromatographic pattern that does not resemble standard.
 TPHmo = Total petroleum hydrocarbons quantified as motor oil
 TFH = Total Fuel Hydrocarbons
 TPHd = Total petroleum hydrocarbons quantified as diesel
 TPHg = Total petroleum hydrocarbons quantified as gasoline
 ND = Not detected at or above the method detection limit (detection limit unknown)

TBA = tert-Butyl Alcohol
 MTBE = Methyl tert-Butyl Ether
 DIPE = Diisopropyl Ether
 ETBE = Ethyl tert-Butyl Ether
 TAME = Methyl tert-Amyl Ether
 1,2-DCA = 1,2-Dichloroethane
 1,2-DBA = 1,2-Dibromoethane

Table 4
Historical Groundwater Analytical Data
1650 65th Street
Emeryville, California

Sample Identification	Date Collected	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	BTEX & Fuel Oxygenates					HVOCs		Metals (mg/L)	TDS (mg/L)
					Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Other (µg/L)	Purgeable Halocarbons	TCE (µg/L)		
EW-1	5/1/1990	--	ND	20,000	7,500	4,500	1,000	6,300	--	68	--	--	--
	8/1/1990	--	3500	NA	6,000	4,200	ND	4,600	--	1,2 DCA : 16	--	--	--
	11/1/1990	--	3100	47,000	6,000	3,400	1,000	4,700	--	--	--	--	--
	12/17/1990	--	--	NA	11,000	7,900	2,200	10,000	--	--	--	--	--
	12/19/1990	--	--	NA	3,700	2,500	ND	2,300	--	--	--	--	--
	12/21/1990	--	--	NA	3,200	2,200	ND	1,700	--	--	--	--	--
	12/27/1990	--	--	NA	2,900	2,100	160	1,500	--	--	--	--	--
	1/4/1991	--	--	NA	3,200	2,800	ND	ND	--	--	--	--	--
	1/11/1991	--	--	NA	3,000	2,400	200	1,800	--	--	--	--	--
	2/6/1991	--	--	NA	470	230	11	390	--	--	--	--	--
	2/13/1991	--	--	NA	1,200	280	ND	360	--	--	--	--	--
	3/15/1991	--	--	NA	130	85	6	170	--	--	--	--	--
	7/3/1991	--	--	NA	1,300	950	220	1,400	--	--	--	--	--
	8/1/1991	--	--	NA	220	190	13	270	--	--	--	--	--
	8/16/1991	--	--	NA	170	160	13	190	--	--	--	--	--
	11/13/1991	--	--	NA	3,100	270	40	220	--	--	--	--	--
	1/29/1992	--	--	2,700	570	150	7	260	--	--	--	--	--
	3/26/1992	--	--	25,000	3,600	2,600	530	2,600	--	--	--	--	--
	5/28/1992	--	--	16,000	3,300	3,200	750	2,600	--	--	--	--	--
	6/29/1992	--	--	7,000	2,200	3,100	270	1,400	--	--	--	--	--
	7/21/1992	--	--	1,600	220	17	<0.5	100	--	--	--	--	--
	8/27/1992	--	--	NS	NS	NS	NS	NS	--	--	--	--	--
	9/23/1992	--	--	5,200	1,100	590	100	1,000	--	--	--	--	--
	10/27/1992	--	--	1,300	220	61	5	110	--	--	--	--	--
	11/24/1992	--	--	7,100	1,400	1,100	120	890	--	--	--	--	--
	2/18/1993	--	--	7,200	1,400	930	210	1,000	--	--	--	--	--
	3/9/1993	--	--	4,600	990	750	62	840	--	--	--	--	--
	4/21/1993	--	--	4,900	270	180	20	190	--	--	--	--	--
	5/13/1993	--	--	2,600	520	110	23	330	--	--	--	--	--
	6/28/1993	--	--	9,500	1,900	460	230	1,000	--	--	--	--	--
	8/1/1993	--	--	1,300	<2.0	<2.0	<2.0	400	--	--	--	--	--
	11/15/1993	--	--	46,000	2,900	380	500	1,700	--	--	--	--	--
	2/14/1994	--	--	21,000	4,500	860	1,000	2,800	--	--	--	--	--
5/16/1994	--	--	19,000	7,300	930	1,300	3,300	--	--	--	--	--	
8/10/1994	--	--	19,000	4,200	490	1,100	1,500	--	--	--	--	--	
11/3/1994	--	--	20,000	6,000	230	1,400	1,400	--	--	--	--	--	
2/9/1995	--	--	8,700	1,800	110	380	740	--	--	--	--	--	
5/9/1995	--	--	6,600	1,100	51	270	380	--	--	--	--	--	
8/10/1995	--	--	2,600	410	16	110	97	--	--	--	--	--	
11/13/1995	--	--	14,000	2,900	110	550	440	--	--	--	--	--	
2/13/1996	--	--	3,700	1,000	220	170	280	--	--	--	--	--	
5/9/1996	--	--	970	230	50	39	47	--	--	--	--	--	
8/8/1996	--	--	740	200	63	25	49	--	--	--	--	--	
11/11/1996	--	--	640	340	110	34	90	--	--	--	--	--	
2/14/1997	--	--	420	1,600	43	260	40	--	--	--	--	--	
5/14/1997	--	--	2,200	940	11	64	68	--	--	--	--	--	
8/12/1997	--	--	3,200	1,400	28	86	110	--	--	--	--	--	
11/12/1997	--	--	2,000	790	45	28	90	--	--	--	--	--	
2/4/1998	--	--	7,200	2,600	190	310	140	--	--	--	--	--	
5/18/1998	--	--	1,500	820	19	71	67	--	--	--	--	--	
8/11/1998	--	--	5,100	1,200	7	75	210	--	--	--	--	--	
12/17/1998	--	--	5,900	2,200	160	4	310	MTBE : 400	--	--	--	--	
10/7/1999	--	--	11,000	3,100	98	490	890	--	--	--	--	--	
10/12/2000	--	--	7,700	3,000	56	380	200	--	--	--	--	--	
10/7/2010	--	--	1,200	170	36	6.5	16.2	All ND	--	--	--	--	
5/26/2011	< 300	--	1,100	110	4.3	1.6	8.4	All ND	All ND	< 1.0	ND*	720	
11/17/2011	--	--	1,100	73	27	3.8	11.1	DIPE : 0.62	--	--	--	--	
5/23/2012	--	--	1,500	55	8.7	1.4	17	All ND	--	--	--	--	
11/21/2012	--	--	1,600	83	13	3.4	17.1	1,2-DCE : 0.51; DIPE : 0.51	--	--	--	--	
MW-2	11/1/1989	--	NA	100,000	8,400	7,400	2,400	13,000	--	1,2 DCA : 15	--	Lead : 0.050	--
	2/1/1990	--	NA	54,000	7,800	5,600	1,600	8,400	--	1,2 DCA : 32	--	Lead : 0.021	--
	5/1/1990	--	NA	40,000	7,800	7,500	1,600	7,600	--	1,2 DCA : 76	--	Lead : 0.025	--

Table 4
Historical Groundwater Analytical Data
1650 65th Street
Emeryville, California

Sample Identification	Date Collected	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	BTEX & Fuel Oxygenates					HVOCs		Metals (mg/L)	TDS (mg/L)
					Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Other (µg/L)	Purgeable Halocarbons	TCE (µg/L)		
	8/1/1990	--	4,600	49,000	9,000	8,000	ND	8,900	--	1,2 DCA : 40	--	Lead : 0.0059	--
	11/1/1990	--	3,500	73,000	6,900	5,900	1,400	7,400	--	--	--	--	--
	3/1/1991	--	1,800	72,000	5,500	6,600	1,000	7,700	--	--	--	--	--
	5/1/1991	--	ND	31,000	8,400	4,700	1,700	6,300	--	--	--	--	--
	8/1/1991	--	ND	47,000	7,600	1,600	7,300	7,800	--	--	--	--	--
	1/29/1992	--	--	77,000	10,000	8,700	2,000	7,600	--	--	--	--	--
	2/28/1992	--	--	70,000	9,100	6,400	530	7,400	--	--	--	--	--
	5/28/1992	--	--	54,000	8,000	4,800	2,400	6,200	--	--	--	--	--
	8/27/1992	--	--	47,000	2,700	2,900	3,400	9,200	--	--	--	--	--
	11/10/1992	--	<20,000	45,000	6,600	4,000	2,000	5,800	--	<50	--	--	--
	2/18/1993	--	--	14,000	2,300	810	670	1,400	--	--	--	--	--
	5/20/1993	--	--	43,000	7,300	5,200	1,500	5,500	--	--	--	--	--
	8/19/1993	--	--	45,000	4,900	3,700	1,300	3,400	--	--	--	--	--
	11/15/1993	--	--	97,000	6,100	1,700	1,700	4,100	--	--	--	--	--
	2/14/1994	--	--	27,000	5,000	830	1,200	3,100	--	--	--	--	--
	5/16/1994	--	--	77,000	6,800	1,100	1,400	3,300	--	--	--	--	--
	8/10/1994	--	--	25,000	5,600	750	1,400	1,700	--	--	--	--	--
	11/3/1994	--	--	24,000	7,200	500	1,500	1,600	--	--	--	--	--
	2/9/1995	--	--	12,000	2,200	100	480	940	--	--	--	--	--
	5/9/1995	--	--	7,800	1,300	78	340	480	--	--	--	--	--
	8/10/1995	--	--	5,300	1,300	150	240	270	--	--	--	--	--
	11/13/1995	--	--	8,500	2,100	250	430	440	--	--	--	--	--
	2/13/1996	--	--	5,200	1,500	190	210	290	--	--	--	--	--
	5/9/1996	--	--	1,700	370	130	60	90	--	--	--	--	--
	8/8/1996	--	--	4,500	1,200	490	160	380	--	--	--	--	--
	11/11/1996	--	--	6,000	2,100	920	200	590	--	--	--	--	--
	2/14/1997	--	--	3,800	1,500	56	240	40	--	--	--	--	--
	5/14/1997	--	--	3,600	2,000	100	160	220	--	--	--	--	--
	8/12/1997	--	--	7,300	3,200	330	290	420	--	--	--	--	--
	11/12/1997	--	--	8,900	3,000	1,300	330	750	--	--	--	--	--
	2/4/1998	--	--	7,600	2,800	190	410	150	--	--	--	--	--
	5/18/1998	--	--	2,200	1,300	240	78	120	--	--	--	--	--
	8/11/1998	--	--	11,000	2,300	420	290	770	--	--	--	--	--
	12/17/1998	--	--	14,000	3,500	490	490	580	--	--	--	--	--
	10/7/1999	--	--	11,000	4,800	1,500	810	1,600	--	--	--	--	--
	10/7/2000	--	--	16,000	3,800	1,300	730	1,800	--	--	--	--	--
	10/7/2010	--	--	6,100	700	510	190	641	All ND	--	--	--	--
	5/26/2011	< 300	--	1,900	220	18	8	54.5	All ND	All ND	<2.0	ND*	790
	11/17/2011	--	--	2,400	270	120	29	135	All ND	--	--	--	--
	5/23/2012	--	--	2,000	200	75	26	109	All ND	--	--	--	--
	11/21/2012	--	--	2,700	310	170	42	197	All ND	--	--	--	--
MW-3	11/1/1989	--	--	130	2.2	ND	ND	3	--	ND	--	--	--
	2/1/1990	--	--	ND	2.5	ND	ND	ND	--	--	--	Lead : 0.011	--
	5/1/1990	--	ND	ND	2	ND	ND	ND	--	--	--	--	--
	8/1/1990	--	800	ND	4.4	2.9	ND	5.4	--	--	--	--	--
	11/30/1990	--	800	900	3.4	ND	ND	ND	--	--	--	--	--
	3/1/1991	--	ND	ND	25	25	5.3	320	--	--	--	--	--
	5/1/1991	--	ND	ND	2.6	ND	ND	ND	--	--	--	--	--
	8/1/1991	--	ND	ND	1.9	ND	ND	ND	--	--	--	--	--
	1/29/1992	--	--	92	2.4	<0.3	0.6	<0.3	--	--	--	--	--
	2/28/1992	--	--	160	2.8	<0.3	0.7	0.5	--	--	--	--	--
	5/28/1992	--	--	<50	2.5	<0.5	<0.5	<0.5	--	--	--	--	--
	8/27/1992	--	--	370	4	<1	<0.5	<0.5	--	--	--	--	--
	11/10/1992	--	<100	240	4.2	<0.3	<0.3	<0.6	--	<0.3	--	--	--
	2/18/1993	--	--	140	1.8	<0.5	<0.5	<0.5	--	--	--	--	--
	5/20/1993	--	--	72	3.1	<0.5	<0.5	<0.5	--	--	--	--	--
	8/19/1993	--	--	<50	3.2	<0.5	<0.5	0.7	--	--	--	--	--

Table 4
Historical Groundwater Analytical Data
1650 65th Street
Emeryville, California

Sample Identification	Date Collected	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	BTEX & Fuel Oxygenates					HVOCs		Metals (mg/L)	TDS (mg/L)	
					Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Other (µg/L)	Purgeable Halocarbons	TCE (µg/L)			
MW-4	11/15/1993	--	--	70	2.3	0.7	<0.5	1.5	--	--	--	--	--	
	2/14/1994	--	--	120	5.3	2.3	1.2	4.2	--	--	--	--	--	
	5/16/1994	--	--	120	3.1	<0.5	<0.5	1.7	--	--	--	--	--	
	8/10/1994	--	--	100	3	<0.5	0.5	<2	--	--	--	--	--	
	11/3/1994	--	--	100	3	<0.5	<0.5	<2	--	--	--	--	--	
	2/9/1995	--	--	100	2	<0.5	<0.5	<2	--	--	--	--	--	
	5/9/1995	--	--	100	3	<0.5	0.5	<2	--	--	--	--	--	
	8/10/1995	--	--	100	3	<0.5	<0.5	<2	--	--	--	--	--	
	11/13/1995	--	--	<50	3	<0.5	<0.5	<2	--	--	--	--	--	
	10/7/2010	--	--	110	4.2	0.90	0.80	1.8	MTBE : 1.4	--	--	--	--	--
	11/1/1989	--	--	200	2.3	ND	ND	ND	--	ND	--	--	--	--
	2/1/1990	--	--	ND	ND	ND	ND	ND	--	--	--	Lead : 0.006	--	--
	5/1/1990	--	ND	ND	1	ND	ND	ND	--	--	--	--	--	--
	8/1/1990	--	800	ND	8.9	71	ND	9.4	--	--	--	--	--	--
	11/1/1990	--	700	ND	2.7	ND	ND	ND	--	--	--	--	--	--
	3/1/1991	--	ND	--	3	ND	ND	ND	--	--	--	--	--	--
	5/1/1991	--	ND	--	2.4	ND	ND	ND	--	--	--	--	--	--
	8/1/1991	--	ND	--	1.5	ND	ND	ND	--	--	--	--	--	--
	1/29/1992	--	--	--	<50	2.2	0.4	<0.3	0.7	--	--	--	--	--
	2/28/1992	--	--	--	<50	1.6	<0.3	<0.3	0.3	--	--	--	--	--
	5/28/1992	--	--	--	<50	1.5	<0.5	<0.5	<0.5	--	--	--	--	--
	8/27/1992	--	--	--	80	3	<1	<0.5	0.5	--	--	--	--	--
	11/10/1992	--	<100	--	180	60	900	<0.3	<0.6	--	<0.0003	--	--	--
	2/18/1993	--	--	--	60	1.7	<0.5	<0.5	<0.5	--	--	--	--	--
	5/20/1993	--	--	--	<50	2.2	<0.5	<0.5	<0.5	--	--	--	--	--
	8/19/1993	--	--	--	<50	2	0.6	<0.5	0.5	--	--	--	--	--
	11/15/1993	--	--	--	<50	2	0.5	<0.5	0.9	--	--	--	--	--
	2/14/1994	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	5/16/1994	--	--	--	<50	1.7	0.90	<0.5	1.1	--	--	--	--	--
	8/10/1994	--	--	--	<50	2	<0.5	<0.5	<2	--	--	--	--	--
	11/3/1994	--	--	--	60	2	<0.5	<0.5	<2	--	--	--	--	--
	2/9/1995	--	--	--	60	2	0.60	<0.5	<2	--	--	--	--	--
	5/9/1995	--	--	--	70	1	<0.5	<0.5	<2	--	--	--	--	--
	8/10/1995	--	--	--	<50	1	<0.5	<0.5	<2	--	--	--	--	--
11/13/1995	--	--	--	<50	3	<0.5	<0.5	<2	--	--	--	--	--	
2/13/1996	--	--	--	<50	1.3	<0.5	<0.5	<2	--	--	--	--	--	
5/9/1996	--	--	--	<50	0.9	<0.5	<0.5	<2	--	--	--	--	--	
8/8/1996	--	--	--	<50	0.9	<0.5	<0.5	<2	--	--	--	--	--	
11/11/1996	--	--	--	<50	1.3	0.6000	<0.5	<2	--	--	--	--	--	
2/14/1997	--	--	--	<50	0.6	<0.5	<0.5	<2	--	--	--	--	--	
5/14/1997	--	--	--	<50	0.9	<0.5	<0.5	<2	--	--	--	--	--	
8/12/1997	--	--	--	<50	0.9	<0.5	<0.5	<2	--	--	--	--	--	
11/12/1997	--	--	--	<50	1.3	<0.5	<0.5	<2	--	--	--	--	--	
2/4/1998	--	--	--	50	1.9	1.8000	1.1	4.0	--	--	--	--	--	
5/18/1998	--	--	--	<50	0.91	<0.5	<0.5	1.1	--	--	--	--	--	
8/11/1998	--	--	--	<50	0.63	<0.5	<0.5	<0.5	--	--	--	--	--	
12/17/1998	--	--	--	<0.1	<1	<1	<1	<1	--	--	--	--	--	
10/7/1999	--	--	--	<50	1.5	<0.5	<0.5	<0.5	--	--	--	--	--	
10/7/2000	--	--	--	<50	1.3	<0.5	<0.5	<0.5	--	--	--	--	--	
10/7/2010	--	--	--	52	1.5	<0.50	<0.50	<0.50	TBA : 14	--	--	--	--	
5/26/2011	<300	--	--	64 Y	1.0	<0.50	<0.50	<0.50	TBA : 15	All ND	<0.5	ND*	5,340	
11/17/2011	--	--	--	<50	1.3	<0.50	<0.50	<0.50	All ND	--	--	--	--	
5/23/2012	--	--	--	<50	1.4	<0.50	<0.50	<0.50	TBA : 11	--	--	--	--	
11/21/2012	--	--	--	<50	1.8	<0.50	<0.50	<0.50	All ND	--	--	--	--	

Table 4
Historical Groundwater Analytical Data
1650 65th Street
Emeryville, California

Sample Identification	Date Collected	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	BTEX & Fuel Oxygenates					HVOCs		Metals (mg/L)	TDS (mg/L)
					Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Other (µg/L)	Purgeable Halocarbons	TCE (µg/L)		
MW-5	11/1/1989	--	--	ND	74	ND	ND	4.2	--	ND	--	--	--
	2/1/1990	--	--	ND	200	ND	ND	ND	--	--	--	Lead : 0.012	--
	5/1/1990	--	ND	ND	110	ND	ND	ND	--	--	--	--	--
	8/1/1990	--	700	ND	66	2.2	ND	3.8	--	--	--	--	--
	11/1/1990	--	900	600	69	ND	ND	ND	--	--	--	--	--
	3/1/1991	--	1100	ND	66	2.3	ND	ND	--	--	--	--	--
	5/1/1991	--	ND	ND	110	ND	ND	ND	--	--	--	--	--
	8/1/1991	--	ND	ND	78	2.1	ND	ND	--	--	--	--	--
	1/29/1992	--	--	190	90	0.5	<0.3	0.6	--	--	--	--	--
	2/28/1992	--	--	230	110	0.9	<0.3	0.5	--	--	--	--	--
	5/28/1992	--	--	130	100	<0.5	<0.5	<0.5	--	--	--	--	--
	8/27/1992	--	--	520	83	2	<0.5	<0.5	--	--	--	--	--
	11/10/1992	--	<100	240	74	1	<0.3	<0.6	--	<0.0003	--	--	--
	2/18/1993	--	--	190	56	0.6	<0.5	<0.5	--	--	--	--	--
	5/20/1993	--	--	<200	56	<2	<2	<2	--	--	--	--	--
	8/19/1993	--	--	170	50	0.7	<0.5	<0.5	--	--	--	--	--
	11/15/1993	--	--	220	49	1	<1	<1	--	--	--	--	--
	2/14/1994	--	--	140	62	<0.5	<0.5	<0.5	--	--	--	--	--
	5/16/1994	--	--	310	140	3	<3	<3	--	--	--	--	--
	8/12/1994	--	--	500	95	34	4	14	--	--	--	--	--
	11/3/1994	--	--	400	79	0.6	<0.5	<2	--	--	--	--	--
	2/9/1995	--	--	300	74	0.8	<0.5	<0.2	--	--	--	--	--
	5/9/1995	--	--	200	47	0.5	<0.5	<2	--	--	--	--	--
8/10/1995	--	--	200	46	0.5	<0.5	<2	--	--	--	--	--	
11/13/1995	--	--	300	48	0.7	<0.5	<2	--	--	--	--	--	
3/6/2010	--	--	250 Y	99 Y	<0.50	<0.50	<0.50	<0.50	MTBE : 2.0	--	--	--	1,290
MW-6	5/1/1990	--	ND	--	ND	ND	ND	ND	--	ND	--	--	--
	8/1/1990	--	ND	--	--	--	--	--	--	--	--	--	--
	11/1/1990	--	1400	1200	1.2	ND	ND	ND	--	0.0012	--	--	--
	3/1/1991	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--
	5/1/1991	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--
	8/1/1991	--	ND	ND	ND	ND	ND	ND	--	--	--	--	--
	1/29/1992	--	--	<50	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--
	2/28/1992	--	--	<50	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--
	5/28/1992	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	8/27/1992	--	--	<50	<0.5	<1	<0.5	<0.5	--	--	--	--	--
	11/10/1992	--	<100	<50	<0.3	<0.3	<0.3	<0.6	--	<0.0003	--	--	--
	2/18/1993	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	5/20/1993	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	8/19/1993	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	11/15/1993	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	2/14/1994	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	5/16/1994	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	8/10/1994	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
	11/3/1994	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
	2/9/1995	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
	5/9/1995	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
	8/10/1995	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
	11/13/1995	--	--	<50	<0.5	<0.5	<0.5	<2	--	--	--	--	--
10/7/2010	--	--	<50	1.7	1.0	0.9	2.3	All ND	--	--	--	--	
5/26/2011	<300	--	<50	<0.50	<0.50	<0.50	<0.50	All ND	All ND	<0.5	ND*	4,440	
11/17/2011	--	--	<50	<0.50	<0.50	<0.50	<0.50	All ND	--	--	--	--	
5/23/2012	--	--	<50	<0.50	<0.50	<0.50	<0.50	All ND	--	--	--	--	
11/21/2012	--	--	<50	<0.50	<0.50	<0.50	<0.50	All ND	--	--	--	--	
MW-7	5/1/1990	--	600	--	240	ND	ND	ND	--	--	--	--	--
	8/1/1990	--	ND	ND	81	1.8	ND	ND	--	--	--	--	--
	11/1/1990	--	800	ND	54	ND	ND	ND	--	--	--	--	--
	3/1/1991	--	ND	ND	100	3.6	ND	ND	--	--	--	--	--
	5/1/1991	--	ND	ND	120	2.7	ND	ND	--	--	--	--	--
8/1/1991	--	ND	ND	74	3.3	ND	ND	--	--	--	--	--	

Table 4
Historical Groundwater Analytical Data
1650 65th Street
Emeryville, California

Sample Identification	Date Collected	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	BTEX & Fuel Oxygenates					HVOCs		Metals (mg/L)	TDS (mg/L)
					Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Other (µg/L)	Purgeable Halocarbons	TCE (µg/L)		
MW-8	1/29/1992	--	--	270	25	0.5	<0.3	0.8	--	--	--	--	--
	2/28/1992	--	--	100	33	0.7	<0.3	0.7	--	--	--	--	--
	5/28/1992	--	--	150	21	<0.5	<0.5	<0.5	--	--	--	--	--
	8/27/1992	--	--	440	11	1	<0.5	<0.5	--	--	--	--	--
	11/10/1992	--	<100	370	31	1.2	<0.3	1.2	--	--	--	--	--
	2/18/1993	--	--	270	77	1.3	<0.5	1.4	--	--	--	--	--
	5/20/1993	--	--	300	150	3	<2	3	--	--	--	--	--
	8/19/1993	--	--	110	40	1	<0.5	1.1	--	--	--	--	--
	11/15/1993	--	--	120	15	0.6	<0.5	2.3	--	--	--	--	--
	2/14/1994	--	--	120	38	<0.5	<0.5	<0.5	--	--	--	--	--
	5/17/1994	--	--	300	61	<3	<3	<3	--	--	--	--	--
	8/10/1994	--	--	100	9	<0.5	<0.5	<2	--	--	--	--	--
	11/3/1994	--	--	100	3	<0.5	<0.5	<2	--	--	--	--	--
	2/9/1995	--	--	200	50	0.6	<0.5	<2	--	--	--	--	--
	5/9/1995	--	--	300	120	1	<0.5	<2	--	--	--	--	--
	8/10/1995	--	--	<50	7	<0.5	<0.5	<2	--	--	--	--	--
	11/13/1995	--	--	90	3	<0.5	<0.5	<2	--	--	--	--	--
	3/6/2010	--	--	<50	<1	<1	<1	<1	All ND	--	--	--	780
	11/3/1994	--	--	<50	<50	1.0	<0.5	<0.5	<2	--	--	--	--
	2/9/1995	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	5/9/1995	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	8/10/1995	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	11/13/1995	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	2/13/1996	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	5/9/1996	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	8/8/1996	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	11/11/1996	--	--	<50	<50	<0.5	0.9	<0.5	<2	--	--	--	--
	2/14/1997	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	5/14/1997	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	8/12/1997	--	--	<50	<50	<0.5	<0.5	<0.5	<2	--	--	--	--
	11/12/1997	--	--	<50	<50	3.30	2.3	<0.5	<2	--	--	--	--
	2/4/1998	--	--	<50	<50	1.10	<0.5	<0.5	<2	--	--	--	--
	5/18/1998	--	--	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
8/11/1998	--	--	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
12/17/1998	--	--	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
10/7/1999	--	--	NS	NS	NS	NS	NS	NS	--	--	--	--	
10/12/2000	--	--	<50	<0.0005	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
10/6/2010	--	--	2,900	1,500	15	<10	10	All ND	--	--	--	--	
5/26/2011	--	<300 / <300	--	<50 / <50	0.60 / 0.70	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	All ND	All ND	3.7 / 3.6	ND*	2,710 / 2,750
11/17/2011	--	--	--	73 / 65	570 / 520	6.3 / 5.1	0.76 / 0.63	4.2 / 3.3	All ND	--	--	--	--
5/23/2012	--	--	--	<50 / <50	4.8 / 4.2	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	All ND	--	--	--	--
11/21/2012	--	--	--	110 / 100	720 / 660	6.1 / 5.8	<3.6 / <3.1	<3.6 / <3.1	All ND	--	--	--	--
TGW-1	3/21/2012	--	--	< 0.050	< 1.0	1.2	< 1.0	< 1.0	All ND	--	--	--	--

Notes:
 BTEX and Fuel Oxygenates analyzed using U.S. Environmental Protection Agency (EPA) Test Method 8260B.
 TPHg analyzed using EPA Test Method 8015B
 BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
 TPHmo = total petroleum hydrocarbons quantified as motor oil
 TPHd = total petroleum hydrocarbons quantified as diesel
 TPHg = total petroleum hydrocarbons quantified as gasoline
 TBA = Tert-butyl alcohol
 DIPE = Diisopropyl Ether
 MTBE = Methyl tert-butyl ether
 1,2-DCE = 1,2-dichloroethylene
 TCE = Trichloroethylene
 TDS = Total Dissolved Solids
 HVOCs = Halogenated volatile organic compounds
 <50) / <50) = Indicates primary / duplicate sample results
 ND = Not detected at or above applicable laboratory reporting limit
 NS = Not sampled
 < = Not detected at or above laboratory reporting limit
 Y = sample exhibits chromatographic pattern which does not resemble laboratory standard.
 -- = Not applicable or not analyzed
 ND* = LUFT -5 metals reporting limits of 5.0 mg/L for cadmium, chromium, lead and nickel, and 20 mg/L for zinc

Table 5
Historical Sub-Slab Vapor Probe Analytical Data
1650 65th Street
Emeryville, California

Sample Location	Sample ID	Date Collected	VOCs (µg/m ³)				Major Gases (% volume)			
			Benzene	Toluene	Ethylbenzene	Xylenes	Nitrogen	Oxygen	Carbon Dioxide	Methane
AA-1	AA-1	3/22/12	<1.1	<1.1	<1.1	<1.1	--	19.0	<0.22	<0.22
	AA-1	4/19/12	<3.19	4.30	<4.34	5.86	--	--	--	--
SS-1	SS-1 ^a	3/22/12	<3,200	<3,200	<3,200	<3,200	--	18.0	0.77	<0.2
	SS-1 ^a	4/19/12	<3.19	<3.77	<4.34	<4.34	78.9	19.3	1.76	<0.100
SS-2	SS-2 ^a	3/22/12	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	--	18.0	0.22	<0.16
	SS-2 ^a	4/19/12	<3.19 / <3.19	<3.77 / <3.77	<4.34 / <4.34	<4.34 / <4.34	78.9	19.5	1.63	<0.100

Notes:

VOCs = Volatile Organic Compounds

µg/m³ = Micrograms per cubic meter of air

<0.22 = Not detected at or above the indicated laboratory reporting limit

<3.19 / <3.19 = Indicates results for primary/duplicate sample

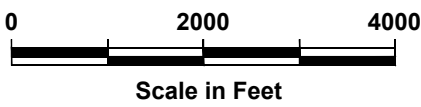
-- = Not analyzed or not applicable

^a The samples for SS-1 and SS-2 collected on March 22, 2012 contained 1,1-difluoroethane (1,1-DFA) (the reference leak detection compound) at concentrations of 65,000 and 21,000 parts per million volumetric (ppmv) respectively; 1,1-DFA was detected in the accompanying shroud samples for SS-1 and SS-2 at concentrations of 98,000 and 2,600 ppmv, respectively. The detected concentrations indicated leaks in the sampling equipment. Therefore, the sub-slab vapor probes were resampled on April 19, 2012. 1,1-DFA was not detected at or above the laboratory reporting limit for the samples collected at SS-1 and SS-2 on April 19, 2012; 1,1-DFA was detected in the accompanying shroud samples at 8,800 and 8,560 ppmv, respectively, and indicates dilution from ambient air did not affect the samples. 1,1-DFA analyzed by EPA Method TO-3.

ILLUSTRATIONS



PROJECT SITE

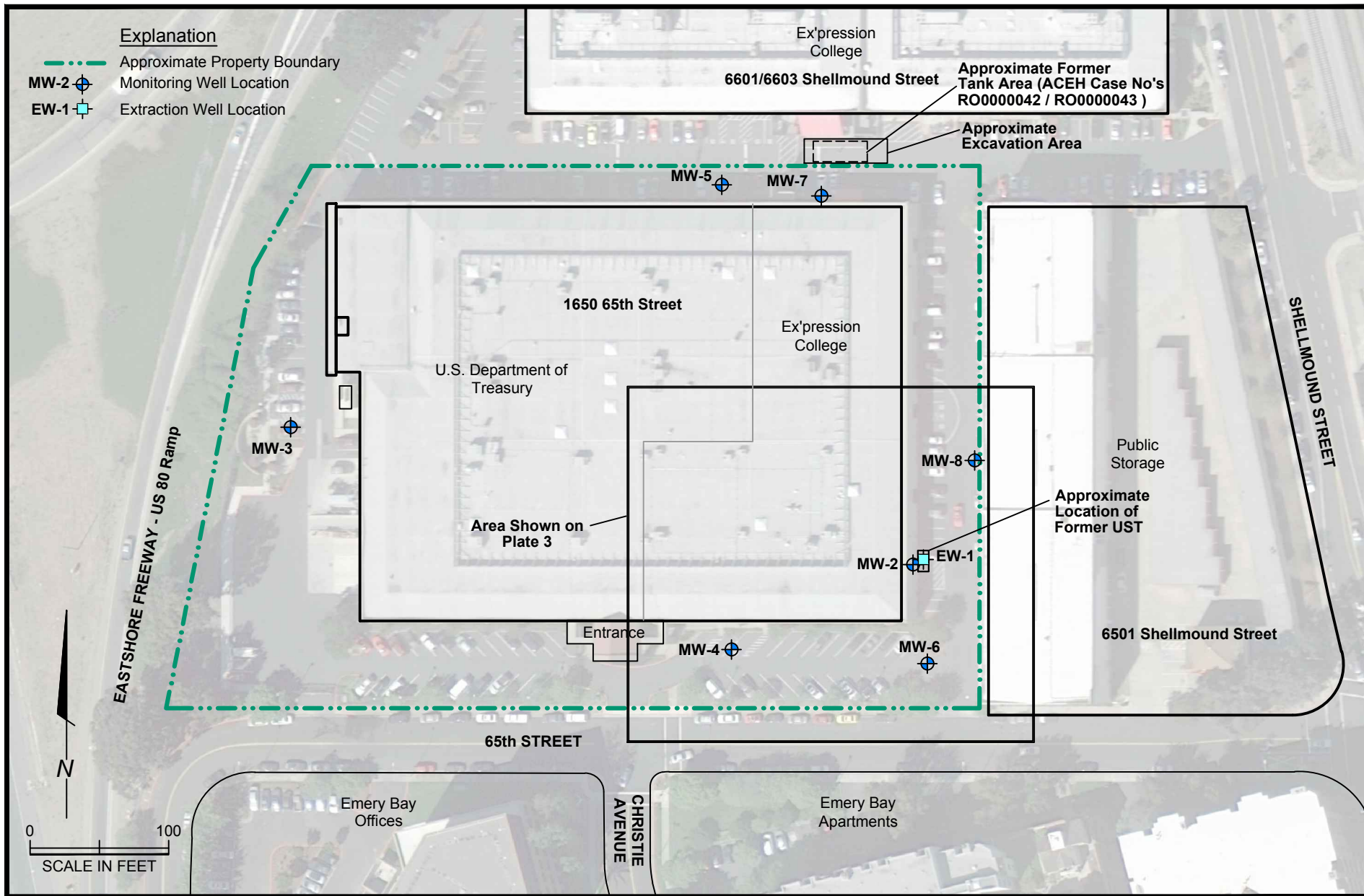


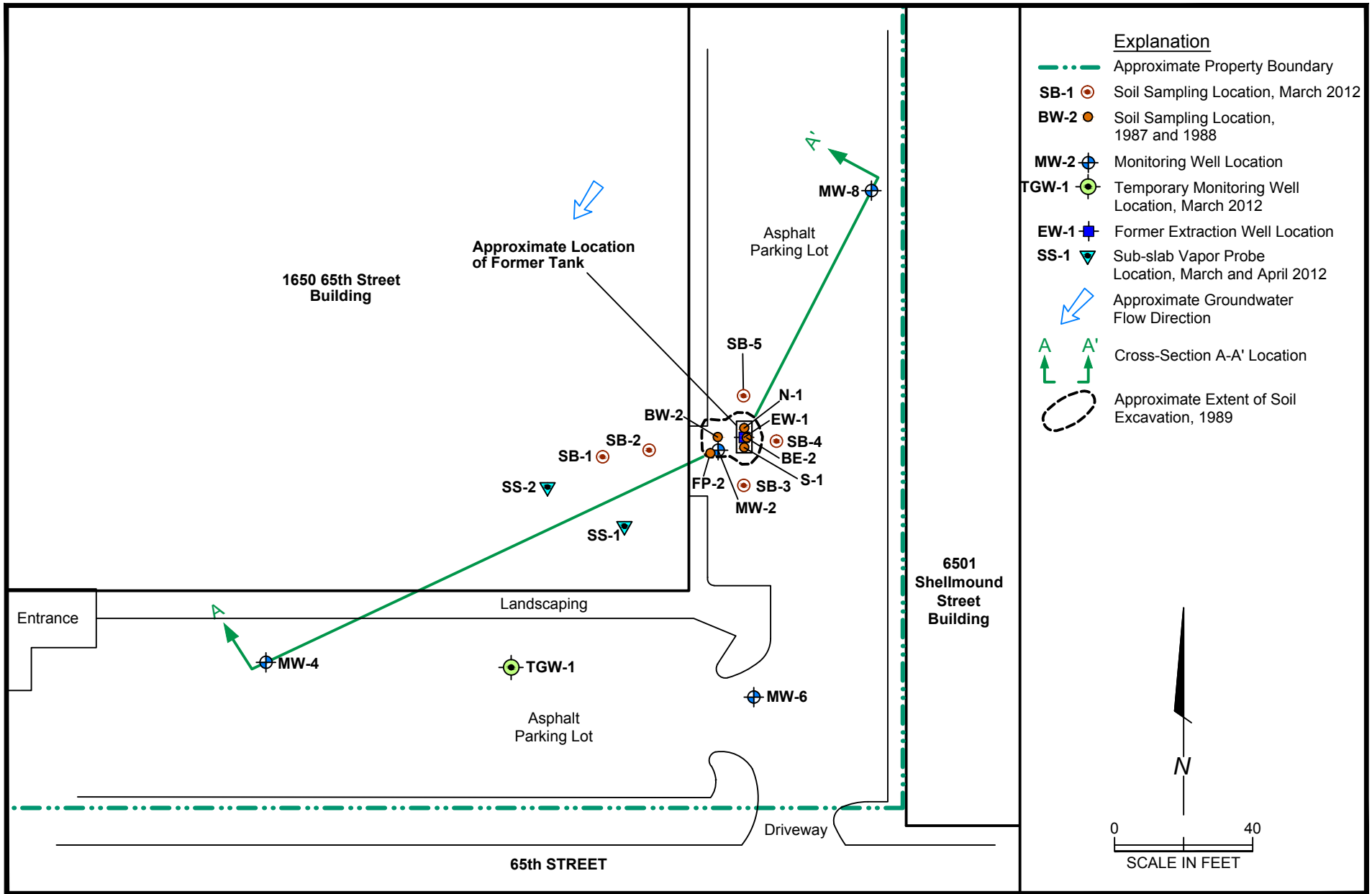
U.S.G.S. Topo Map - Oakland West, California, 7.5-minute quadrangle. Map version 1997; current as of 1993

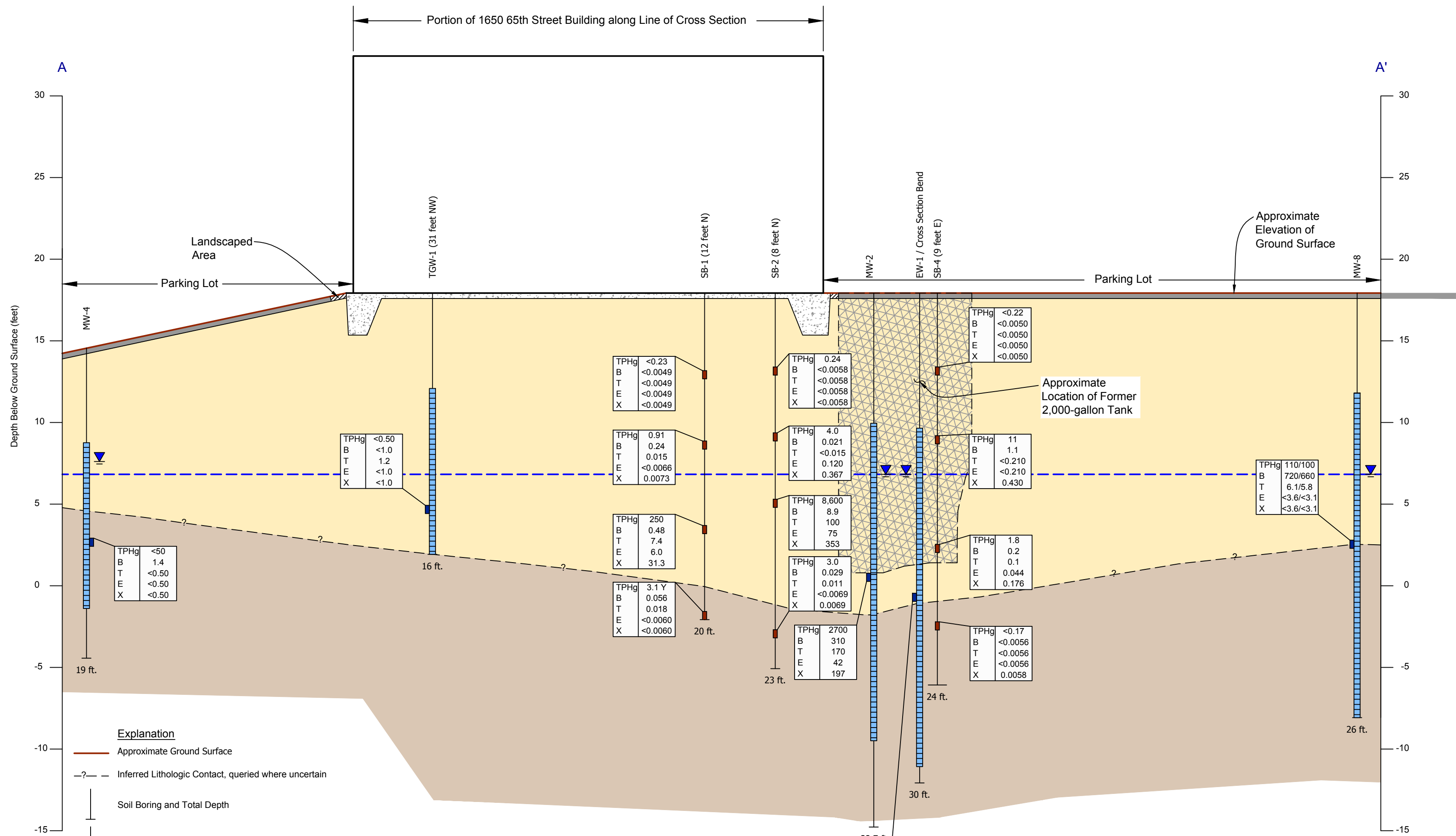


Site Location Map
1650 65th Street
Emeryville, California

PLATE
1







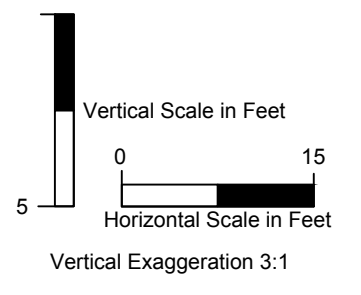
Explanation


- Approximate Ground Surface
- Inferred Lithologic Contact, queried where uncertain
- Soil Boring and Total Depth
- Groundwater Monitoring Well with approximate screened interval
- Groundwater Elevation on November 21, 2012; elevation presented in feet above mean sea level (MSL)
- (3 feet N) Approximate distance and direction of sampling location projected to line of cross section
- Artificial fill, consisting of fine- to coarse-grained materials (GW, SP, SM, SC, CL) with and without debris
- Artificial fill, consisting of fine- to coarse-grained tank excavation backfill (GW, SP, SM)
- Native material, consisting of fine sands (SW, SP, SM, SC) and clays (CL, CH)
- Concrete
- Asphalt
- March 2012 Soil Sample (all concentrations in mg/kg)
- November 2012* Groundwater Sample (all concentrations in µg/L)
*TGW-1 sample from March 2012

<0.0050 Not detected at or above laboratory reporting limit

110/100 Primary/duplicate sample results

TPHg = Total petroleum hydrocarbons quantified as gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 Y = Sample exhibits chromatographic pattern that does not resemble lab standard
 mg/kg = milligrams per kilogram
 µg/L = micrograms per liter



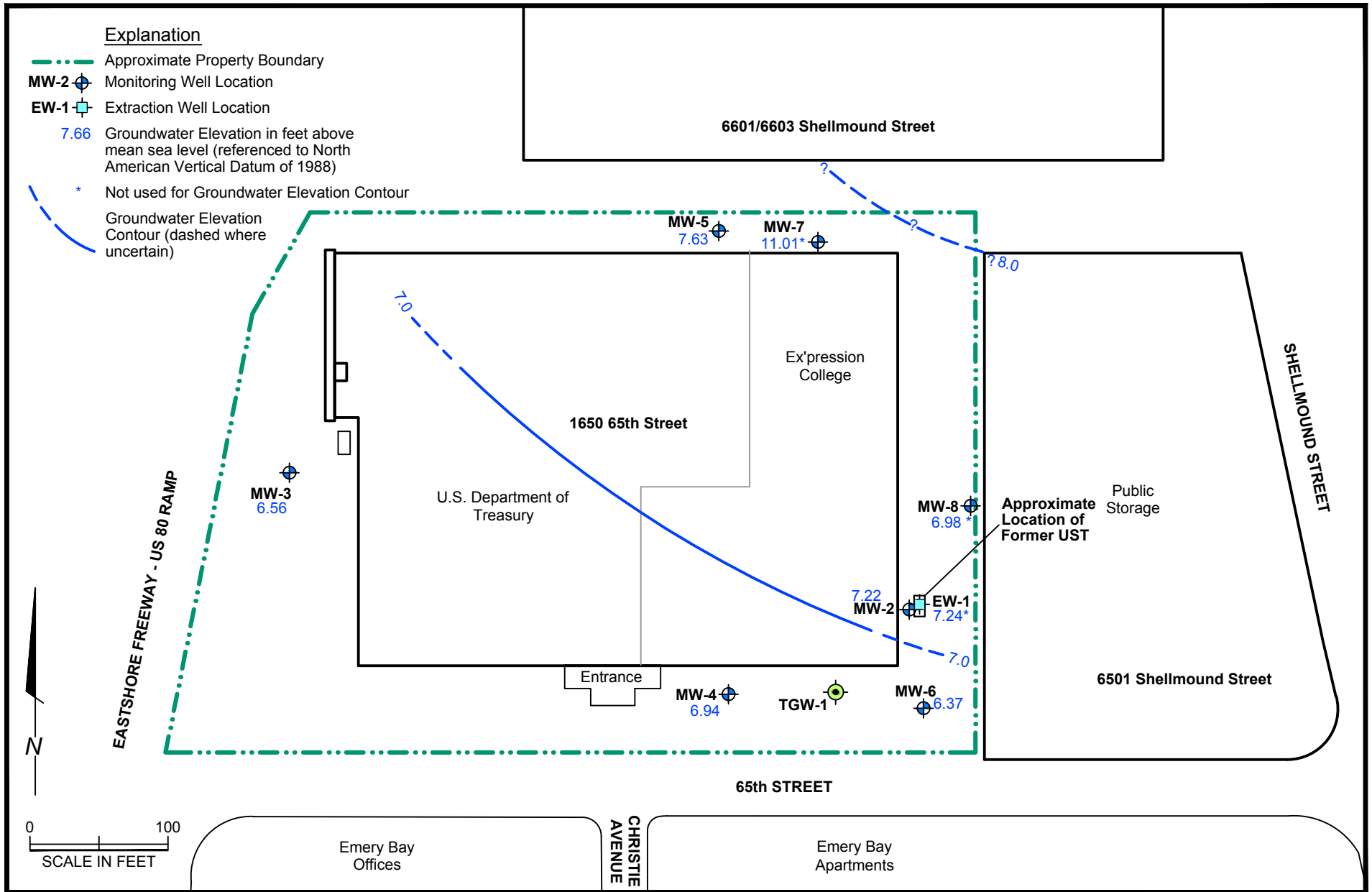


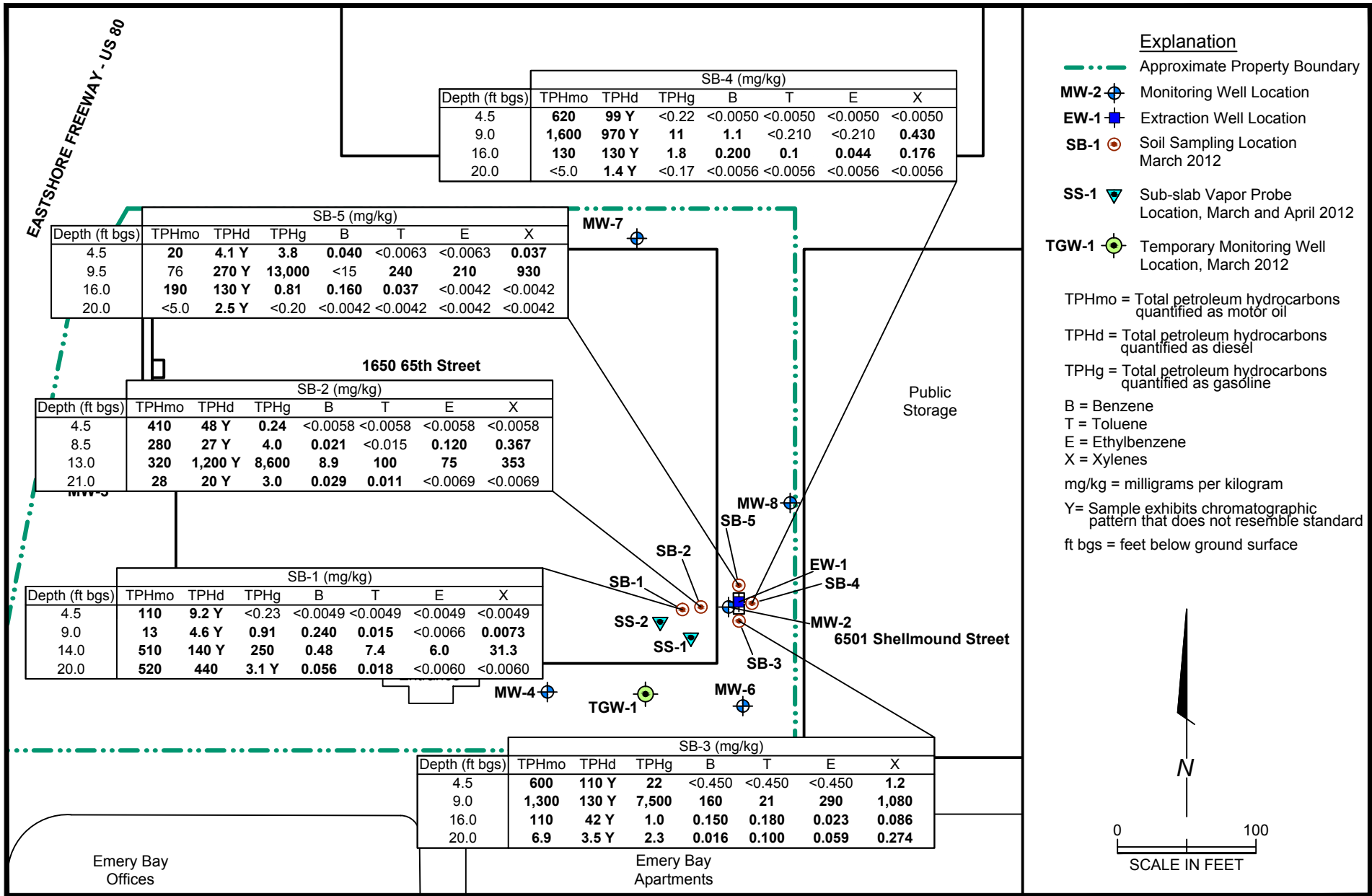
PES Environmental, Inc.
Engineering & Environmental Services

Cross Section A-A'
1650 65th Street
Emeryville, California

PLATE
4

1211.001.03.001	121100103001_4	<i>CJB</i>	5/13
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

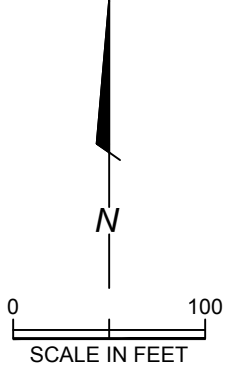


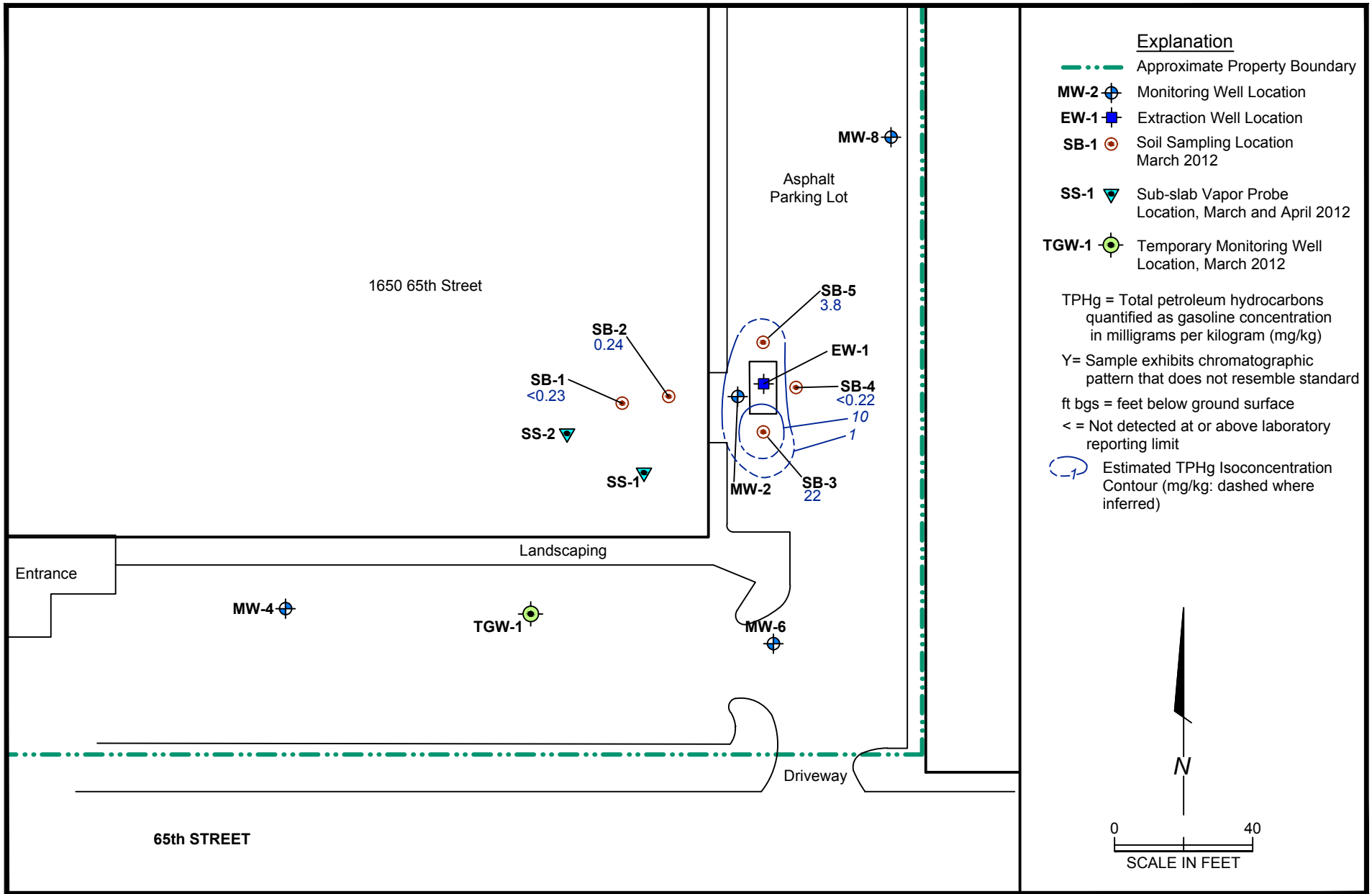


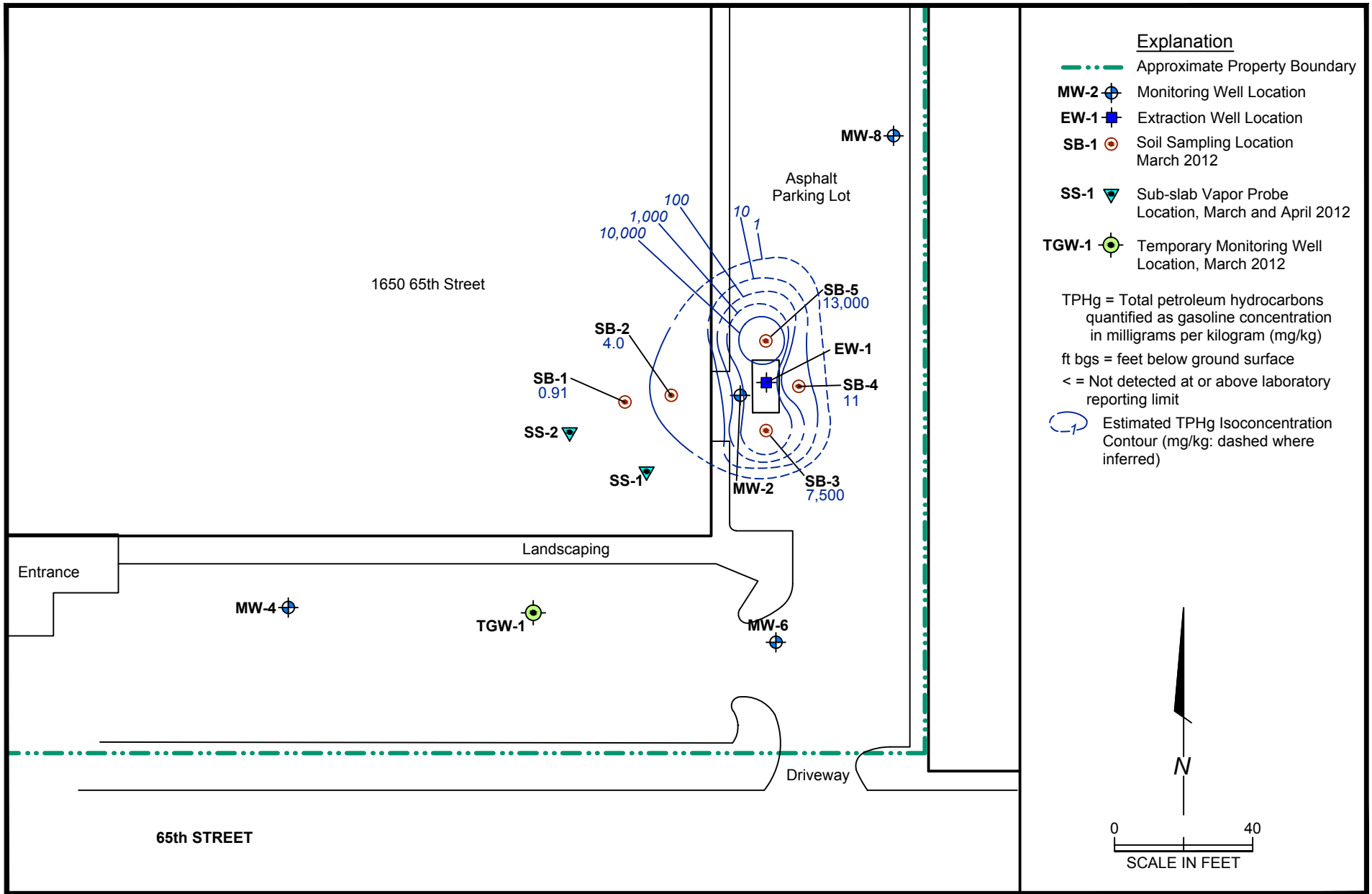
Explanation

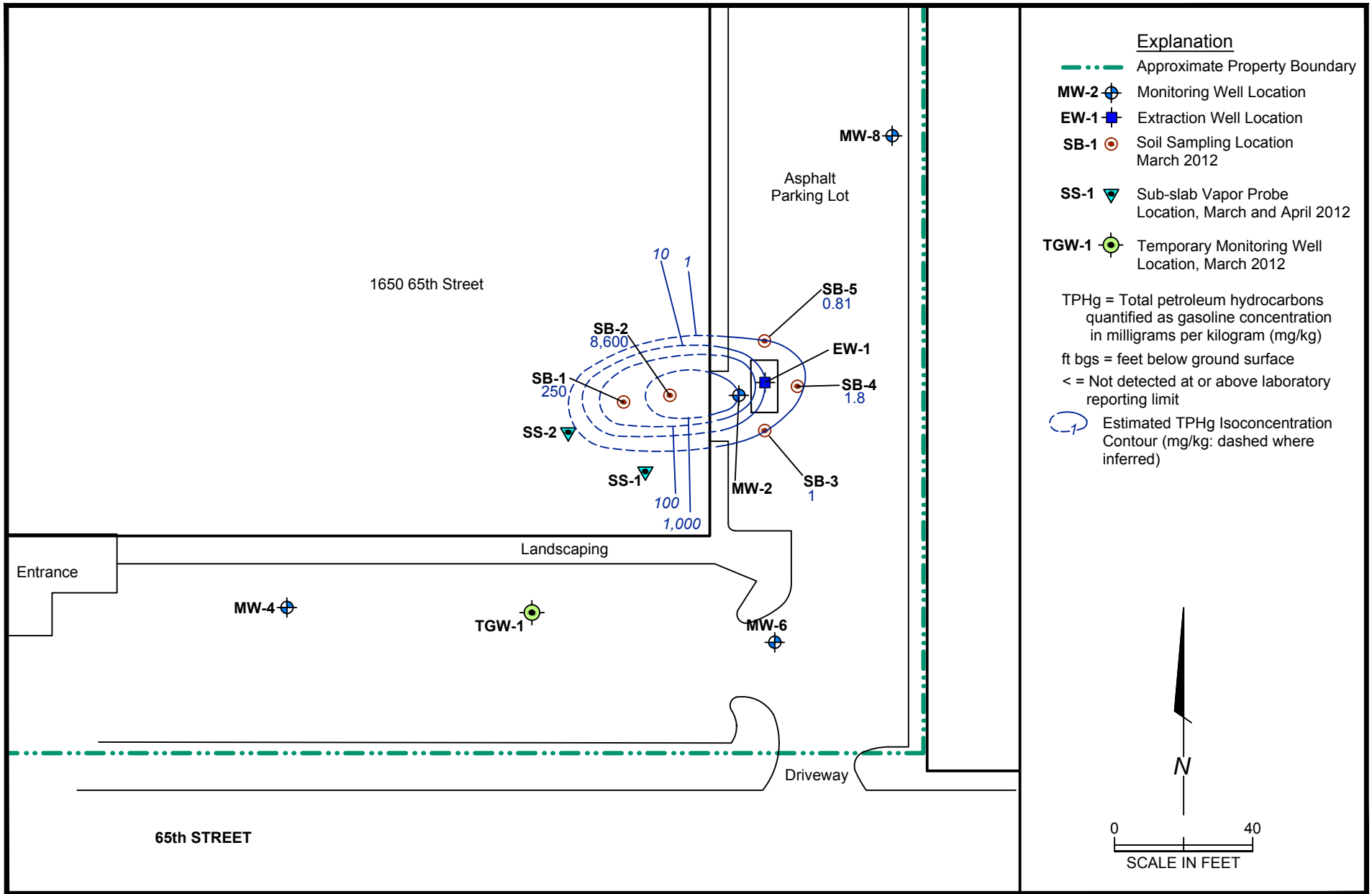
- Approximate Property Boundary
- MW-2 Monitoring Well Location
- EW-1 Extraction Well Location
- SB-1 Soil Sampling Location March 2012
- SS-1 Sub-slab Vapor Probe Location, March and April 2012
- TGW-1 Temporary Monitoring Well Location, March 2012

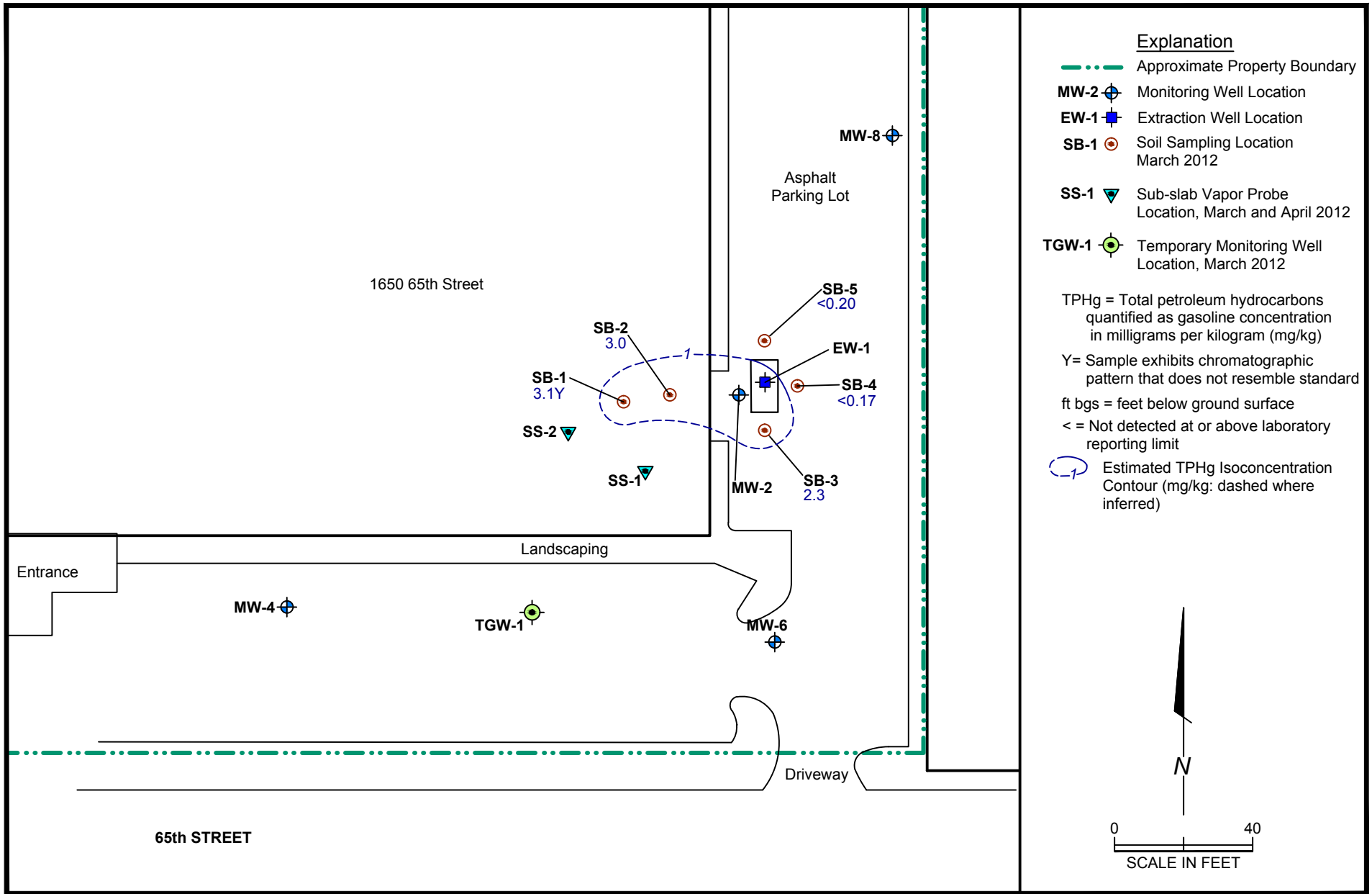
TPHmo = Total petroleum hydrocarbons quantified as motor oil
 TPHd = Total petroleum hydrocarbons quantified as diesel
 TPHg = Total petroleum hydrocarbons quantified as gasoline
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 mg/kg = milligrams per kilogram
 Y = Sample exhibits chromatographic pattern that does not resemble standard
 ft bgs = feet below ground surface

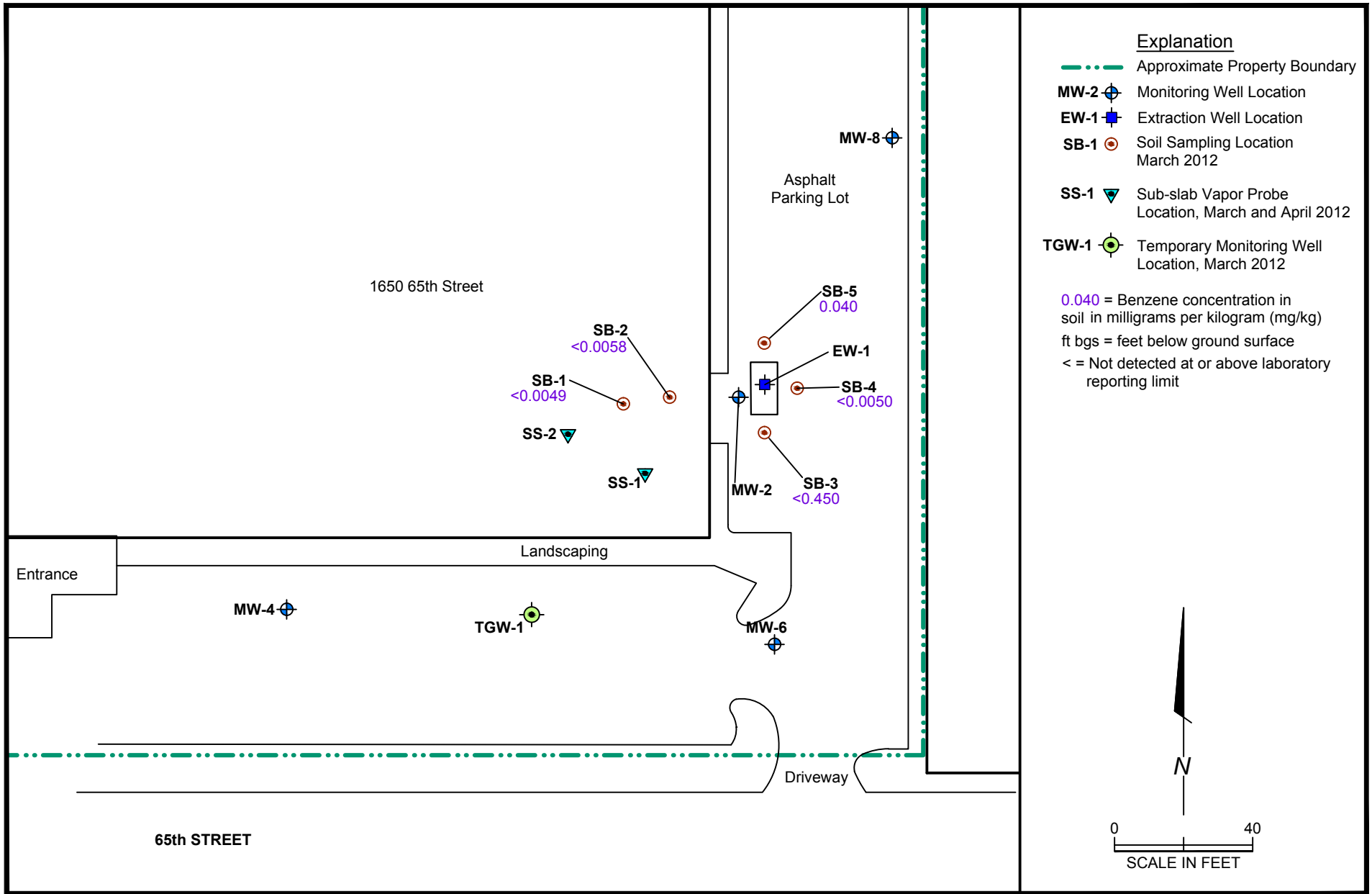


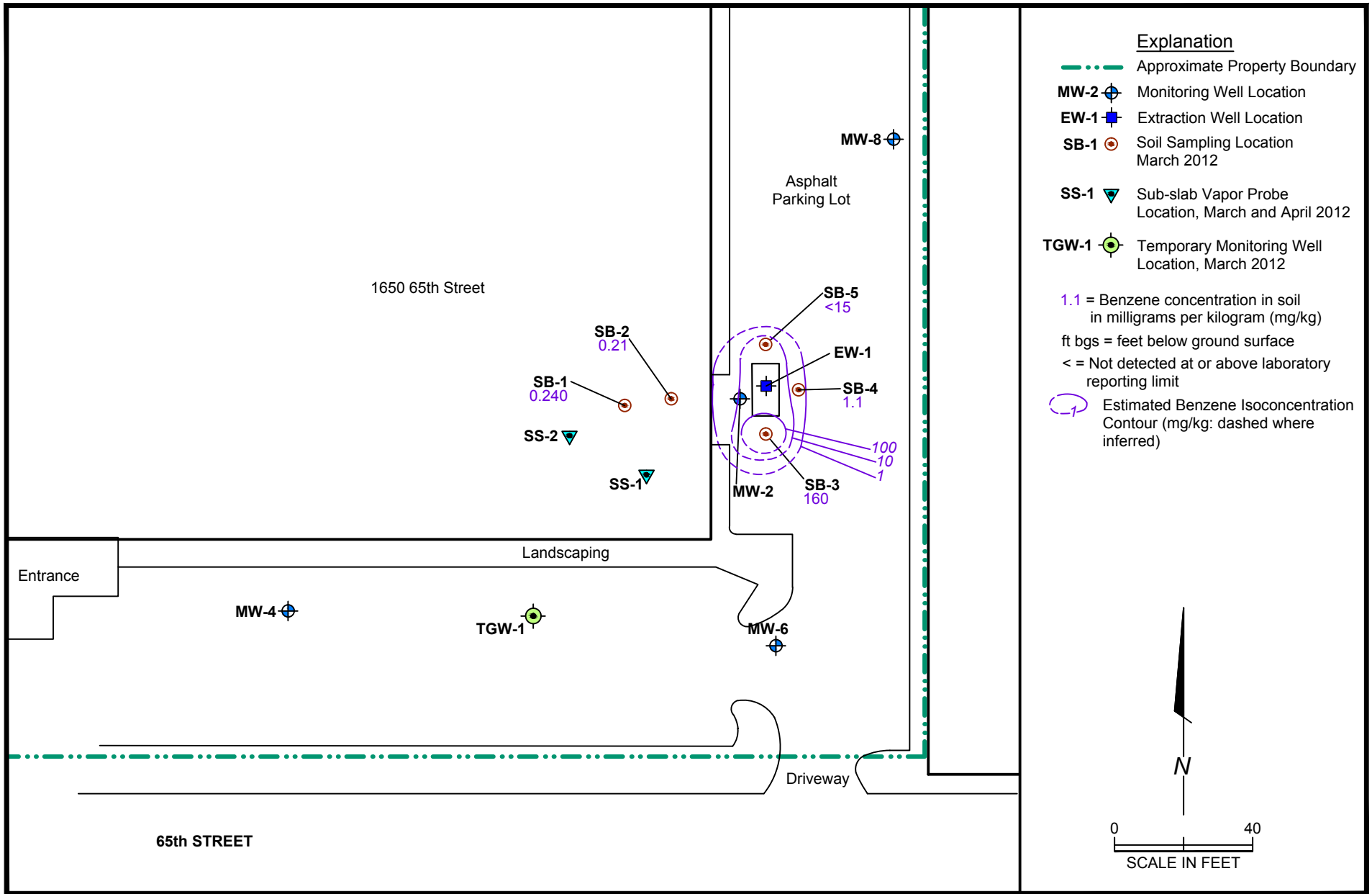


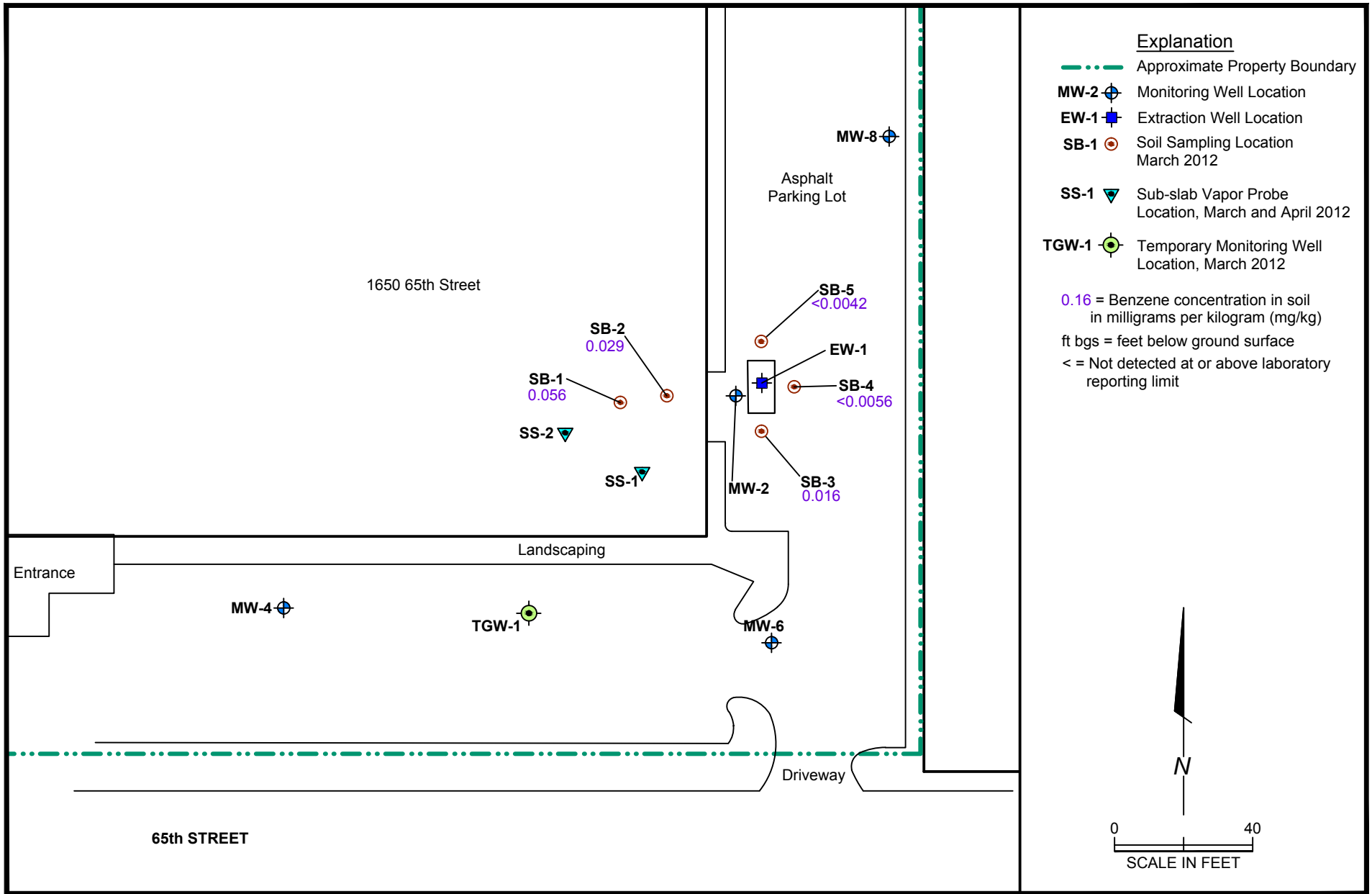


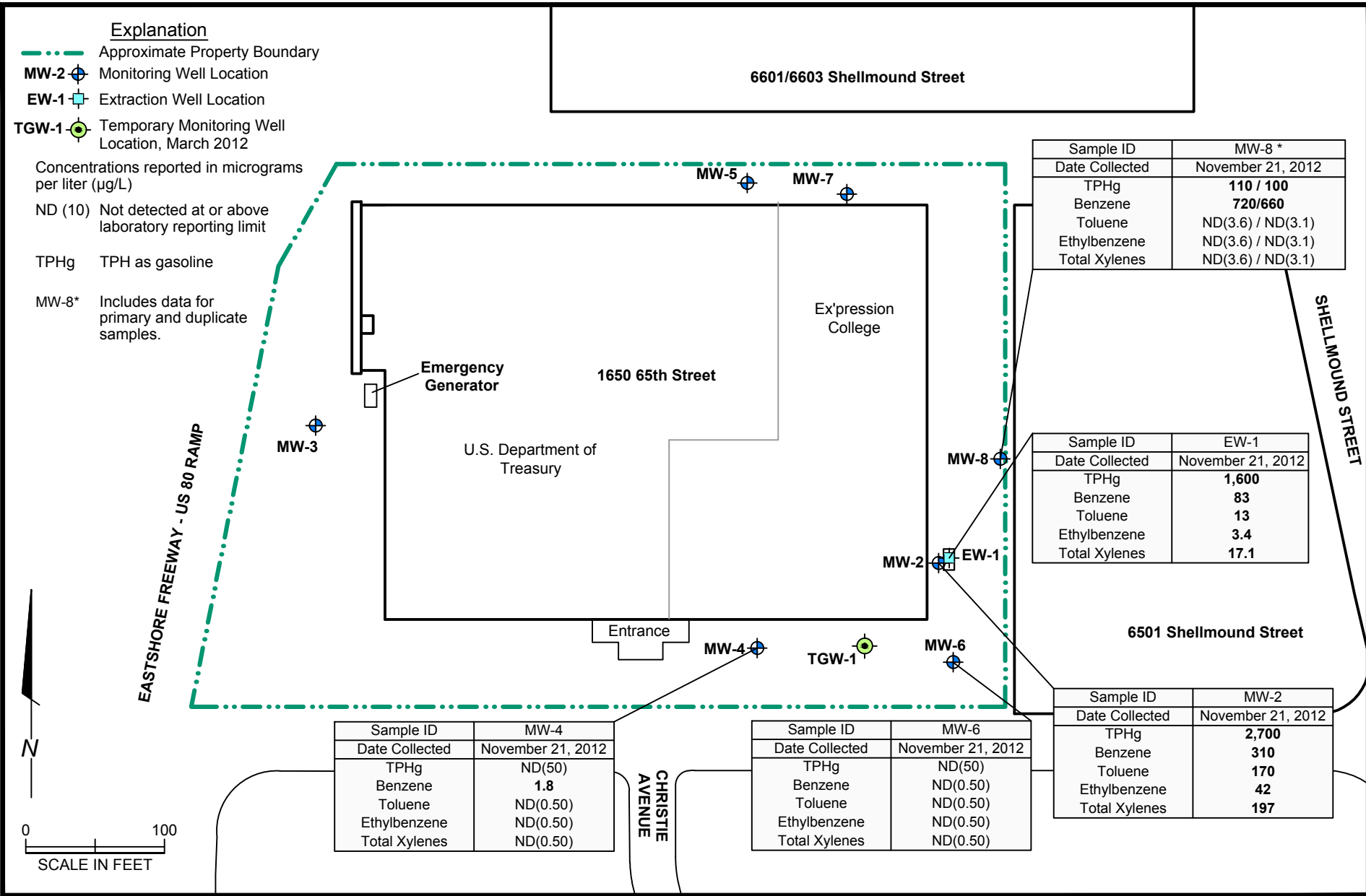


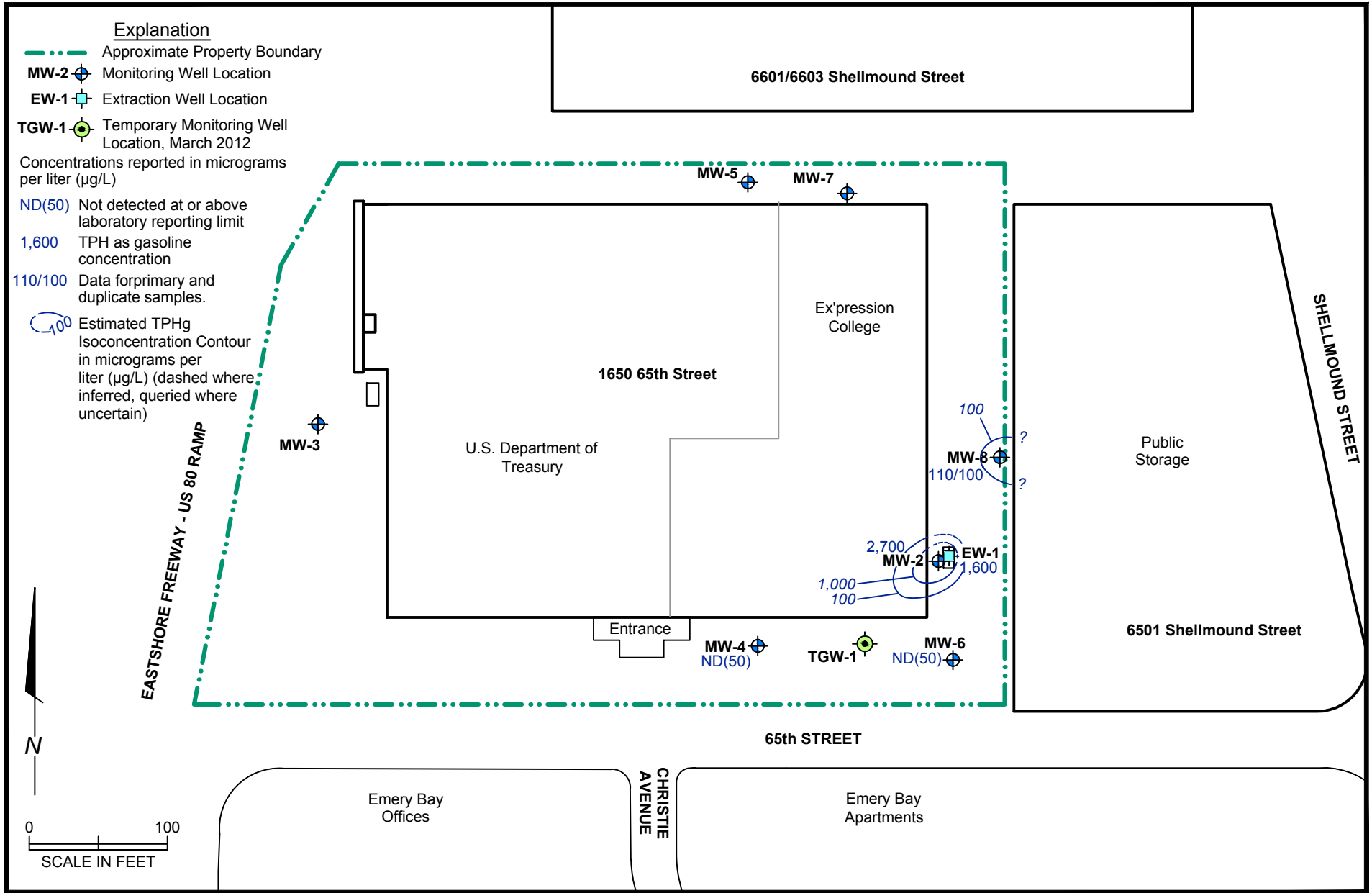


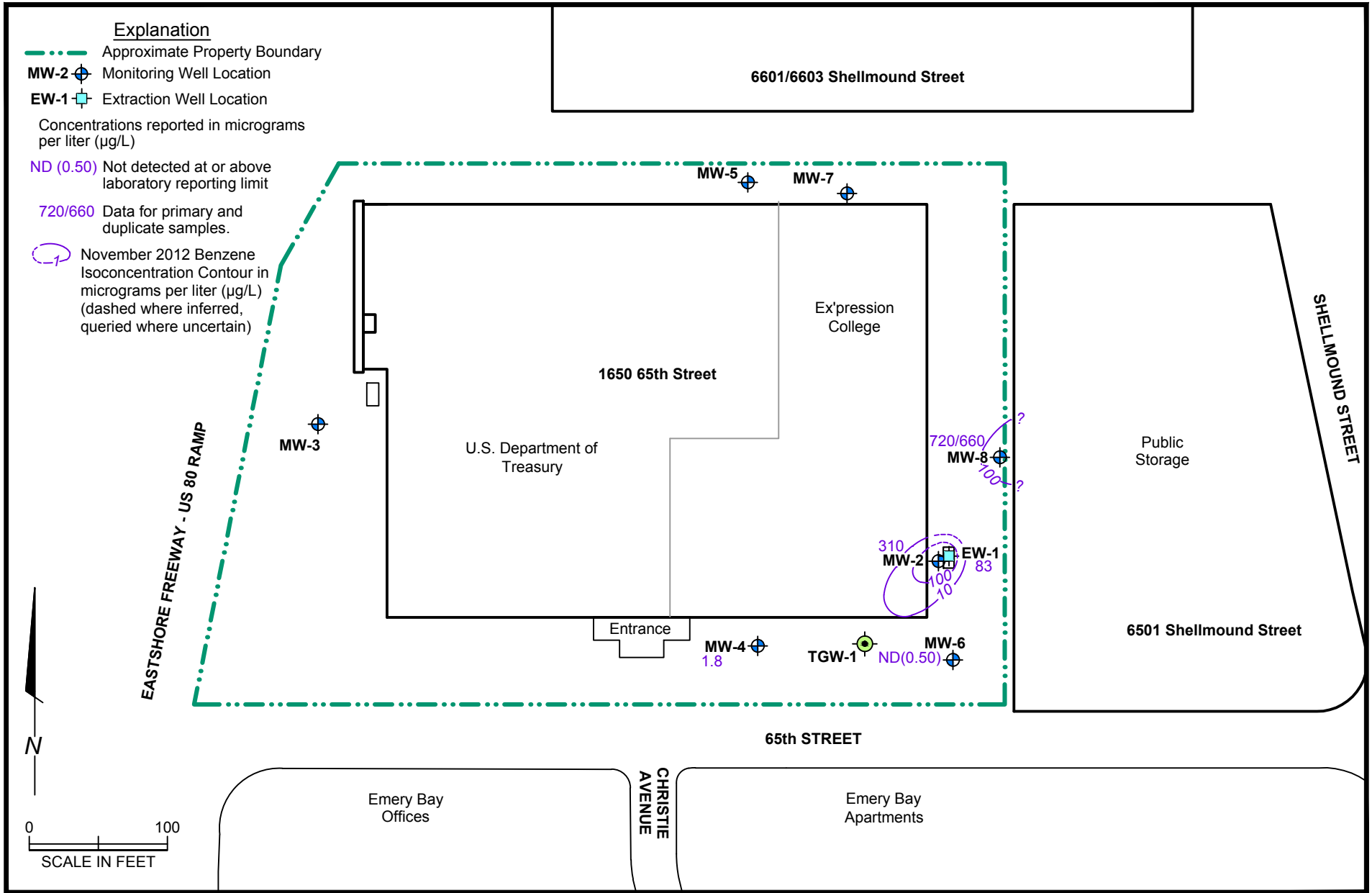


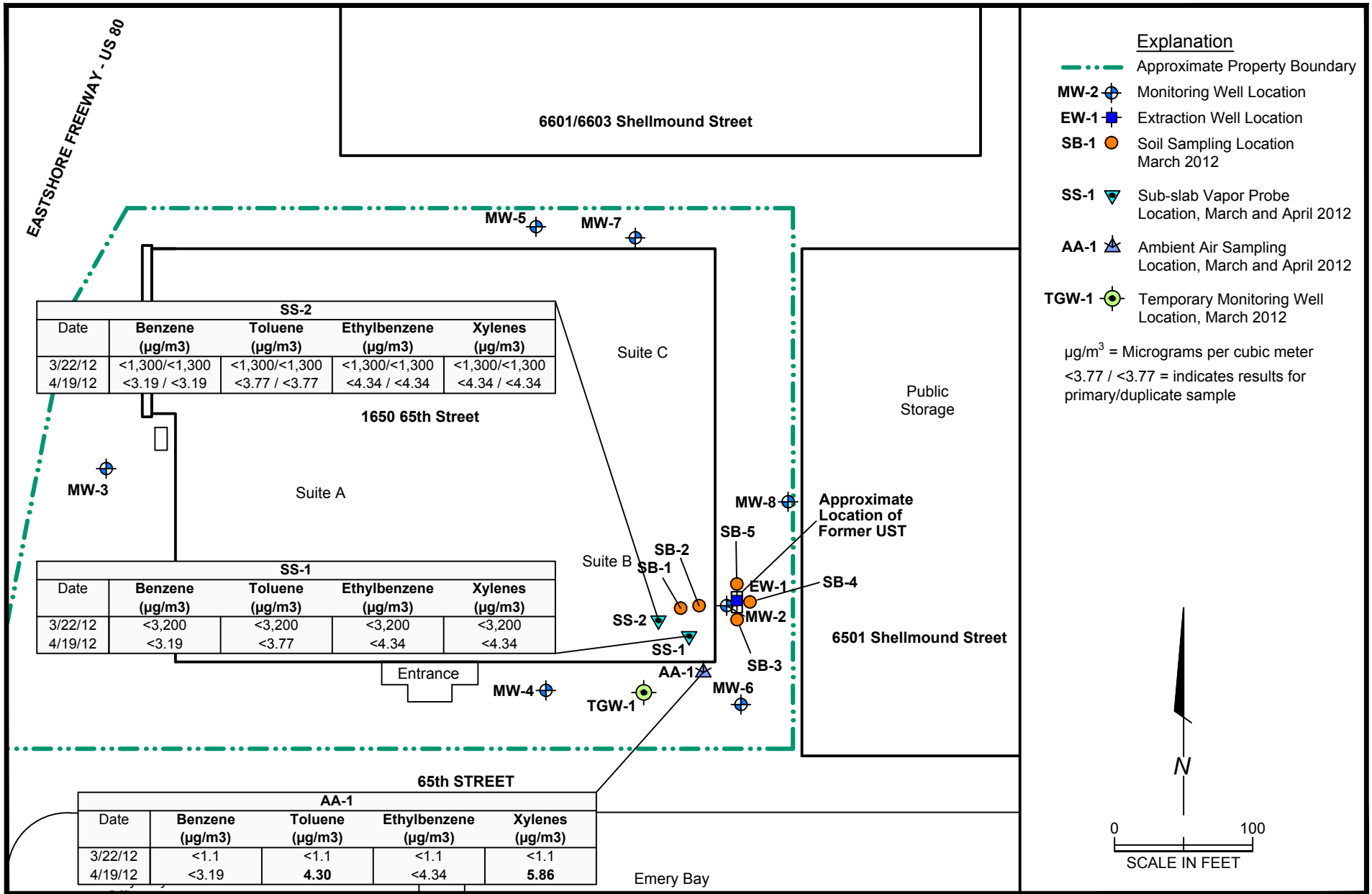




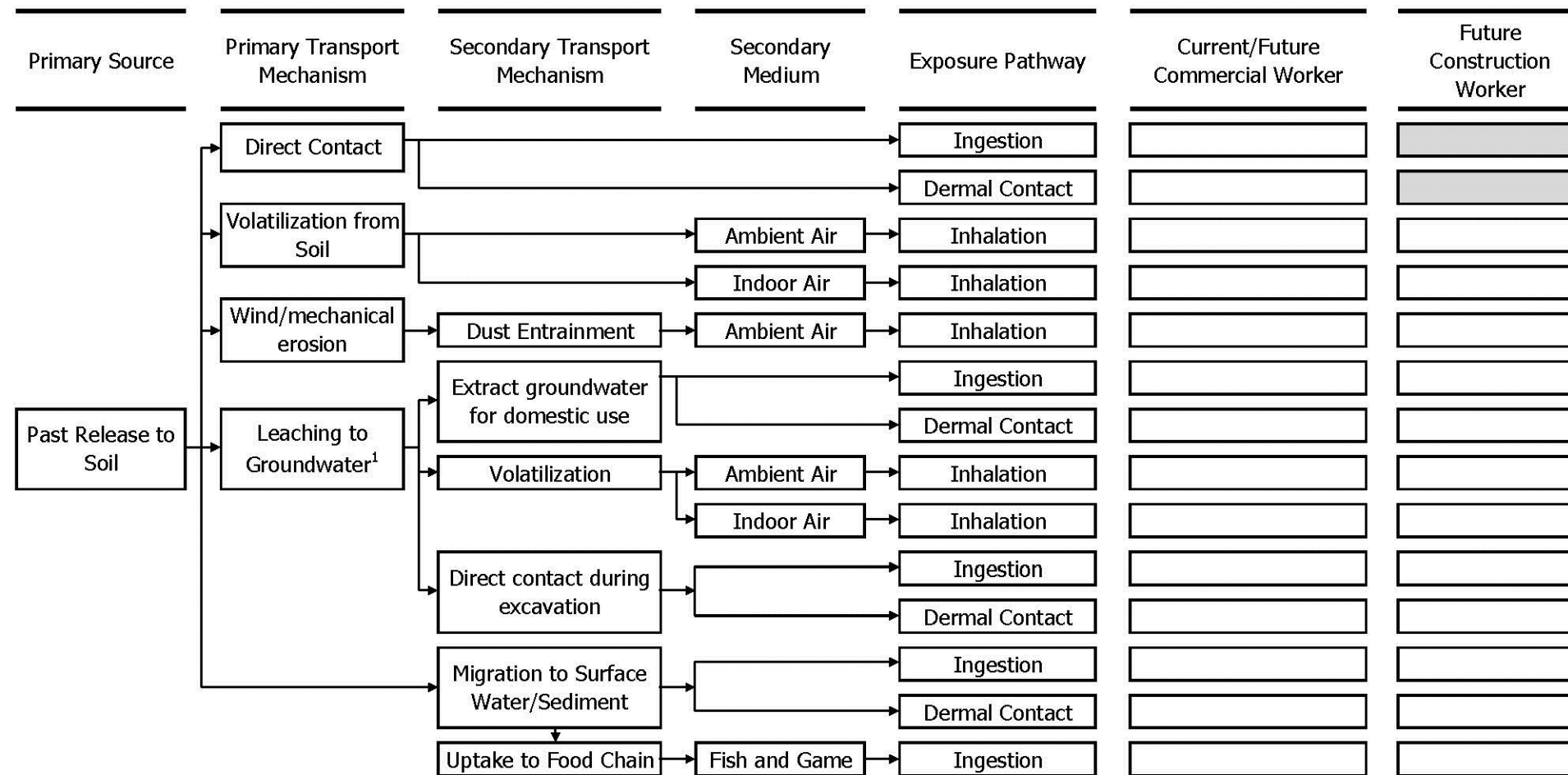








Conceptualized Exposure Model



- Receptor likely to be exposed via this route, so exposure pathways are considered potentially complete and significant.
- Receptor may be exposed via this route; however, exposure is likely insignificant based on engineering and institutional controls.²
- Pathway to receptor is not complete and/or significant and not evaluated further.

Footnotes:

¹ Groundwater ranges from approximately 7 to 10 feet below ground surface.
² Refer to Section 2.5 of report text.

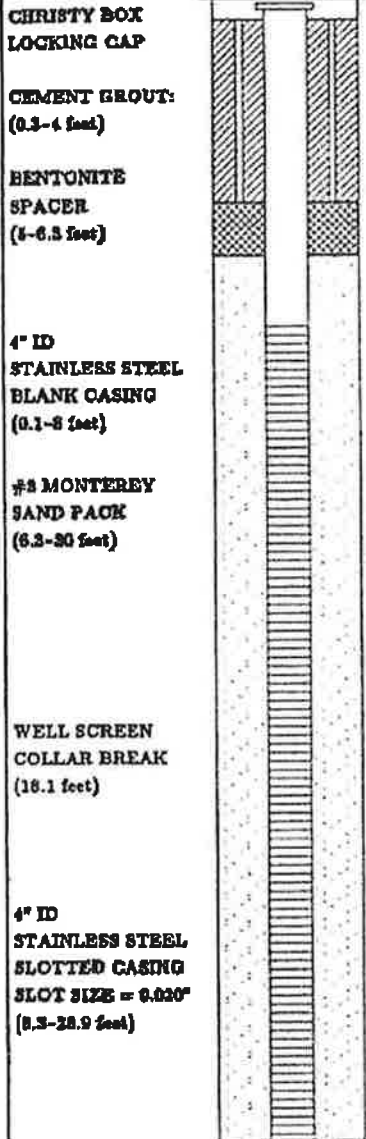
APPENDIX A

BORING LOGS FROM PRIOR INVESTIGATIONS

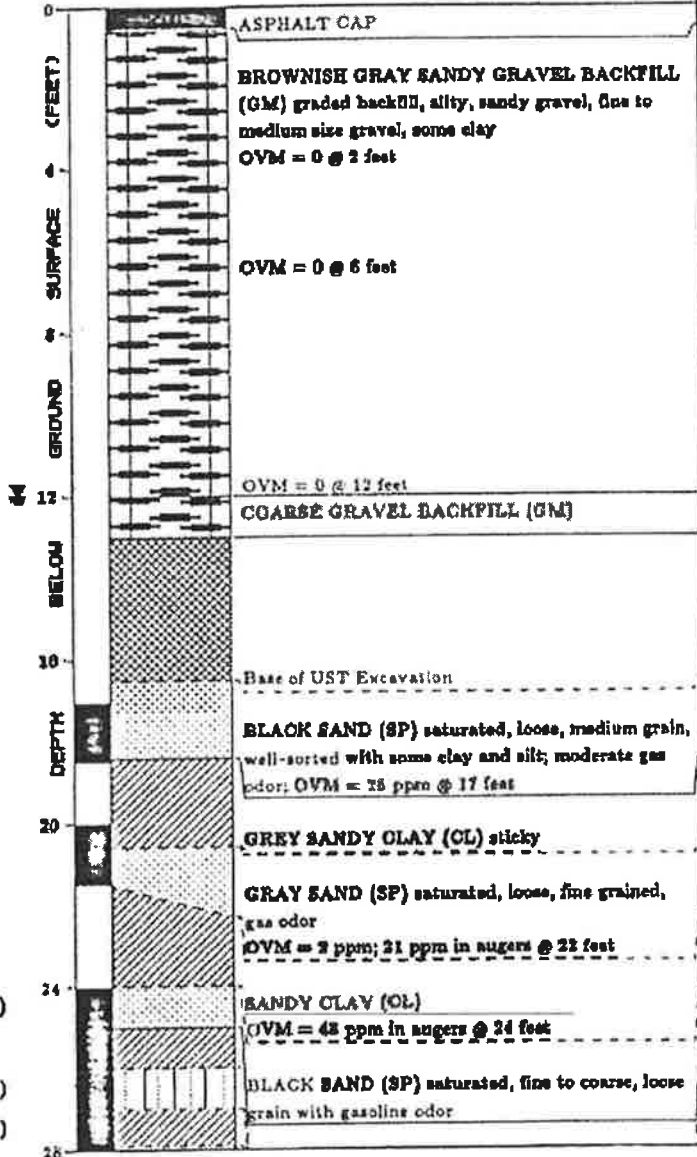
BORING LOGS PREPARED BY ENGINEERING SCIENCE

CLIENT	<u>F.O. PARTNERS</u>	TEST HOLE NUMBER	<u>EW-1</u>
LOCATION	<u>1850 65th STREET, EMERYVILLE, CALIFORNIA</u>	DRILLER	<u>ASE DRILLING, INC.</u>
DATE	<u>28 March 1990</u>	DRILLING METHOD	<u>HOLLOW-STEM AUGER</u>
GEOLOGIST	<u>P.F. BERTUCCI, R.G.</u>	HOLE DIAMETER	<u>10.75-INCHES</u>

WELL CONSTRUCTION



LITHOLOGY DESCRIPTION



EXPLANATION

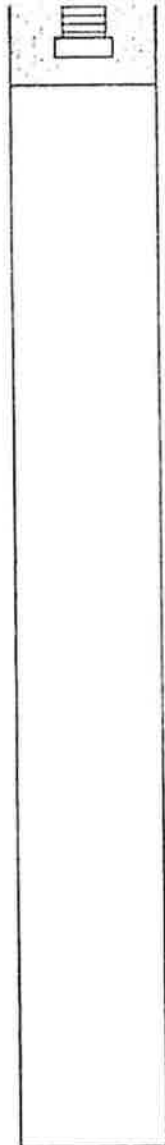
Water level during drilling
 OVM Organic Vapor Meter Reading

- - - Contact (dashed where approximate)
 Location of sample

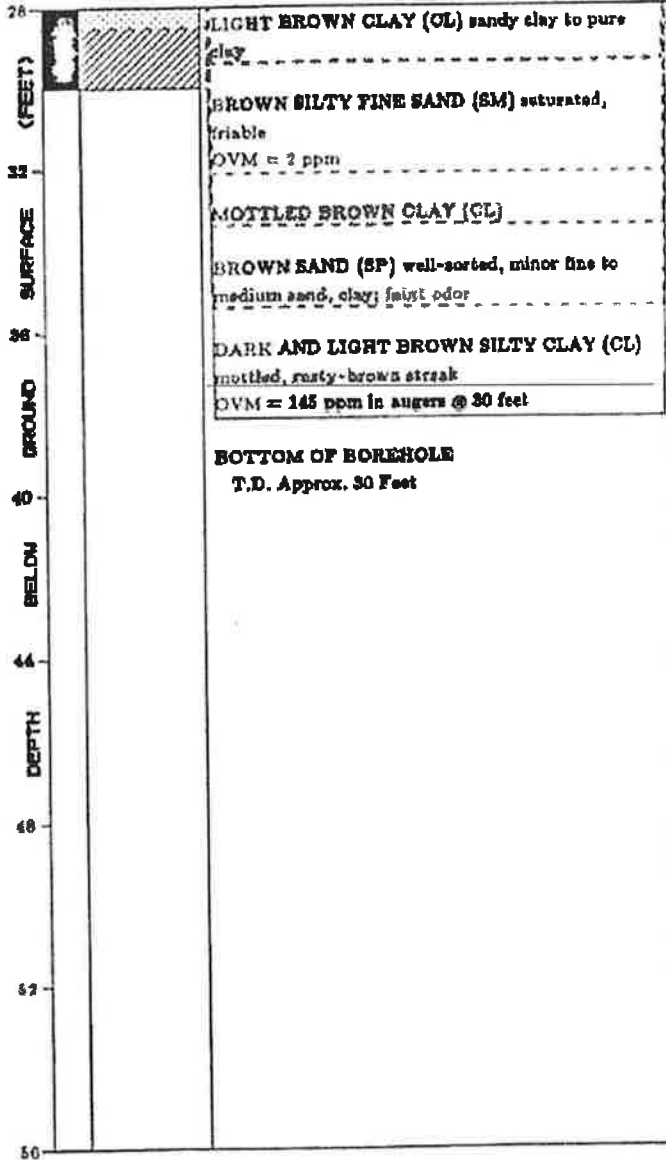
CLIENT P.O. PARTNERS TEST HOLE NUMBER EW-1
 LOCATION 1880 65th STREET, EMERYVILLE, CALIFORNIA DRILLER ASE DRILLING, INC.
 DATE 28 March 1990 DRILLING METHOD HOLLOW-STEM AUGER
 GEOLOGIST P.F. BERTUCCI, R.G. HOLE DIAMETER 10.75-INCHES

WELL CONSTRUCTION

THREADED
BOTTOM CAP
SAND



LITHOLOGY DESCRIPTION



EXPLANATION

∇ Water level during drilling
 OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
 ■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-2

LOCATION 1850 65th STREET,
EMERYVILLE, CALIFORNIA

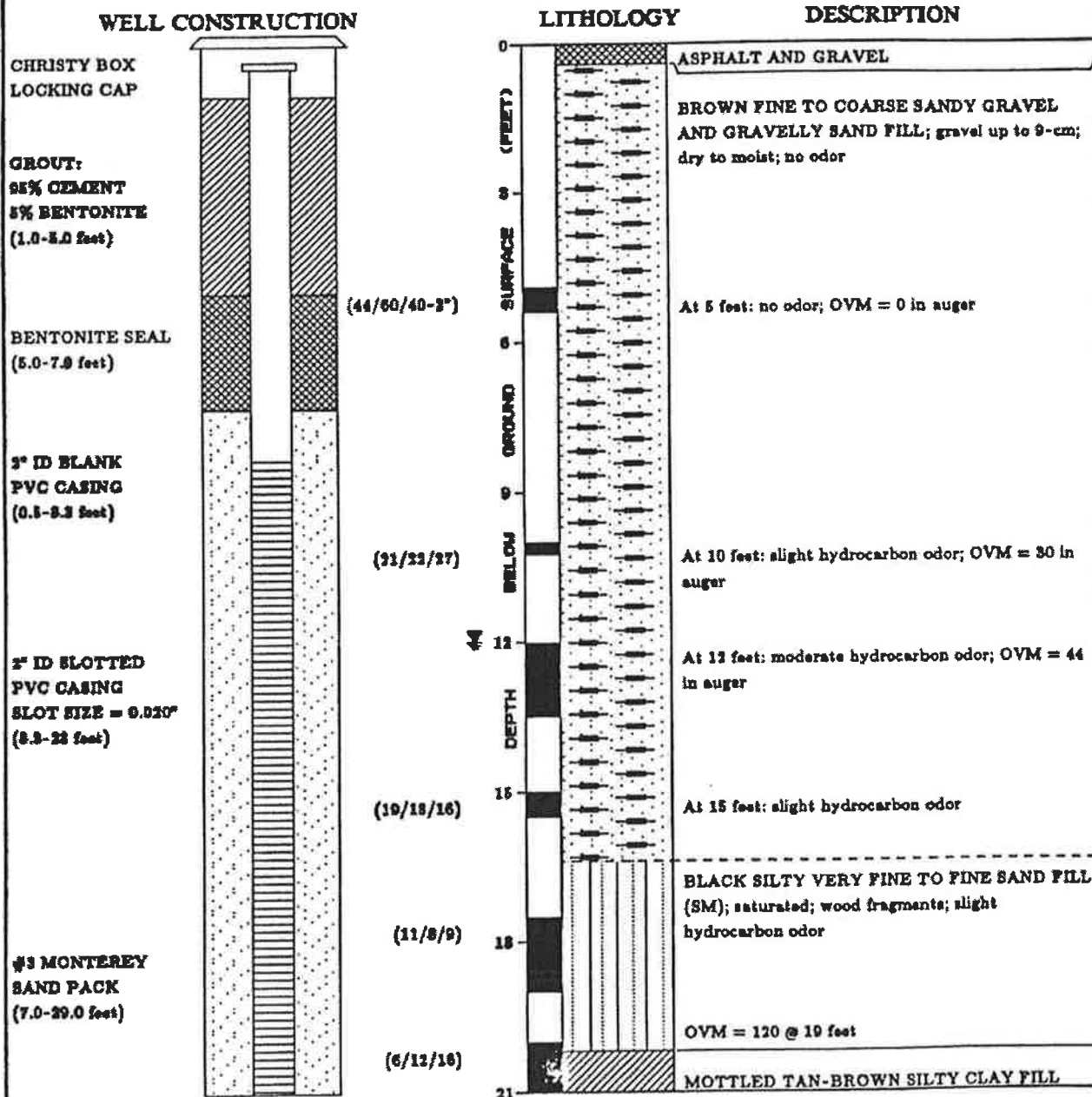
DRILLER ASE DRILLING, INC.

DATE 28 September 1990

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

HOLE DIAMETER 8-INCHES



EXPLANATION

☒ Water level during drilling
 OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
 ■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-2

LOCATION 1660 85th STREET,
EMERYVILLE, CALIFORNIA

DRILLER ASE DRILLING, INC.

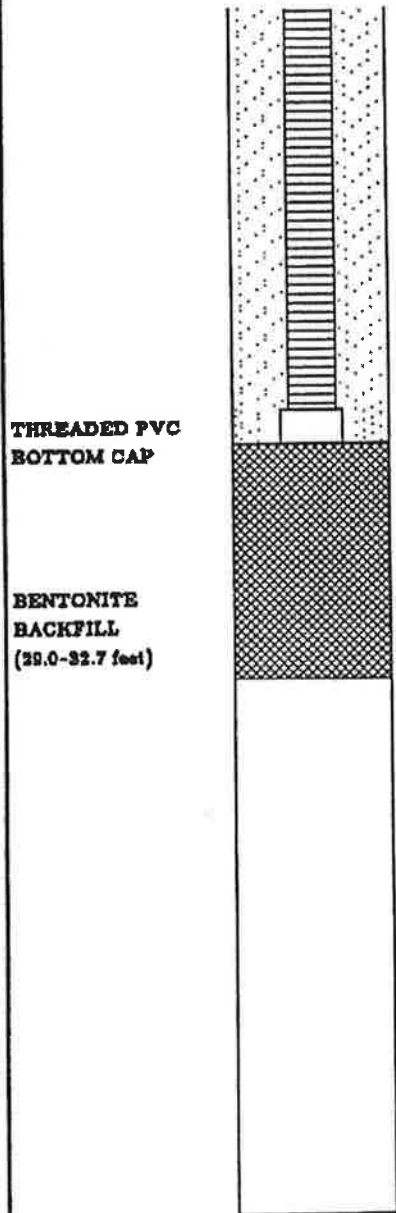
DATE 28 September 1980

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

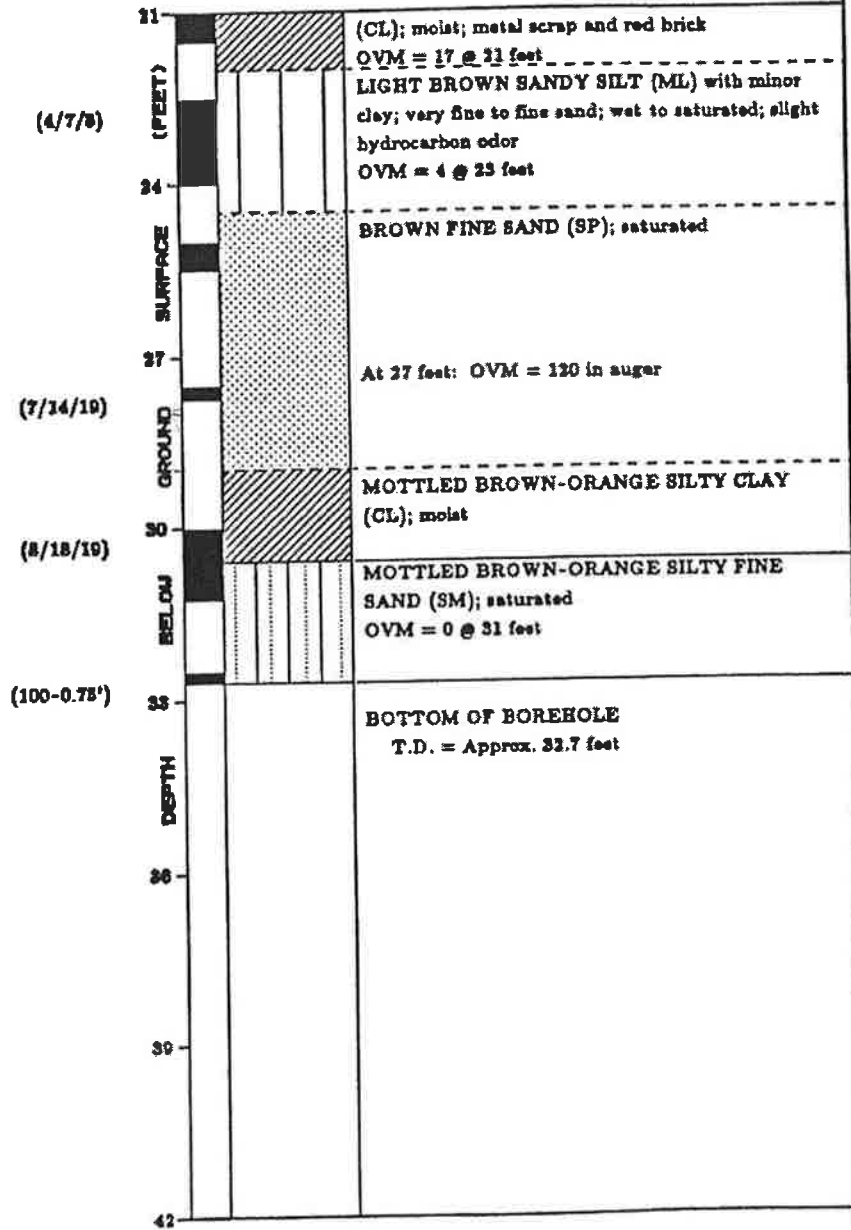
HOLE DIAMETER 8-INCHES

WELL CONSTRUCTION



LITHOLOGY

DESCRIPTION



EXPLANATION

☒ Water level during drilling
OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-3

LOCATION 1650 65th STREET,
EMERYVILLE, CALIFORNIA

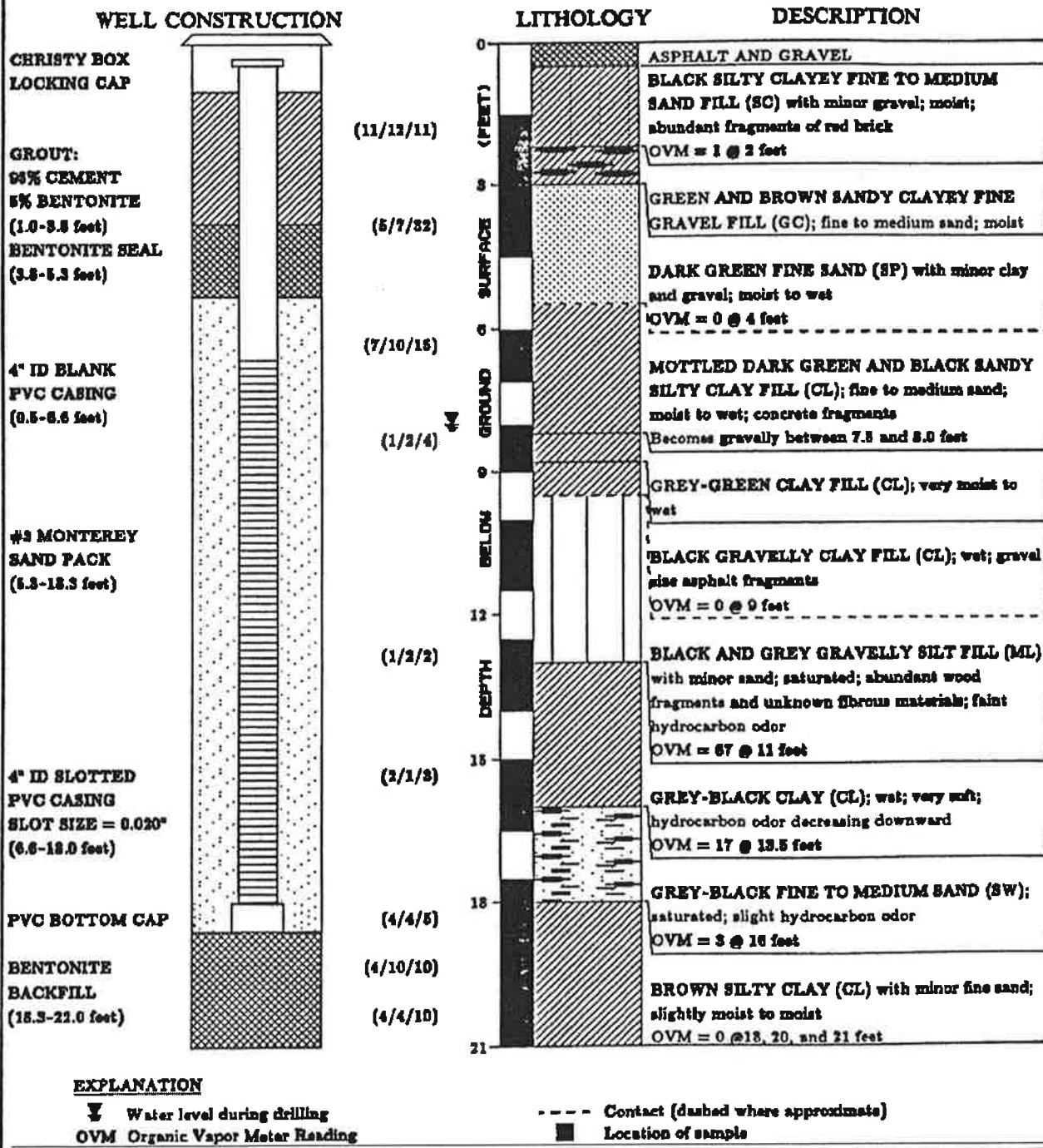
DRILLER ASE DRILLING, INC.

DATE 14 November 1989

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

HOLE DIAMETER 10.75-INCHES

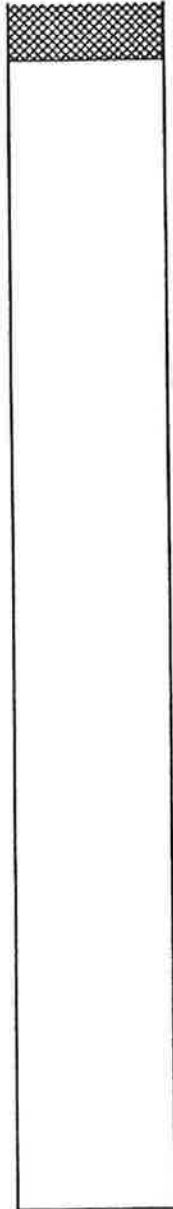


ES ENGINEERING - SCIENCE

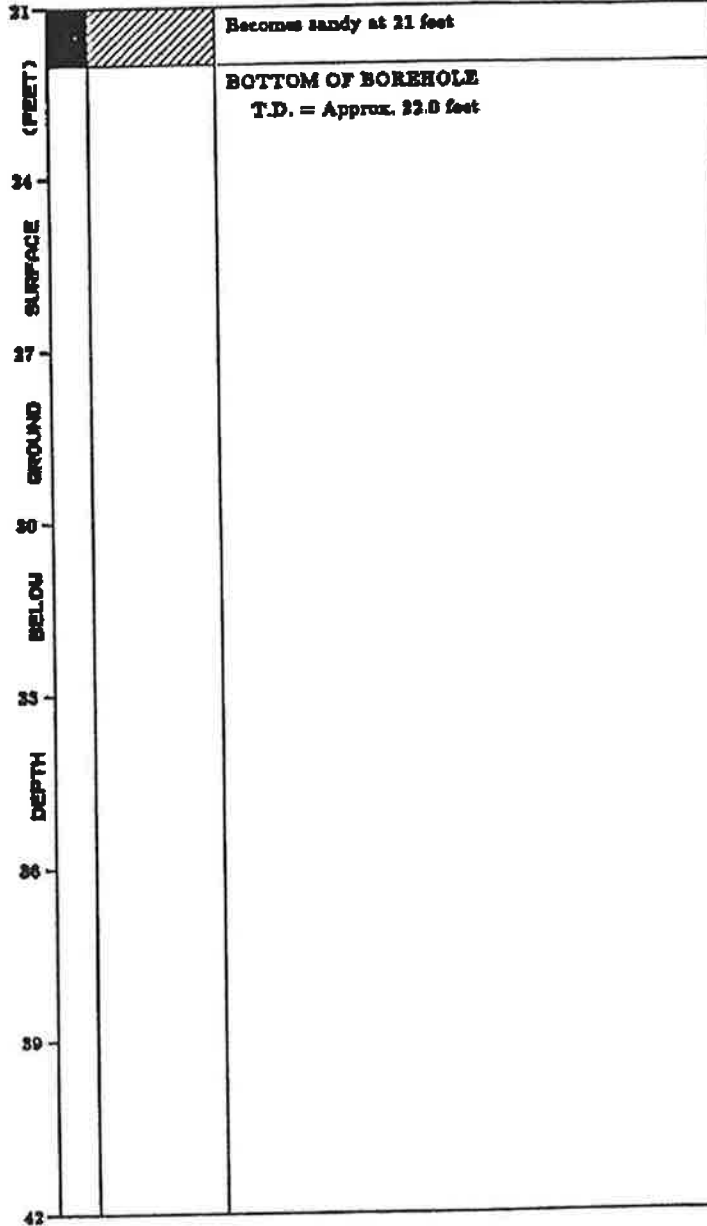
CLIENT P.O. PARTNERS TEST HOLE NUMBER MW-3
 LOCATION 1850 55th STREET, EMERYVILLE, CALIFORNIA DRILLER ASE DRILLING, INC.
 DATE 14 November 1989 DRILLING METHOD HOLLOW-STEM AUGER
 GEOLOGIST M.L. PIERCE HOLE DIAMETER 10.75-INCHES

WELL CONSTRUCTION

(18.3-22.0 feet)



LITHOLOGY DESCRIPTION



EXPLANATION

▼ Water level during drilling
 OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
 ■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-4

LOCATION 1680 86th STREET,
EMERYVILLE, CALIFORNIA

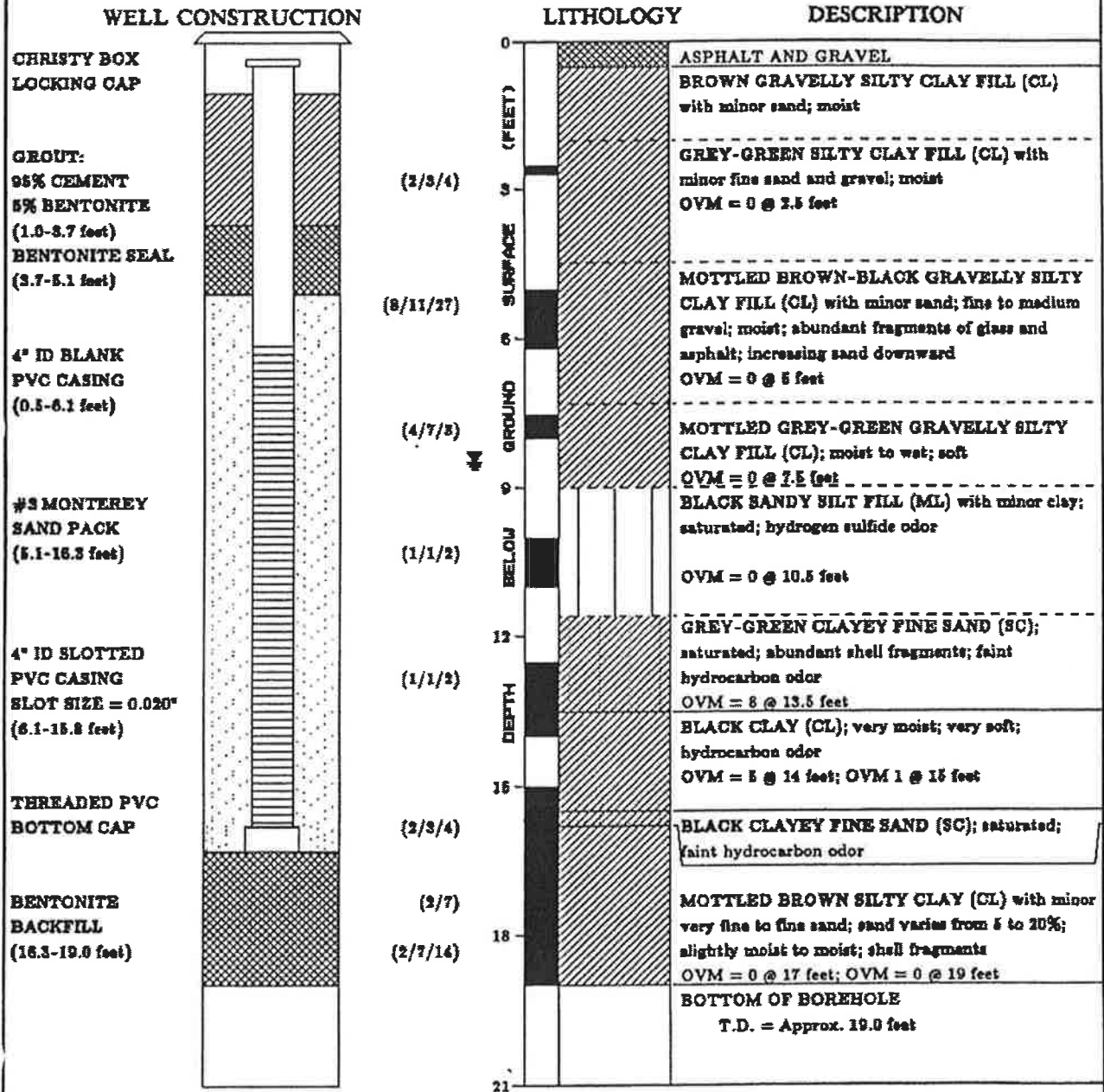
DRILLER ASE DRILLING, INC.

DATE 15 November 1989

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

HOLE DIAMETER 10.75-INCHES



EXPLANATION

∇ Water level during drilling
OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
■ Location of sample

CLIENT F.O. PARTNERS

TEST HOLE NUMBER MW-5

LOCATION 1650 65th STREET,
EMERYVILLE, CALIFORNIA

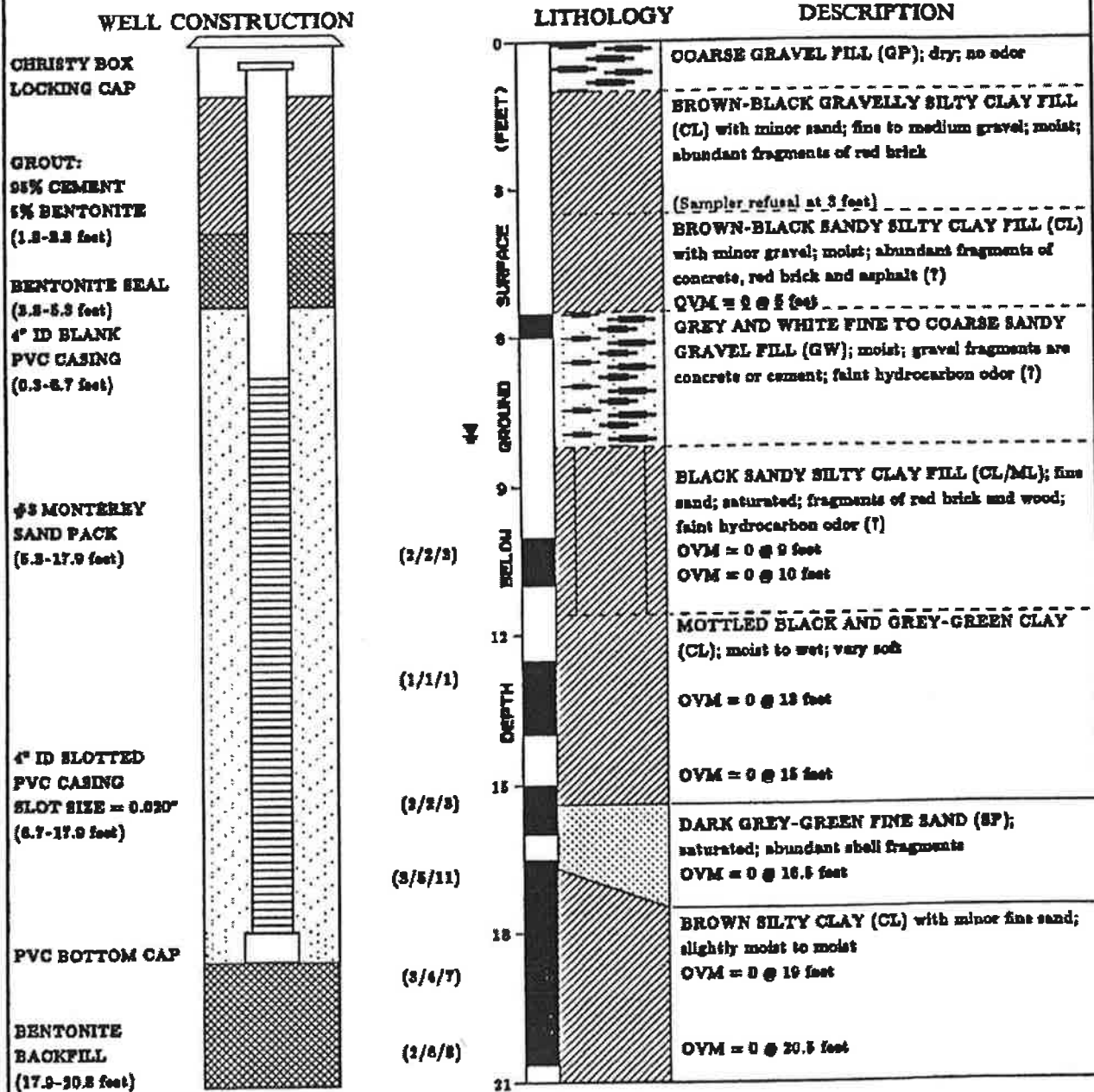
DRILLER ASE DRILLING, INC.

DATE 16 November 1989

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

HOLE DIAMETER 10.75-INCHES



EXPLANATION
 ▽ Water level during drilling
 OVM Organic Vapor Meter Reading
 - - - Contact (dashed where approximate)
 ■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-5

LOCATION 1880 65th STREET,
EMERYVILLE, CALIFORNIA

DRILLER ASE DRILLING, INC.

DATE 16 November 1989

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST M.L. PIERCE

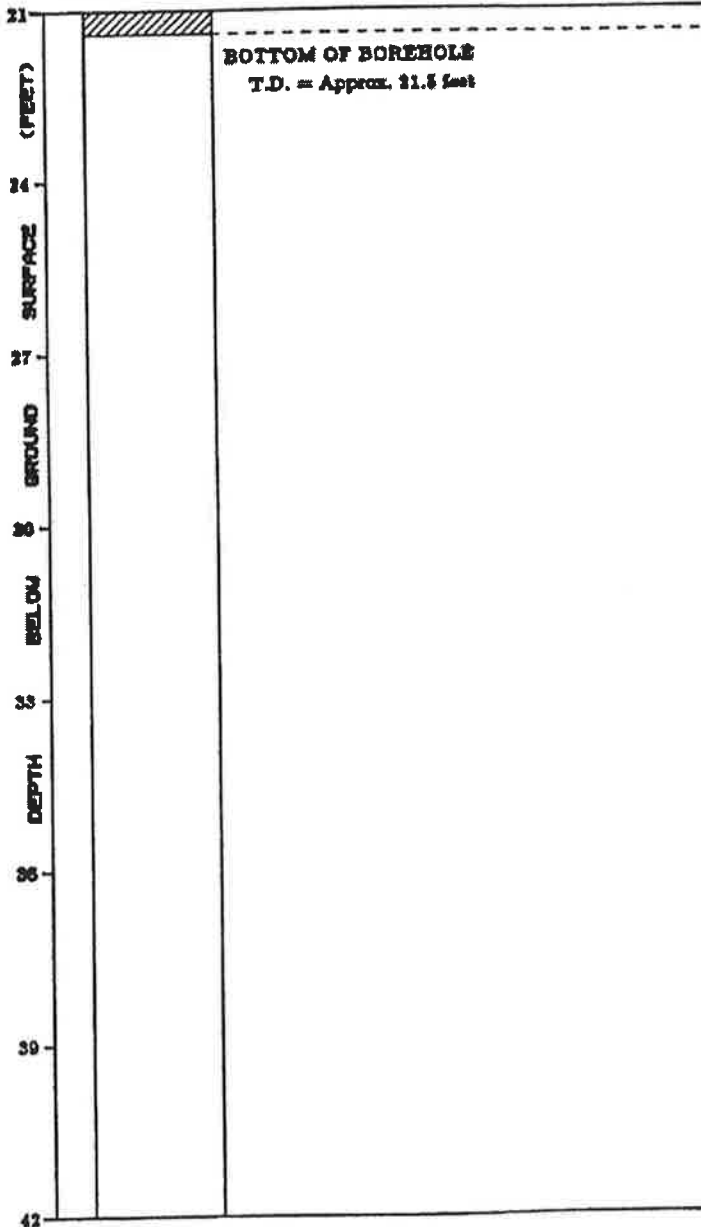
HOLE DIAMETER 10.75-INCHES

WELL CONSTRUCTION



LITHOLOGY

DESCRIPTION



EXPLANATION

⊥ Water level during drilling
OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
■ Location of sample

CLIENT P.O. PARTNERS TEST HOLE NUMBER MW-6
 LOCATION 1650 65th STREET, EMERYVILLE, CALIFORNIA DRILLER ASE DRILLING, INC.
 DATE 27 March 1990 DRILLING METHOD HOLLOW-STEM AUGER
 GEOLOGIST P.F. BERTUCCI, R.G. HOLE DIAMETER 10.75-INCHES

WELL CONSTRUCTION

CHRISTY BOX
 LOCKING CAP
 CEMENT GROUT:
 (0.4-4.8)

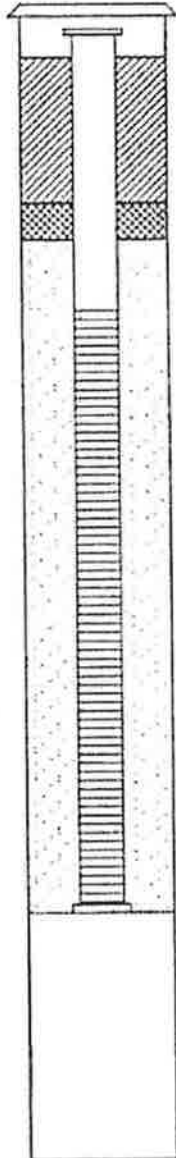
BENTONITE
 SPACER
 (4.6-5.7)

4" ID PVC
 BLANK CASING
 (0-7.1 feet)

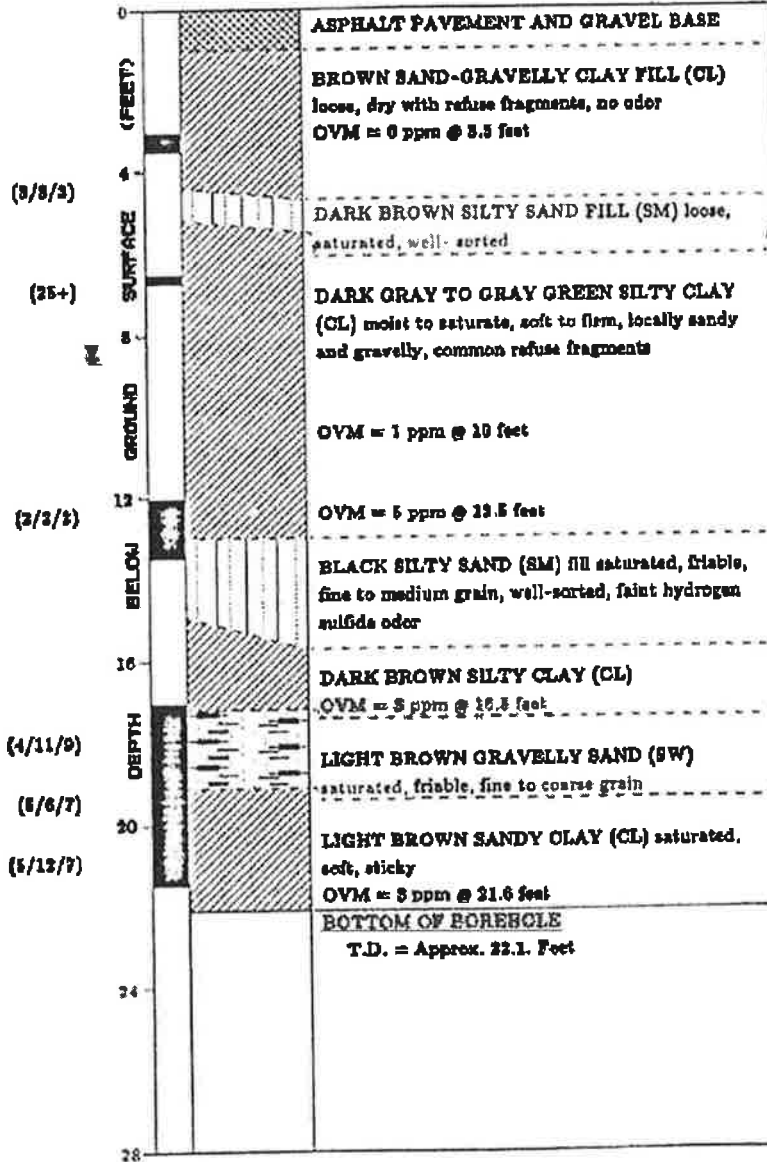
MONTEREY #3
 SAND PACK
 (5.7-22.1 feet)

4" ID PVC
 SLOTTED CASING
 SLOT SIZE = 0.020"
 (7.1-21.8 feet)

PVC INSERT
 BOTTOM CAP



LITHOLOGY DESCRIPTION



EXPLANATION

∩ Water level during drilling
 OVM Organic Vapor Meter Reading

--- Contact (dashed where approximate)
 ■ Location of sample

CLIENT P.O. PARTNERS

TEST HOLE NUMBER MW-7

LOCATION 1050 65th STREET,
EMERYVILLE, CALIFORNIA

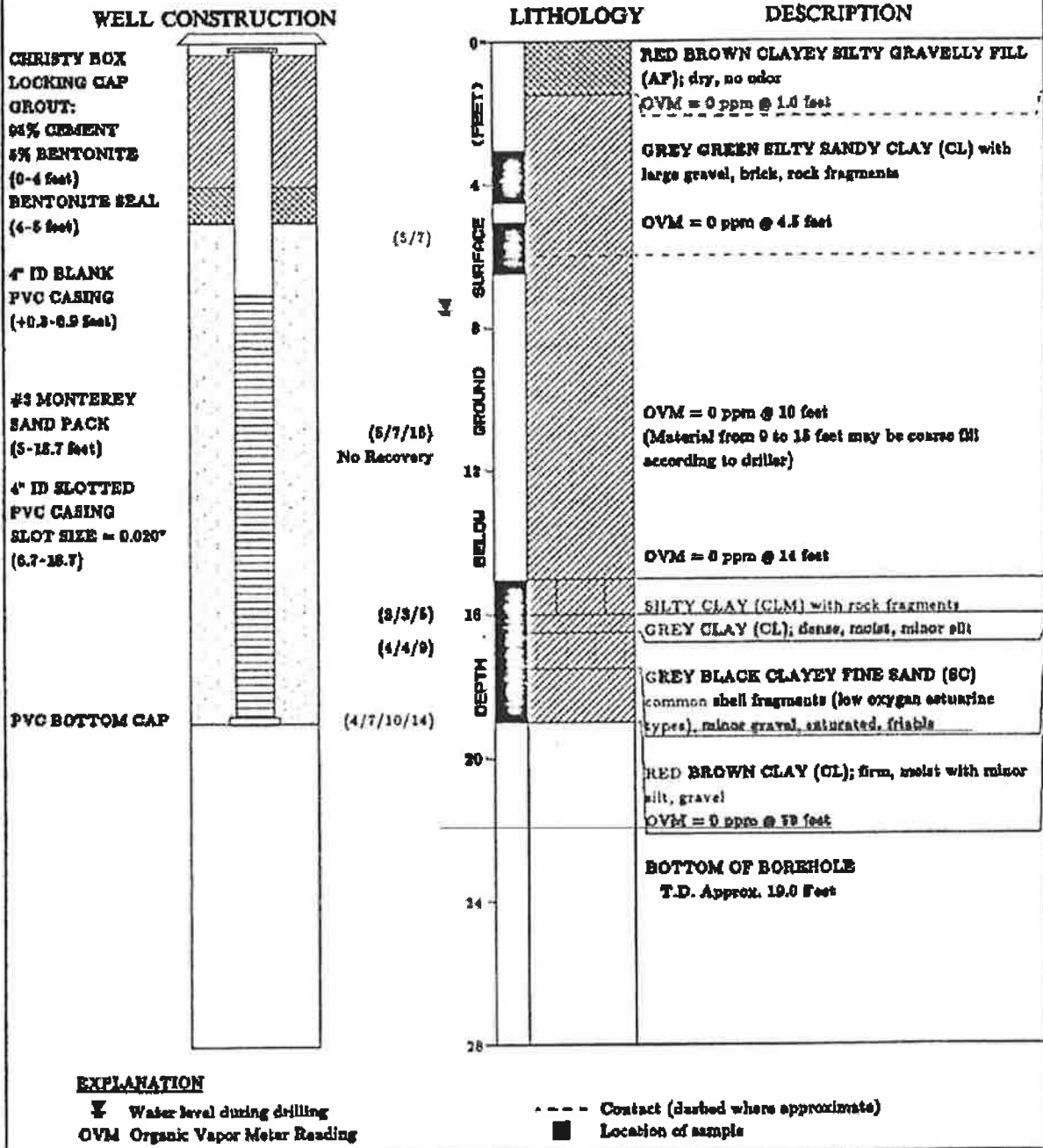
DRILLER ASE DRILLING, INC.

DATE 29 March 1990

DRILLING METHOD HOLLOW-STEM AUGER

GEOLOGIST HENRI ROCA III

HOLE DIAMETER 6-INCHES



BORING LOGS PREPARED BY PES ENVIRONMENTAL



WELL CONSTRUCTION DETAIL	PID (PPM)	BLOWS/IN	DEPTH (FT)	SYMBOLS	MATERIALS DESCRIPTION
Christy Box					
<p>2" dia. PVC sleeve casing cement/bentonite seal bentonite packer seal 8 1/2" PVC Laminar sand pack</p>					<p>ASPHALT BROWNISH YELLOW SAND (SW) 10YR 6/8, damp, fine-grained to medium-grained sand.</p> <p>VERY DARK GRAYISH BROWN SANDY CLAY (CL) 10YR 3/2, damp, ~25% sand, ~15% subangular, 1/4 to 1-inch gravel.</p> <p>GREENISH GRAY SANDY CLAY (CL) WITH GRAVEL 5G 5/1, moist, ~20% fine to medium-grained sand, ~5% subangular up to 2-inch gravel, hydrocarbon odor.</p> <p>VERY DARK GRAYISH BROWN SANDY CLAY (CL) 2.5Y 3/2, medium stiff, moist, 25-30% fine to medium-grained sand, hydrocarbon odor.</p> <p>BLACK SANDY CLAY (CL) 2.5y 2.5/1, medium stiff, wet, ~50% fine to medium-grained sand, hydrocarbon odor.</p>
	1.0	4 8 6	5		
	1.0				
	17	4 5 6	10		
			15		

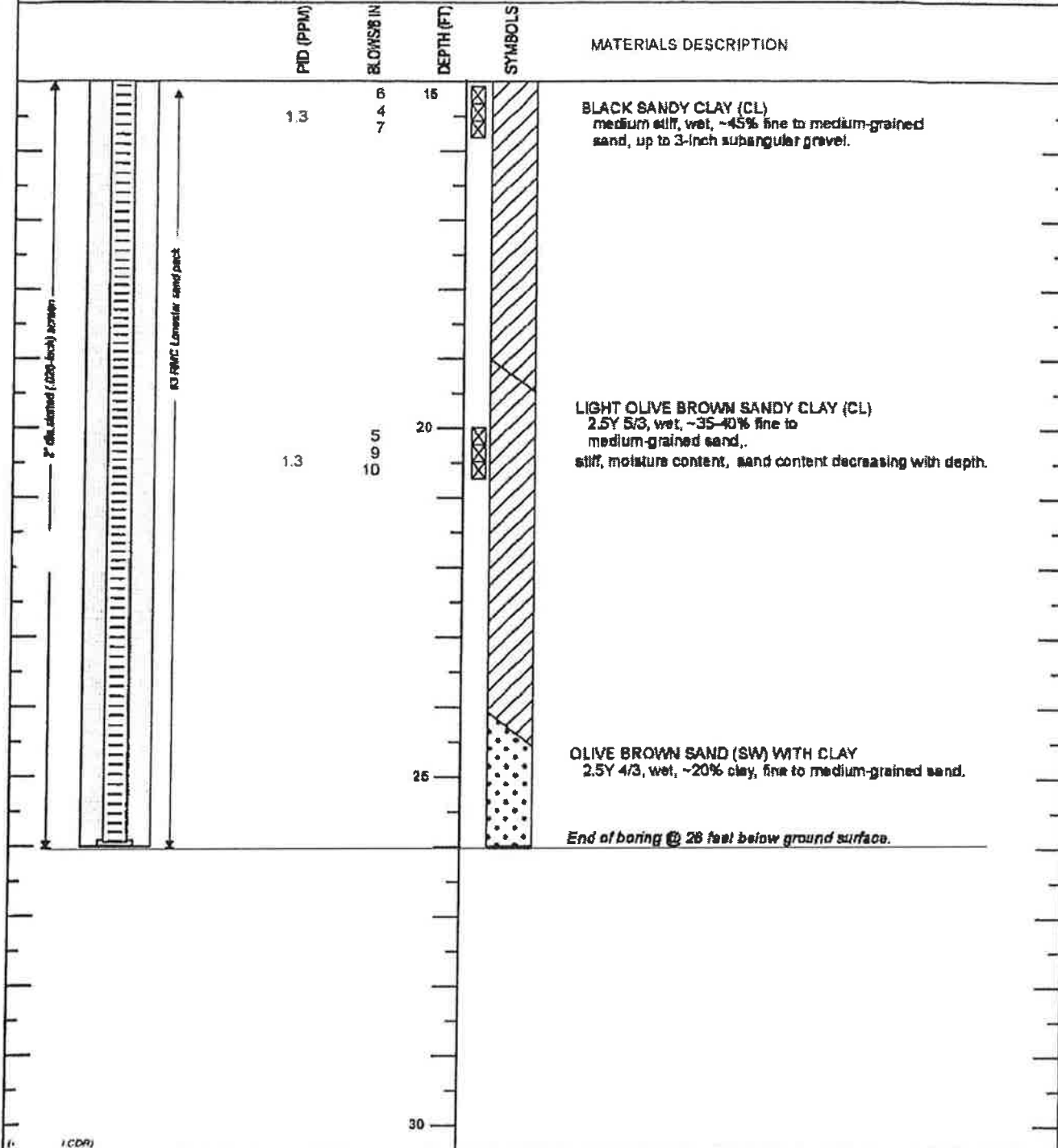
(Continued)

CLIENT P.O. Partners
LOCATION Emeryville, California
JOB NUMBER 131.0100.005
GEOLOGIST/ENGINEER Brian Smith
DRILL RIG Mobile Drill B-53

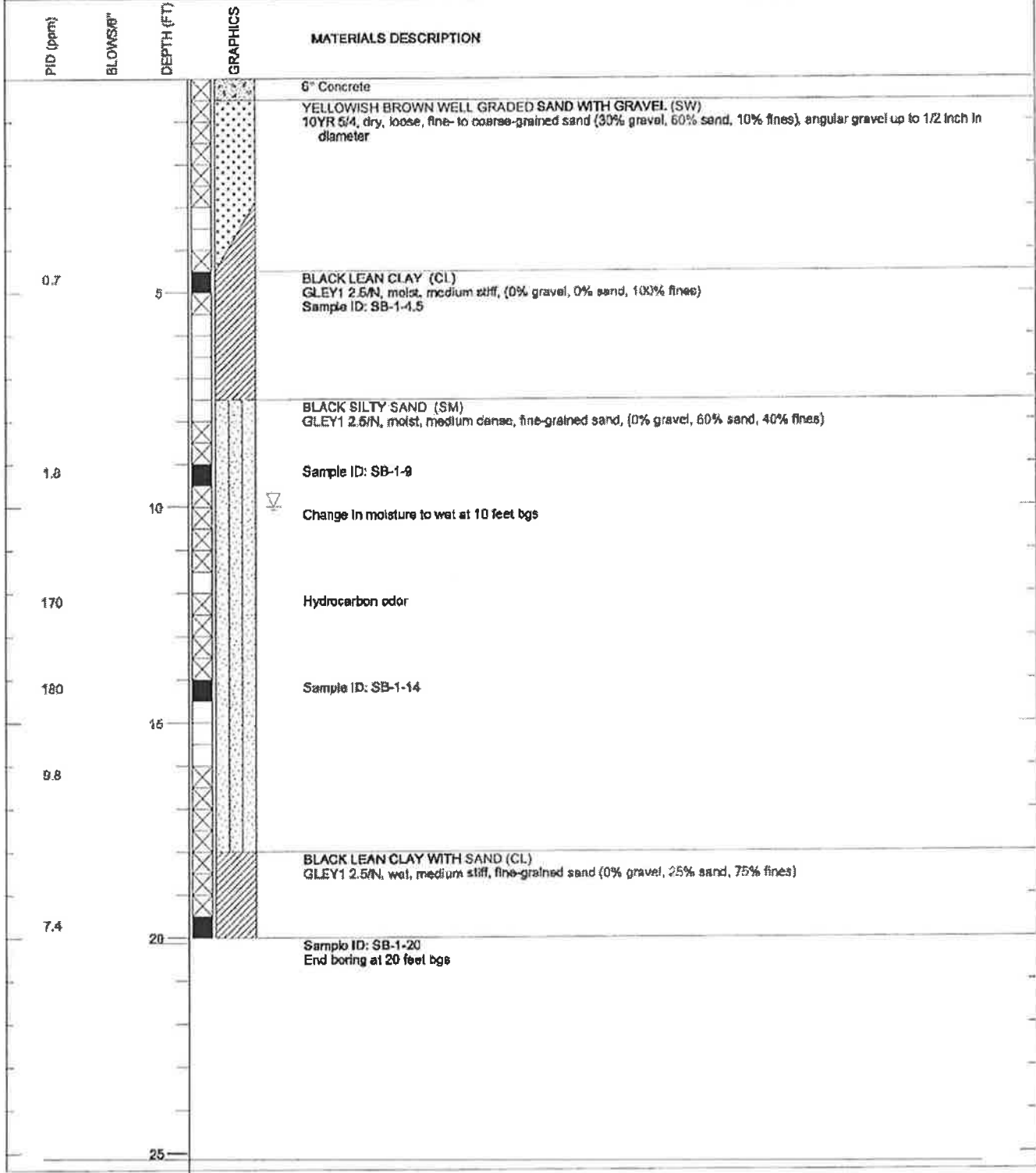
DIAMETER OF HOLE 9 inches
TOTAL DEPTH OF HOLE 26 feet bgs
TOP OF CASING ELEVATION 0 feet bgs
DATE STARTED 9/22/94
DATE COMPLETED 9/22/94

PLATE

A-2a

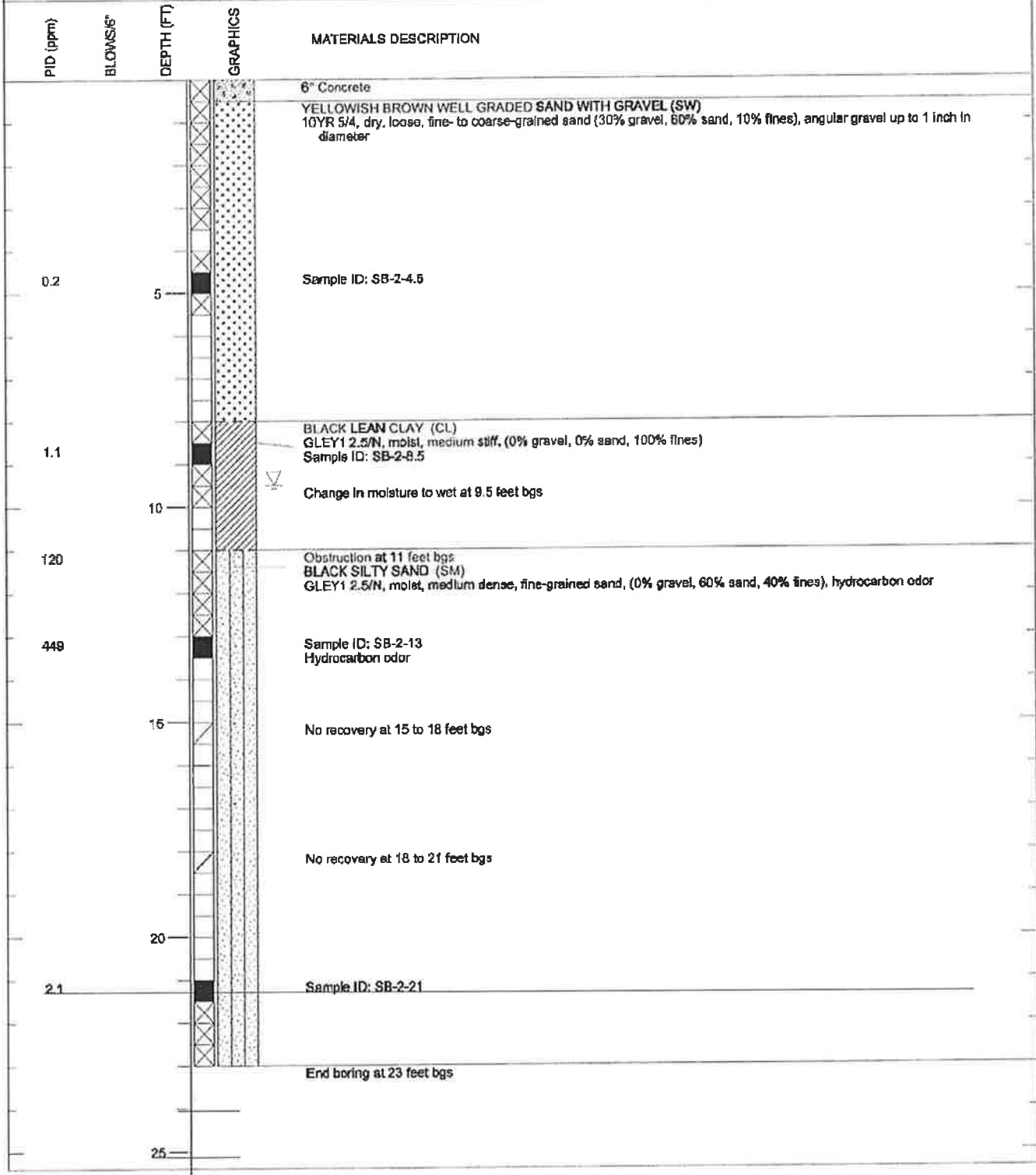


CLIENT	P.O. Partners	DIAMETER OF HOLE	9 inches	PLATE A-2b
LOCATION	Emeryville, California	TOTAL DEPTH OF HOLE	26 feet bgs	
JOB NUMBER	131.0100.005	TOP OF CASING ELEVATION	0 feet bgs	
GEOLOGIST/ENGINEER	Brian Smith	DATE STARTED	9/22/94	
DRILL RIG	Mobile Drill B-53	DATE COMPLETED	9/22/94	



PROJECT	1850 85th Street	REVIEWED BY	CJB
LOCATION	1650 85th Street, Emeryville CA	DIAMETER OF HOLE	2 inch
JOB NUMBER	1211.001.02.003	TOTAL DEPTH OF HOLE	20 feet
LOGGED BY	J Alexander	DATE STARTED	3/20/12
DRILL RIG	Direct Push	DATE COMPLETED	3/20/12

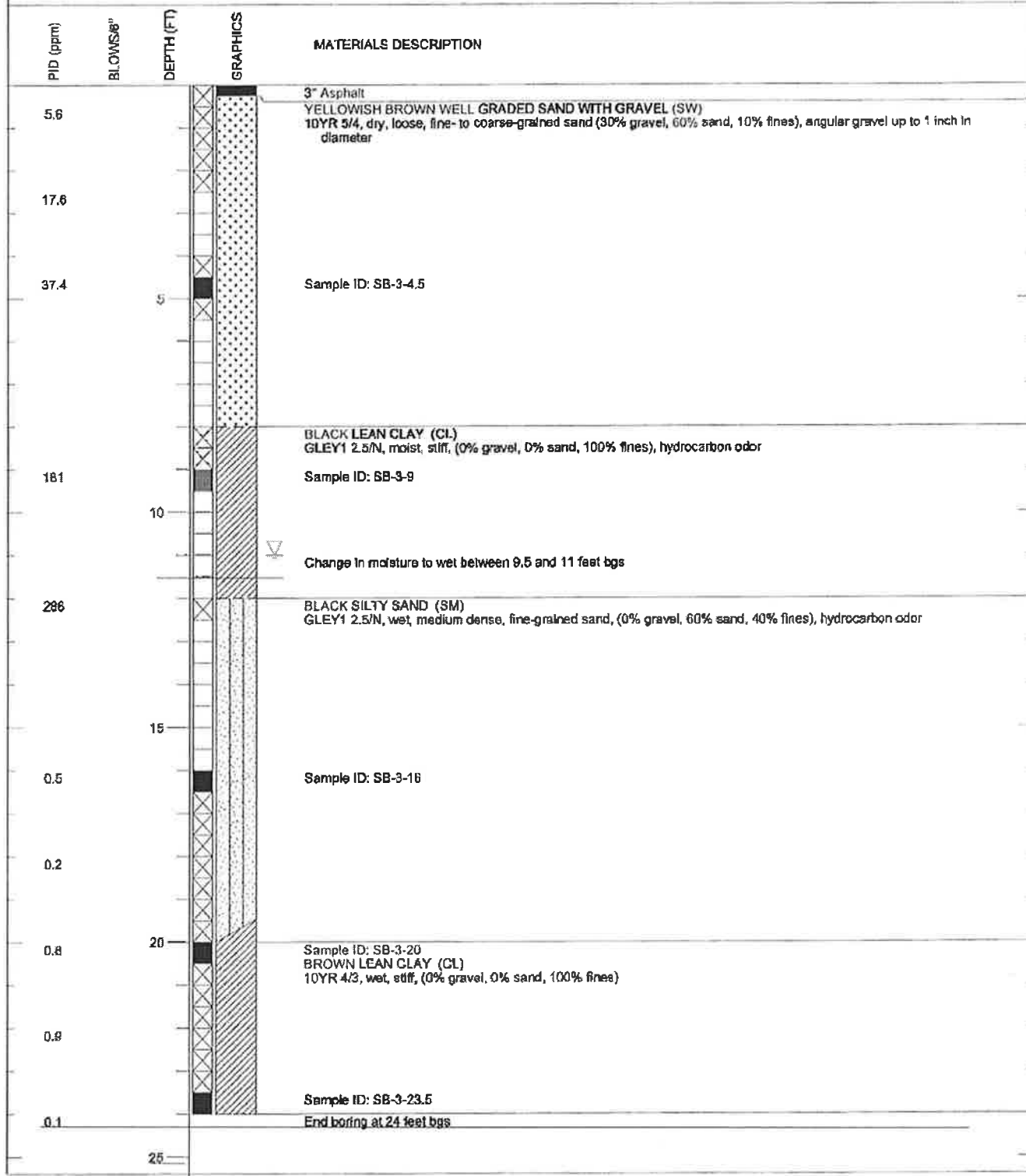
PLATE
C-1



PROJECT 1850 85th Street
 LOCATION 1650 85th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

REVIEWED BY CJB
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 23 feet
 DATE STARTED 3/20/12
 DATE COMPLETED 3/20/12

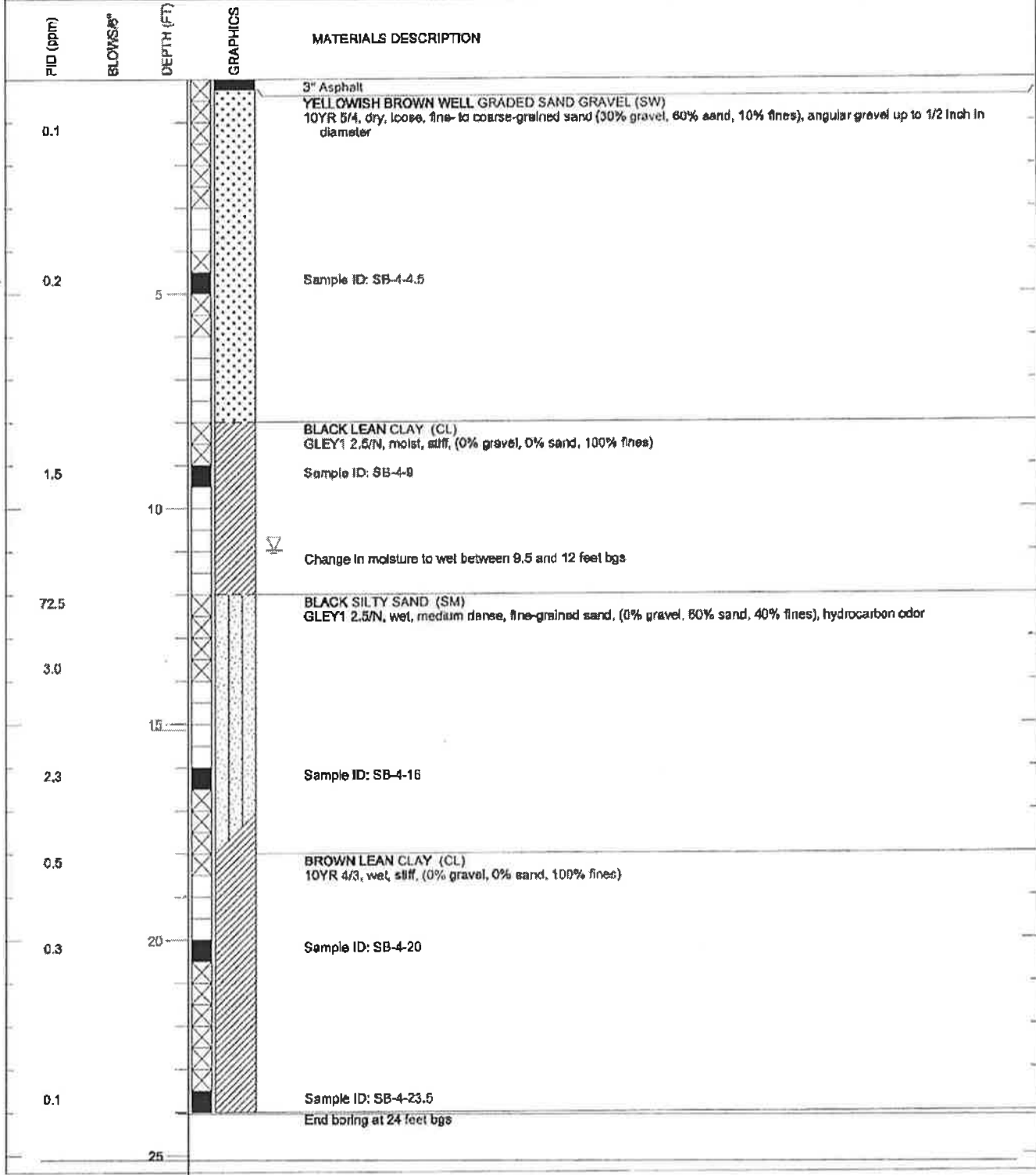
PLATE
C-2



PROJECT 1653 65th Street
 LOCATION 1653 65th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

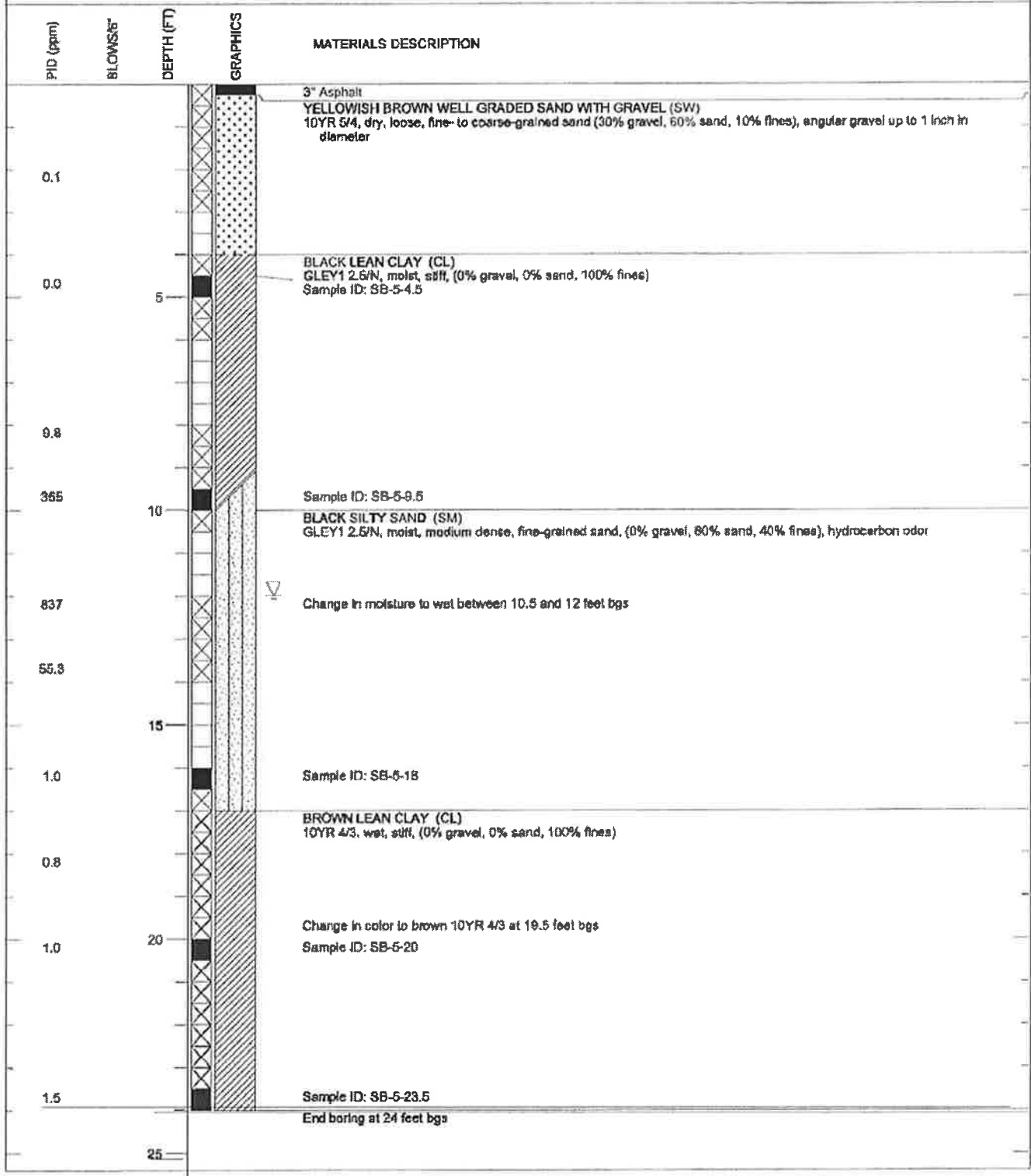
REVIEWED BY CJB
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 24 feet
 DATE STARTED 3/21/12
 DATE COMPLETED 3/21/12

PLATE
C-3



PROJECT	1650 65th Street	REVIEWED BY	CJB
LOCATION	1650 65th Street, Emeryville CA	DIAMETER OF HOLE	2 inch
JOB NUMBER	1211.001.02.003	TOTAL DEPTH OF HOLE	24 feet
LOGGED BY	J Alexander	DATE STARTED	3/21/12
DRILL RIG	Direct Push	DATE COMPLETED	3/21/12

PLATE
C-4



PROJECT	1850 85th Street	REVIEWED BY	CJB
LOCATION	1850 85th Street, Emeryville CA	DIAMETER OF HOLE	2 inch
JOB NUMBER	1211.001.02.003	TOTAL DEPTH OF HOLE	24 feet
LOGGED BY	J Alexander	DATE STARTED	3/21/12
DRILL RIG	Direct Push	DATE COMPLETED	3/21/12

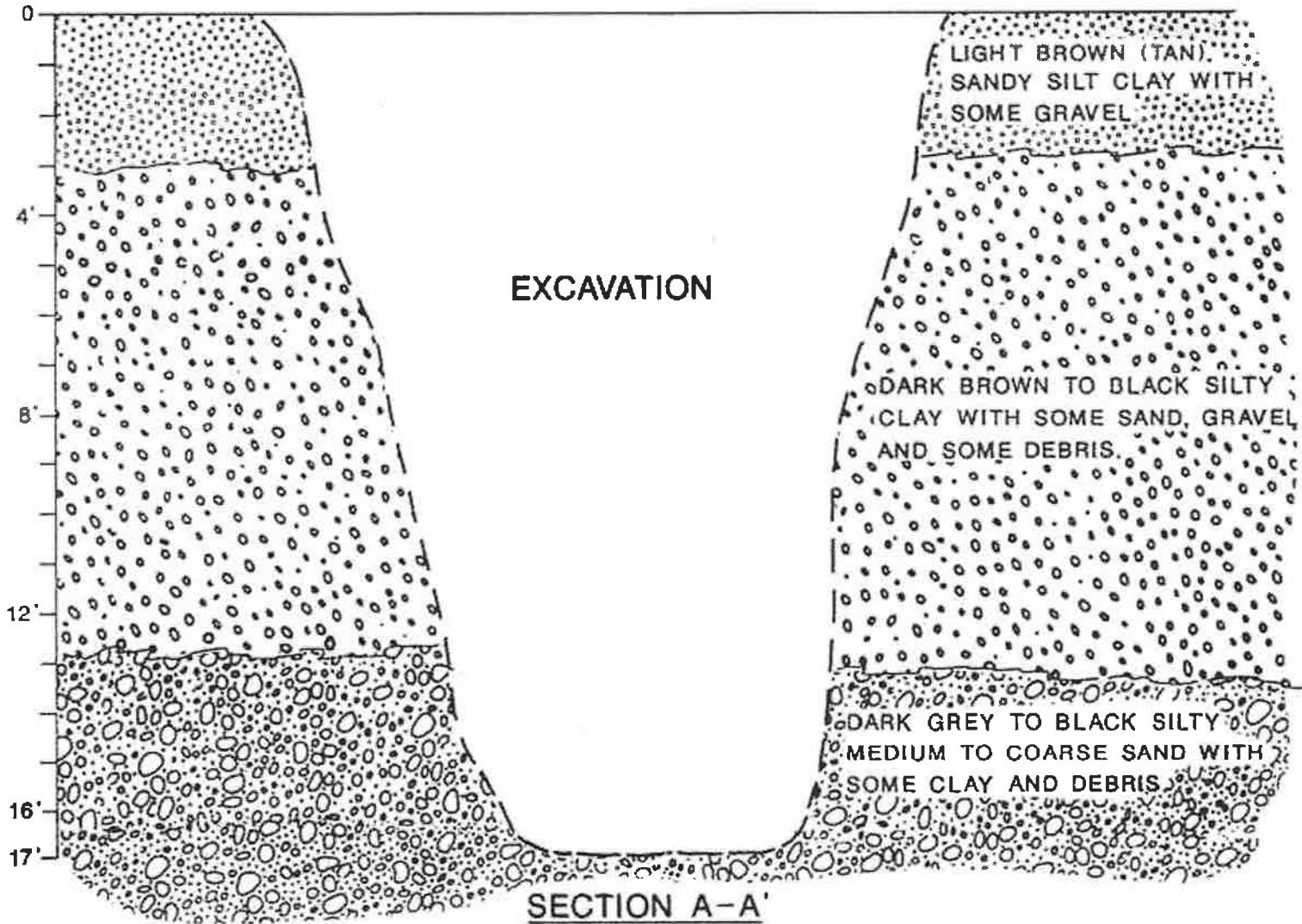
PLATE
C-5

APPENDIX B

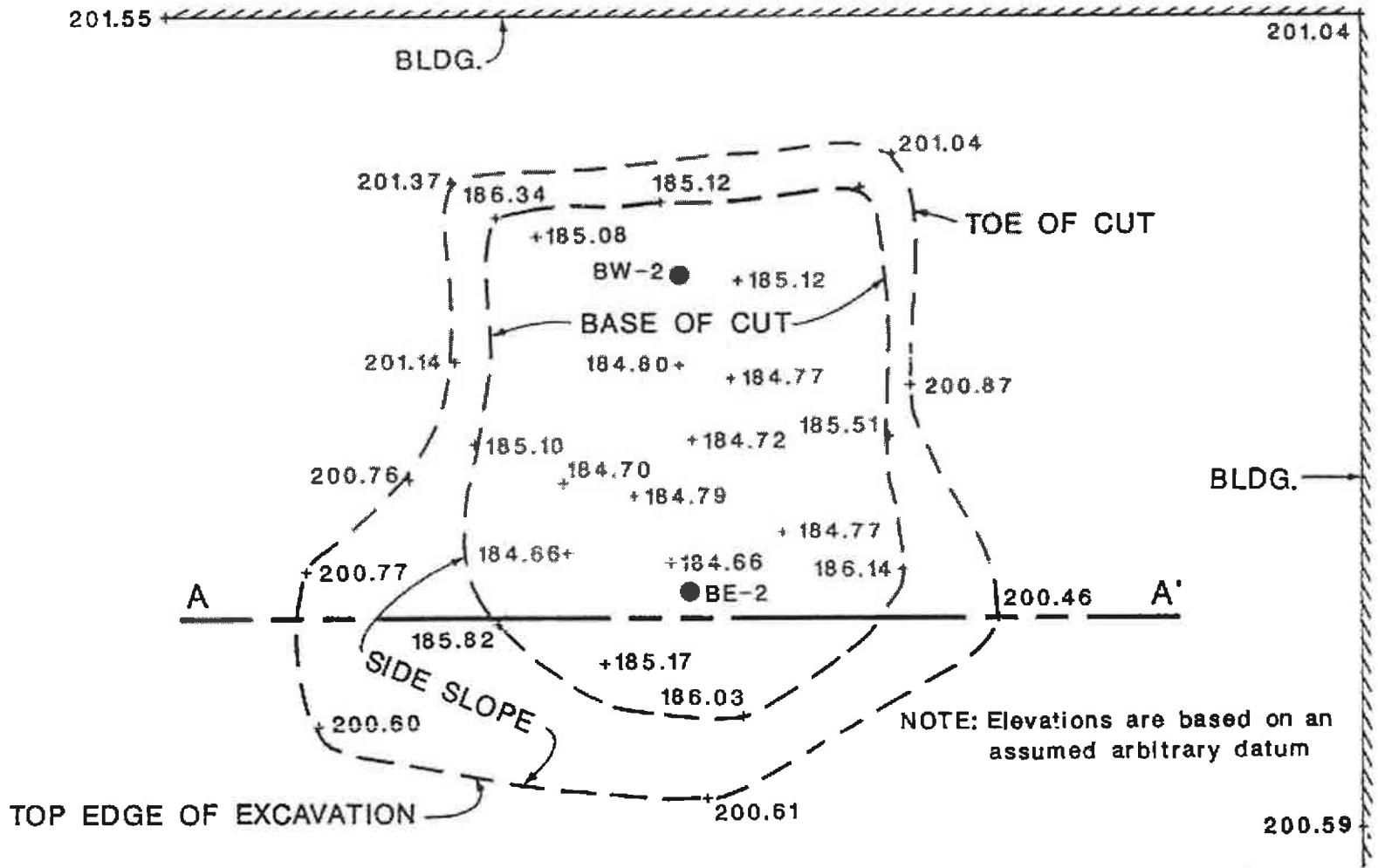
**PERTINENT DATA FROM PREVIOUS ENVIRONMENTAL REPORTS PREPARED
BY PES AND OTHERS**

**PERTINENT TABLES AND PLATES EXCERPTED FROM REPORTS PREPARED BY
ENGINEERING SCIENCE**

DEPTH FROM
GROUND SURFACE



**SOIL STRATIGRAPHY ALONG EXCAVATION
1650, 65th Street
EMERYVILLE**



**EXCAVATION PLAN
AND SAMPLING LOCATIONS
1650, 65th Street
EMERYVILLE**

LEGEND

- SAMPLING LOCATIONS
- + ELEVATIONS IN FEET ABOVE AN ARBITRARY DATUM

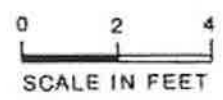


TABLE 1
SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS

Sample I.D.	Date Sampled	Depth (ft)	Location of sample	Matrix	Total Fuel Hydrocarbons	EPA Method 8020		Lead (mg/kg, dry)
						Toluene (ppm)	Xylene (ppm)	
N-1	7/2/87	12	Beneath tanks	Soil	ND	ND	ND	5
S-1	7/2/87	12	Beneath tanks	Soil	ND	ND	ND	4.8
FP-1	7/2/87	3	Beneath product line	Soil	490 ppm	0.90	23	36
MW-5*	7/27/87	5	5' west of UST	Soil	170 mg/kg	NA	NA	NA
MW-10*	7/27/87	10	10' below ground surface	Soil	6,600 mg/kg	NA	NA	NA
MW-1	7/28/87		Monitoring Well 1	Water	200 mg/kg	NA	NA	NA
EB-5	4/13/87	7.5, 9	Location on Figure 2	Soil	200 mg/kg	NA	NA	NA
BW-1	2/24/88	12.5	Bottom of excavation (12.5')	Soil	4,800 mg/kg	200	350	17
SW-1	2/24/88	8, 9.5	Sides of excavation	Soil	6.5 mg/kg	0.11	0.25	NA
SNE-1	2/24/88	9.5	Sides of excavation	Soil	520 mg/kg	5.6	78	NA
BW-2	3/9/88	17	Bottom of excavation (17')	Soil	390 mg/kg	56	51	ND
BE-2	3/9/88	17	Bottom of excavation (17')	Soil	ND	ND	ND	ND

* All gas

** Gas, diesel, and waste oil

NA = Not Analyzed

ND = Below Detection Limits

TABLE 3.1

**SOIL SAMPLING ANALYTICAL RESULTS
Groundwater Monitoring Wells MW-3, MW-4, and MW-5
1650 65th Street Property
14, 15, and 16 November 1989**

Contaminant	MW-3 (4.5 ft.)	MW-4 (5.5 ft.)	MW-5 (5.5 ft.)
<u>Organics</u>			
Gasoline (mg/Kg)	<10	<10	<10
Benzene ($\mu\text{g/Kg}$)	<5	<5	<5
Toluene ($\mu\text{g/Kg}$)	<5	10	<5
Total Xylenes ($\mu\text{g/Kg}$)	<5	10	<5
Ethylbenzene ($\mu\text{g/Kg}$)	<5	<5	<5
<u>Inorganics</u>			
Lead (mg/Kg)	NA	NA	25

NA = Not Analyzed

all three wells were analyzed by modified EPA Method 8015 for TPH (as gasoline) and by EPA Method 8020 for BTXE. The soil sample from Well MW-5 was also analyzed by EPA Method 8010 for purgeable halocarbons and by EPA Method 7420/7421 for lead. Appendix B contains the soil sampling analytical results and chain-of-custody records.

Gasoline was not detected (<10 mg/Kg) in the three soil samples. Low concentrations of toluene (10 $\mu\text{g/Kg}$) and total xylenes (10 $\mu\text{g/Kg}$) were detected in the soil sample collected from Well MW-4. A concentration of 25 mg/Kg lead was detected in the soil sample collected from Well MW-5. This concentration of lead is probably indicative of the composition of the local fill materials and may not represent contamination associated with leakage from a UFST.

GROUNDWATER SAMPLING AND ANALYSIS

On 20 and 21 November 1989 the quarterly groundwater monitoring program was initiated for the newly installed wells (MW-2, MW-3, MW-4, and MW-5). Well MW-2 was previously sampled on 2 and 16 October 1989 (Reference 4). The quarterly

SECTION 3

RESULTS AND EVALUATION

This section presents the hydrologic and hydrochemical results of the March-April 1990, soil/groundwater sampling, and aquifer pump test event conducted at the project site. The results of the new soil and groundwater analysis help to further define the extent of contamination at project site. The aquifer pump test provided the additional aquifer parameters, refined hydrogeologic characteristics, determined the optimum hydraulic extraction rate, and fluctuations in contaminant concentrations during extraction, necessary for final evaluation of groundwater remediation alternatives.

SOIL SAMPLING

Table 3.1 presents the analytical results for two soil samples collected during the installation of wells MW-6 and MW-7 on March 27 and 28, 1990, respectively. One sample was collected at a depth of 6.5 to 7.5 feet from each well. Sampling protocol consisted of driving a clean sampler with 2.5 inch O.D. inner brass tube liners into undisturbed soil. When the sampler was removed from the hole, the appropriate inner brass tube liner was sealed at both ends with Teflon tape and non-reactive caps, refrigerated, and transported to a DHS certified hazardous waste laboratory. The soil samples from the two wells were analyzed by modified EPA Method 8015 for TPH (as gasoline) and by EPA Method 8020 for BTXE. The soil sampling analytical results and chain-of-custody records are included in Appendix C.

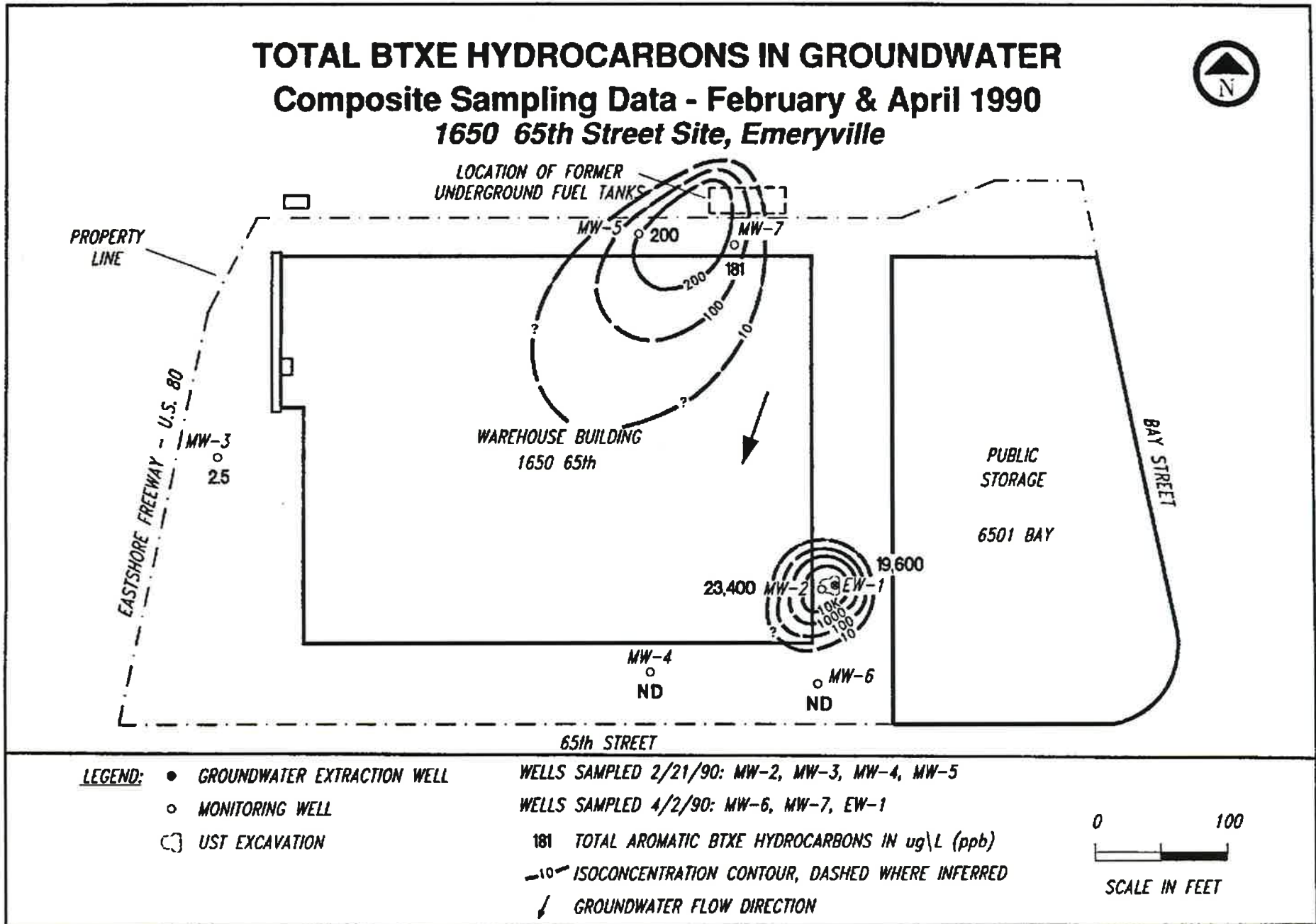
TABLE 3.1

SOIL SAMPLE ANALYTICAL RESULTS

Constituent	Borehole MW-6 (6.5 - 7.0 ft)	Borehole MW-7 (5.5 - 6.0 ft)
TPH Gasoline	ND	ND
Benzene	ND	ND
Toluene	ND	ND
Xylenes	ND	ND
Ethyl Benzene	ND	ND

ND = Not detected above method detection limits
(See laboratory reports)

FIGURE 3.1



ENGINEERING-SCIENCE

FIGURE 3.1

**PERTINENT TABLES AND PLATES EXCERPTS FROM REPORTS PREPARED BY
PES ENVIRONMENTAL**

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
MW-2	21-Feb-90	ES	15.75	11.72	4.03
	25-May-90	ES	15.75	11.83	3.92
	29-Aug-90	ES	15.75	11.72	4.03
	29-Nov-90	ES	15.75	11.99	3.76
	1-Mar-91	ES	15.79	12.87	2.92
	28-May-91	ES	15.79	12.21	3.58
	1-Aug-91	ES	15.79	NA	NA
	27-Jan-92	PES	15.79	11.78	4.01
	28-Feb-92	PES	15.79	11.70	4.09
	28-May-92	PES	15.79	11.83	3.96
	27-Aug-92	PES	15.79	12.28	3.51
	10-Nov-92	PES	15.79	12.40	3.39
	18-Feb-93	PES	15.79	12.00	3.79
	20-May-93	PES	15.79	12.00	3.79
	19-Aug-93	PES	15.79	12.11	3.68
	15-Nov-93	PES	15.79	11.64	4.15
	14-Feb-94	PES	15.79	11.45	4.34
	16-May-94	PES	15.79	11.25	4.54
	10-Aug-94	PES	15.79	11.22	4.57
	3-Nov-94	PES	15.79	11.32	4.47
	9-Feb-95	PES	15.79	10.64	5.15
	9-May-95	PES	15.79	10.60	5.19
	10-Aug-95	PES	15.79	10.98	4.81
	13-Nov-95	PES	15.79	11.18	4.61
	2-Mar-96	PES	15.79	10.42	5.37
	9-May-96	PES	15.79	10.78	5.01
	8-Aug-96	PES	15.79	10.56	5.23
	11-Nov-96	PES	15.79	10.64	5.15
	14-Feb-97	PES	15.79	10.29	5.50
	14-May-97	PES	15.79	10.60	5.19
	12-Aug-97	PES	15.79	10.87	4.92
	12-Nov-97	PES	15.79	10.64	5.15
4-Feb-98	PES	15.79	10.83	4.96	
18-May-98	PES	15.79	10.10	5.69	
11-Aug-98	PES	15.79	10.58	5.21	
17-Dec-98	PES	15.79	10.45	5.34	
7-Oct-99	PES	15.79	10.51	5.28	
12-Oct-00	PES	15.79	10.73	5.06	
MW-3	21-Feb-90	ES	12.45	9.18	3.27
	25-May-90	ES	12.45	9.25	3.20
	29-Aug-90	ES	12.45	9.50	2.95
	29-Nov-90	ES	12.45	9.80	2.65
	1-Mar-91	ES	12.43	9.51	2.92
MW-3	28-May-91	ES	12.43	9.03	3.40
Cont.	1-Aug-91	ES	12.43	NA	NA
	27-Jan-92	PES	12.43	9.44	2.99

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
	28-Feb-92	PES	12.43	8.80	3.63
	28-May-92	PES	12.43	8.80	3.63
	27-Aug-92	PES	12.43	9.18	3.25
	10-Nov-92	PES	12.43	9.44	2.99
	18-Feb-93	PES	12.43	7.59	4.84
	20-May-93	PES	12.43	8.21	4.22
	19-Aug-93	PES	12.43	8.71	3.72
	15-Nov-93	PES	12.43	9.09	3.34
	14-Feb-94	PES	12.43	8.84	3.59
	16-May-94	PES	12.43	8.18	4.25
	10-Aug-94	PES	12.43	8.72	3.71
	3-Nov-94	PES	12.43	8.13	4.30
	9-Feb-95	PES	12.43	6.86	5.57
	9-May-95	PES	12.43	7.16	5.27
	10-Aug-95	PES	12.43	8.00	4.43
	13-Nov-95	PES	12.43	8.44	3.99
	2-Mar-96	PES	12.43	7.31	5.12
	9-May-96	PES	12.43	7.72	4.71
	8-Aug-96	PES	12.43	8.22	4.21
	11-Nov-96	PES	12.43	8.67	3.76
	14-Feb-97	PES	12.43	7.18	5.25
	14-May-97	PES	12.43	8.03	4.40
	12-Aug-97	PES	12.43	7.39	5.04
	12-Nov-97	PES	12.43	8.53	3.90
	4-Feb-98	PES	12.43	7.39	5.04
	18-May-98	PES	12.43	7.31	5.12
	11-Aug-98	PES	12.43	7.95	4.48
	17-Dec-98	PES	12.43	8.58	3.85
	7-Oct-99	PES	12.43	8.25	4.18
	12-Oct-00	PES	12.43	8.22	4.21
MW-4	21-Feb-90	ES	12.24	8.63	3.61
	25-May-90	ES	12.24	8.58	3.66
	29-Aug-90	ES	12.24	8.50	3.74
	29-Nov-90	ES	12.24	8.74	3.50
	1-Mar-91	ES	12.24	8.65	3.59
	28-May-91	ES	12.24	8.57	3.67
	1-Aug-91	ES	12.24	NA	NA
	27-Jan-92	PES	12.24	8.62	3.62
	28-Feb-92	PES	12.24	8.52	3.72
	28-May-92	PES	12.94	8.35	3.89
MW-4	27-Aug-92	PES	12.24	9.00	3.24
Cont.	10-Nov-92	PES	12.24	8.85	3.39
	18-Feb-93	PES	12.24	8.17	4.07
	20-May-93	PES	12.24	8.21	4.03
	19-Aug-93	PES	12.24	8.20	4.04
	15-Nov-93	PES	12.24	8.33	3.91

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
	14-Feb-94	PES	12.24	8.30	3.94
	16-May-94	PES	12.24	8.20	4.04
	10-Aug-94	PES	12.24	8.14	4.10
	3-Nov-94	PES	12.24	8.30	3.94
	9-Feb-95	PES	12.24	8.11	4.13
	9-May-95	PES	12.24	7.76	4.48
	10-Aug-95	PES	12.24	7.91	4.33
	13-Nov-95	PES	12.24	7.95	4.29
	2-Mar-96	PES	12.24	7.89	4.35
	9-May-96	PES	12.24	7.64	4.60
	8-Aug-96	PES	12.24	7.76	4.48
	11-Nov-96	PES	12.24	8.00	4.24
	14-Feb-97	PES	12.24	7.63	4.61
	14-May-97	PES	12.24	7.78	4.46
	12-Aug-97	PES	12.24	7.71	4.53
	12-Nov-97	PES	12.24	7.84	4.40
	4-Feb-98	PES	12.24	7.11	5.13
	18-May-98	PES	12.24	7.35	4.89
	11-Aug-98	PES	12.24	7.52	4.72
	17-Dec-98	PES	12.24	7.99	4.25
	7-Oct-99	PES	12.24	7.82	4.42
	12-Oct-00	PES	12.24	7.97	4.27
MW-5	21-Feb-90	ES	12.81	6.91	5.90
	25-May-90	ES	12.81	7.58	5.23
	29-Aug-90	ES	12.81	7.75	5.06
	29-Nov-90	ES	12.81	8.17	4.64
	1-Mar-91	ES	12.82	8.11	4.71
	28-May-91	ES	12.82	7.39	5.43
	1-Aug-91	ES	12.82	NA	NA
	27-Jan-92	PES	12.82	7.90	4.92
	28-Feb-92	PES	12.82	7.73	5.09
	28-May-92	PES	12.82	7.18	5.64
	27-Aug-92	PES	12.82	7.54	5.28
	10-Nov-92	PES	12.82	7.90	4.92
	18-Feb-93	PES	12.82	6.58	6.24
	20-May-93	PES	12.82	6.29	6.53
	19-Aug-93	PES	12.82	6.89	5.93
MW-5 Cont.	15-Nov-93	PES	12.82	7.43	5.39
	14-Feb-94	PES	12.82	7.16	5.66
	16-May-94	PES	12.82	6.50	6.32
	10-Aug-94	PES	12.82	6.98	5.84
	3-Nov-94	PES	12.82	7.36	5.46
	9-Feb-95	PES	12.82	5.68	7.14
	9-May-95	PES	12.82	5.36	7.46
	10-Aug-95	PES	12.82	6.29	6.53
	13-Nov-95	PES	12.82	6.89	5.93

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
	2-Mar-96	PES	12.82	7.26	5.56
	9-May-96	PES	12.82	6.00	6.82
	8-Aug-96	PES	12.82	6.67	6.15
	11-Nov-96	PES	12.82	6.69	6.13
	14-Feb-97	PES	12.82	5.88	6.94
	14-May-97	PES	12.82	6.25	6.57
	12-Aug-97	PES	12.82	6.77	6.05
	12-Nov-97	PES	12.82	7.21	5.61
	4-Feb-98	PES	12.82	6.81	6.01
	18-May-98	PES	12.82	4.81	8.01
	11-Aug-98	PES	12.82	6.38	6.44
	17-Dec-98	PES	12.82	7.00	5.82
	7-Oct-99	PES	12.82	7.23	5.59
	12-Oct-00	PES	12.82	7.30	5.52
MW-6	1-Mar-91	ES	12.03	8.59	3.44
	28-May-91	ES	12.03	8.35	3.68
	1-Aug-91	ES	12.03	NA	NA
	27-Jan-92	PES	12.03	8.32	3.71
	28-Feb-92	PES	12.03	8.08	3.95
	28-May-92	PES	12.03	8.04	3.99
	27-Aug-92	PES	12.03	8.48	3.55
	10-Nov-92	PES	12.03	8.52	3.51
	18-Feb-93	PES	12.03	8.14	3.89
	20-May-93	PES	12.03	8.46	3.57
	19-Aug-93	PES	12.03	8.61	3.42
	15-Nov-93	PES	12.03	8.30	3.73
	14-Feb-94	PES	12.03	8.09	3.94
	16-May-94	PES	12.03	7.82	4.21
	10-Aug-94	PES	12.03	8.46	3.57
	3-Nov-94	PES	12.03	8.16	3.87
	9-Feb-95	PES	12.03	7.66	4.37
	9-May-95	PES	12.03	8.57	3.46
	10-Aug-95	PES	12.03	7.72	4.31
	13-Nov-95	PES	12.03	8.15	3.88
MW-6 Cont.	2-Mar-96	PES	12.03	8.02	4.01
	9-May-96	PES	12.03	7.64	4.39
	8-Aug-96	PES	12.03	7.53	4.50
	11-Nov-96	PES	12.03	8.45	3.58
	14-Feb-97	PES	12.03	7.58	4.45
	14-May-97	PES	12.03	8.62	3.41
	12-Aug-97	PES	12.03	7.62	4.41
	12-Nov-97	PES	12.03	8.56	3.47
	4-Feb-98	PES	12.03	6.56	5.47
	18-May-98	PES	12.03	7.29	4.74
	11-Aug-98	PES	12.03	7.25	4.78

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
	17-Dec-98	PES	12.03	8.42	3.61
	7-Oct-99	PES	12.03	7.62	4.41
	12-Oct-00	PES	12.03	8.05	3.98
MW-7	1-Mar-91	ES	12.9	7.51	5.39
	28-May-91	ES	12.9	7.07	5.83
	1-Aug-91	ES	12.9	NA	NA
	27-Jan-92	PES	12.9	7.28	5.62
	28-Feb-92	PES	12.9	7.04	5.86
	28-May-92	PES	12.9	6.81	6.09
	27-Aug-92	PES	12.9	7.12	5.78
	10-Nov-92	PES	12.9	7.80	5.10
	18-Feb-93	PES	12.9	6.54	6.36
	20-May-93	PES	12.9	6.17	6.73
	19-Aug-93	PES	12.9	6.60	6.30
	15-Nov-93	PES	12.9	6.89	6.01
	14-Feb-94	PES	12.9	6.50	6.40
	17-May-94	PES	12.9	6.07	6.83
	10-Aug-94	PES	12.9	6.34	6.56
	3-Nov-94	PES	12.9	6.18	6.72
	9-Feb-95	PES	12.9	5.57	7.33
	9-May-95	PES	12.9	5.15	7.75
	10-Aug-95	PES	12.9	5.72	7.18
	13-Nov-95	PES	12.9	5.98	6.92
	2-Mar-96	PES	12.9	6.02	6.88
	9-May-96	PES	12.9	6.11	6.79
	8-Aug-96	PES	12.9	6.87	6.03
	11-Nov-96	PES	12.9	6.39	6.51
	14-Feb-97	PES	12.9	5.97	6.93
	14-May-97	PES	12.9	5.89	7.01
	12-Aug-97	PES	12.9	6.56	6.34
	12-Nov-97	PES	12.9	6.76	6.14
	4-Feb-98	PES	12.9	5.94	6.96
MW-7	18-May-98	PES	12.9	4.19	8.71
Cont.	11-Aug-98	PES	12.9	6.21	6.69
	17-Dec-98	PES	12.9	6.80	6.10
	7-Oct-99	PES	12.9	NM	NM
	12-Oct-00	PES	12.9	7.18	5.72
MW-8	3-Nov-94	PES	15.01	11.06	3.95
	9-Feb-95	PES	15.01	10.23	4.78
	9-Feb-95	PES	15.01	10.48	4.53
	10-Aug-95	PES	15.01	10.74	4.27
	13-Nov-95	PES	15.01	11.02	3.99
	2-Mar-96	PES	15.01	10.11	4.90
	9-May-96	PES	15.01	10.50	4.51
	8-Aug-96	PES	15.01	10.04	4.97

Table 1. Summary of Groundwater Elevations Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Measured by	Top of Casing (feet MSL)	Depth to Water (feet)	Groundwater Elevations (feet MSL)
	11-Nov-96	PES	15.01	10.55	4.46
	14-Feb-97	PES	15.01	9.95	5.06
	14-May-97	PES	15.01	10.08	4.93
	12-Aug-97	PES	15.01	10.63	4.38
	12-Nov-97	PES	15.01	10.13	4.88
	4-Feb-98	PES	15.01	10.17	4.84
	18-May-98	PES	15.01	9.49	5.52
	11-Aug-98	PES	15.01	10.57	4.44
	17-Dec-98	PES	15.01	10.52	4.49
	7-Oct-99	PES	15.01	NM	NM
	12-Oct-00	PES	15.01	10.15	4.86

NOTES:

Ft MSL = feet above Mean Sea Level

ES = Engineering-Science, Inc.

PES = PES Environmental, Inc.

BLAINE = Blaine Tech Services, Inc.

NA = Information not available at this date.

NM = Well was inaccessible due to parked cars

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-2	Nov-89	ES	100	NA	NA	8.4	7.4	2.4	13	0.015 *	0.05
	Feb-90	ES	54	NA	NA	7.8	5.6	1.6	8.4	0.032 *	0.021
	May-90	ES	40	NA	NA	7.8	7.5	1.6	7.6	0.076 *	0.025
	Aug-90	ES	49	4.6	NA	9	8	ND	8.9	0.040 *	0.0059
	Nov-90	ES	73	3.5	NA	6.9	5.9	1.4	7.4	NA	NA
	Mar-91	ES	72	1.8	NA	5.5	6.6	1	7.7	NA	NA
	May-91	ES	31	ND	NA	8.4	4.7	1.7	6.3	NA	NA
	Aug-91	ES	47	ND	NA	7.6	1.6	7.3	7.8	NA	NA
	29-Jan-92	PES	77.000	NA	NA	10.000	8.700	2.000	7.600	NA	NA
	28-Feb-92	PES	70.000	NA	NA	9.100	6.400	0.530	7.400	NA	NA
	28-May-92	PES	54.000	NA	NA	8.000	4.800	2.400	6.200	NA	NA
	27-Aug-92	PES	47.000	NA	NA	2.700	2.900	3.400	9.200	NA	NA
	10-Nov-92	PES	45.000	<20	NA	6.600	4.000	2.000	5.800	<0.050	NA
	18-Feb-93	PES	14.000	NA	NA	2.300	0.810	0.670	1.400	NA	NA
	20-May-93	PES	43.000	NA	NA	7.300	5.200	1.500	5.500	NA	NA
	19-Aug-93	PES	45.000	NA	NA	4.900	3.700	1.300	3.400	NA	NA
	15-Nov-93	PES	97.000	NA	NA	6.100	1.700	1.700	4.100	NA	NA
	14-Feb-94	PES	27.000	NA	NA	5.000	0.830	1.200	3.100	NA	NA
	16-May-94	PES	77.000	NA	NA	6.800	1.100	1.400	3.300	NA	NA
	10-Aug-94	PES	25	NA	NA	5.600	0.750	1.400	1.700	NA	NA
	3-Nov-94	PES	24	NA	NA	7.200	0.500	1.500	1.600	NA	NA
	9-Feb-95	PES	12	NA	NA	2.200	0.100	0.480	0.940	NA	NA
	9-May-95	PES	7.8	NA	NA	1.300	0.078	0.340	0.480	NA	NA
	10-Aug-95	PES	5.3	NA	NA	1.300	0.150	0.240	0.270	NA	NA
	13-Nov-95	PES	8.5	NA	NA	2.100	0.250	0.430	0.440	NA	NA
	13-Feb-96	PES	5.2	NA	NA	1.500	0.190	0.210	0.290	NA	NA
	9-May-96	PES	1.7	NA	NA	0.370	0.130	0.060	0.090	NA	NA
	8-Aug-96	PES	4.5	NA	NA	1.200	0.490	0.160	0.380	NA	NA
	11-Nov-96	PES	6.0	NA	NA	2.100	0.920	0.200	0.590	NA	NA
	14-Feb-97	PES	3.8	NA	NA	1.500	0.056	0.240	0.040	NA	NA
	14-May-97	PES	3.6	NA	NA	2.000	0.100	0.160	0.220	NA	NA
12-Aug-97	PES	7.3	NA	NA	3.200	0.330	0.290	0.420	NA	NA	
12-Nov-97	PES	8.9	NA	NA	3.000	1.300	0.330	0.750	NA	NA	
4-Feb-98	PES	7.6	NA	NA	2.800	0.190	0.410	0.150	NA	NA	
MW-2	18-May-98	PES	2.2	NA	NA	1.300	0.240	0.078	0.120	NA	NA
Cont.	11-Aug-98	PES	11	NA	NA	2.3	0.42	0.29	0.77	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
	17-Dec-98	PES	14	NA	<0.2	3.5	0.49	0.49	0.58	NA	NA
	7-Oct-99	PES	11	NA	<0.5	4.8	1.5	0.81	1.6	NA	NA
	7-Oct-00	PES	16	NA	<0.010	3.8	1.3	0.73	1.8	NA	NA
MW-3	Nov-89	ES	0.13	NA	NA	0.0022	ND	ND	0.003	ND	ND
	Feb-90	ES	ND	NA	NA	0.0025	ND	ND	ND	NA	0.011
	May-90	ES	ND	ND	NA	0.002	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.8	NA	0.0044	0.0029	ND	0.0054	NA	NA
	Nov-90	ES	0.9	0.8	NA	0.0034	ND	ND	ND	NA	NA
	Mar-91	ES	ND	ND	NA	0.025	0.025	0.0053	0.32	NA	NA
	May-91	ES	ND	ND	NA	0.0026	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	NA	0.0019	ND	ND	ND	NA	NA
	29-Jan-92	PES	0.092	NA	NA	0.0024	<0.0003	0.0006	<0.0003	NA	NA
	28-Feb-92	PES	0.160***	NA	NA	0.0028	<0.0003	0.0007	0.0005	NA	NA
	28-May-92	PES	<0.050	NA	NA	0.0025	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.370	NA	NA	0.0040	<0.001	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	0.240	<0.100	NA	0.0042	<0.0003	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.140	NA	NA	0.0018	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	0.072	NA	NA	0.0031	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	NA	0.0032	<0.0005	<0.0005	0.0007	NA	NA
	15-Nov-93	PES	0.070	NA	NA	0.0023	0.0007	<0.0005	0.0015	NA	NA
	14-Feb-94	PES	0.120	NA	NA	0.0053	0.0023	0.0012	0.0042	NA	NA
	16-May-94	PES	0.120	NA	NA	0.0031	<0.0005	<0.0005	0.0017	NA	NA
	10-Aug-94	PES	0.1	NA	NA	0.003	<0.0005	0.0005	<0.002	NA	NA
3-Nov-94	PES	0.1	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA	
9-Feb-95	PES	0.1	NA	NA	0.002	<0.0005	<0.0005	<0.002	NA	NA	
9-May-95	PES	0.1	NA	NA	0.003	<0.0005	0.0005	<0.002	NA	NA	
10-Aug-95	PES	0.1	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA	
13-Nov-95	PES	<0.05	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA	

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-4	Nov-89	ES	0.2	NA	NA	0.0023	ND	ND	ND	ND	ND
	Feb-90	ES	ND	NA	NA	ND	ND	ND	ND	NA	0.006
	May-90	ES	ND	ND	NA	0.001	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.8	NA	0.0089	0.0071	ND	0.0094	NA	NA
	Nov-90	ES	ND	0.7	NA	0.0027	ND	ND	ND	NA	NA
	Mar-91	ES	NA	ND	NA	0.003	ND	ND	ND	NA	NA
	May-91	ES	NA	ND	NA	0.0024	ND	ND	ND	NA	NA
	Aug-91	ES	NA	ND	NA	0.0015	ND	ND	ND	NA	NA
	29-Jan-92	PES	<0.050	NA	NA	0.0022	0.0004	<0.0003	0.0007	NA	NA
	28-Feb-92	PES	<0.050	NA	NA	0.0016	<0.0003	<0.0003	0.0003	NA	NA
	28-May-92	PES	<0.050	NA	NA	0.0015	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.080	NA	NA	0.003	<0.001	<0.0005	0.0005	NA	NA
	10-Nov-92	PES	0.180	<0.100	NA	0.060	0.0009	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.060	NA	NA	0.0017	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.050	NA	NA	0.0022	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	NA	0.0020	0.0006	<0.0005	0.0005	NA	NA
	15-Nov-93	PES	<0.050	NA	NA	0.0020	0.0005	<0.0005	0.0009	NA	NA
	14-Feb-94	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	16-May-94	PES	<0.050	NA	NA	0.0017	0.0009	<0.0005	0.0011	NA	NA
	10-Aug-94	PES	<0.05	NA	NA	0.002	<0.0005	<0.0005	<0.002	NA	NA
	3-Nov-94	PES	0.06	NA	NA	0.002	<0.0005	<0.0005	<0.002	NA	NA
	9-Feb-95	PES	0.06	NA	NA	0.002	0.0006	<0.0005	<0.002	NA	NA
	9-May-95	PES	0.07	NA	NA	0.001	<0.0005	<0.0005	<0.002	NA	NA
	10-Aug-95	PES	<0.05	NA	NA	0.001	<0.0005	<0.0005	<0.002	NA	NA
	13-Nov-95	PES	<0.05	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA
	13-Feb-96	PES	<0.05	NA	NA	0.0013	<0.0005	<0.0005	<0.002	NA	NA
	9-May-96	PES	<0.05	NA	NA	0.0009	<0.0005	<0.0005	<0.002	NA	NA
	8-Aug-96	PES	<0.05	NA	NA	0.0009	<0.0005	<0.0005	<0.002	NA	NA
	11-Nov-96	PES	<0.05	NA	NA	0.0013	0.0006	<0.0005	<0.002	NA	NA
	14-Feb-97	PES	<0.05	NA	NA	0.0006	<0.0005	<0.0005	<0.002	NA	NA
14-May-97	PES	<0.05	NA	NA	0.0009	<0.0005	<0.0005	<0.002	NA	NA	
12-Aug-97	PES	<0.05	NA	NA	0.0009	<0.0005	<0.0005	<0.002	NA	NA	
12-Nov-97	PES	<0.05	NA	NA	0.0013	<0.0005	<0.0005	<0.002	NA	NA	
4-Feb-98	PES	0.05	NA	NA	0.0019	0.0018	0.0011	0.004	NA	NA	
MW-4	18-May-98	PES	<0.05	NA	NA	0.00091	<0.0005	<0.0005	0.0011	NA	NA
Cont.	11-Aug-98	PES	<0.05	NA	NA	0.00063	<0.0005	<0.0005	<0.0005	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
	17-Dec-98	PES	<0.1	NA	<0.01	<0.001	<0.001	<0.001	<0.001	NA	NA
	7-Oct-99	PES	<0.05	NA	<0.005	0.0015	<0.0005	<0.0005	<0.0005	NA	NA
	7-Oct-00	PES	<0.05	NA	<0.0005	0.0013	<0.0005	<0.0005	<0.0005	NA	NA
MW-5	Nov-89	ES	ND	NA	NA	0.074	ND	ND	0.0042	ND	ND
	Feb-90	ES	ND	NA	NA	0.2	ND	ND	ND	NA	0.012
	May-90	ES	ND	ND	NA	0.11	ND	ND	ND	ND	NA
	Aug-90	ES	ND	0.7	NA	0.066	0.0022	ND	0.0038	NA	NA
	Nov-90	ES	0.6	0.9	NA	0.069	ND	ND	ND	NA	NA
	Mar-91	ES	ND	1.1	NA	0.066	0.0023	ND	ND	NA	NA
	May-91	ES	ND	ND	NA	0.11	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	NA	0.078	0.0021	ND	ND	NA	NA
	29-Jan-92	PES	0.190	NA	NA	0.090	0.0005	<0.0003	0.0006	NA	NA
	28-Feb-92	PES	0.230***	NA	NA	0.110	0.0009	<0.0003	0.0005	NA	NA
	28-May-92	PES	0.130	NA	NA	0.100	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.520	NA	NA	0.083	0.002	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	0.240	<0.100	NA	0.074	0.0010	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	0.190	NA	NA	0.056	0.0006	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.200	NA	NA	0.056	<0.002	<0.002	<0.002	NA	NA
	19-Aug-93	PES	0.170	NA	NA	0.050	0.0007	<0.0005	<0.0005	NA	NA
	15-Nov-93	PES	0.220	NA	NA	0.049	0.001	<0.001	<0.001	NA	NA
	14-Feb-94	PES	0.140	NA	NA	0.062	<0.0005	<0.0005	<0.0005	NA	NA
	16-May-94	PES	0.310	NA	NA	0.140	0.003	<0.003	<0.003	NA	NA
	12-Aug-94	PES	0.5	NA	NA	0.095	0.034	0.004	0.014	NA	NA
3-Nov-94	PES	0.4	NA	NA	0.079	0.0006	<0.0005	<0.002	NA	NA	
9-Feb-95	PES	0.3	NA	NA	0.074	0.0008	<0.0005	<0.0002	NA	NA	
9-May-95	PES	0.2	NA	NA	0.047	0.0005	<0.0005	<0.002	NA	NA	
10-Aug-95	PES	0.2	NA	NA	0.046	0.0005	<0.0005	<0.002	NA	NA	
13-Nov-95	PES	0.3	NA	NA	0.048	0.0007	<0.0005	<0.002	NA	NA	

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
MW-6	May-90	ES	NA	ND	NA	ND	ND	ND	ND	ND	ND**
	Aug-90	ES	NA	ND	NA	NA	NA	NA	NA	NA	ND**
	Nov-90	ES	1.2	1.4	NA	0.0012	ND	ND	ND	0.0012	NA
	Mar-91	ES	ND	ND	NA	ND	ND	ND	ND	NA	NA
	May-91	ES	ND	ND	NA	ND	ND	ND	ND	NA	NA
	Aug-91	ES	ND	ND	NA	ND	ND	ND	ND	NA	NA
	29-Jan-92	PES	<0.050	NA	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
	28-Feb-92	PES	<0.050	NA	NA	<0.0003	<0.0003	<0.0003	<0.0003	NA	NA
	28-May-92	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	<0.050****	NA	NA	<0.0005	<0.001	<0.0005	<0.0005	NA	NA
	10-Nov-92	PES	<0.050	<0.100	NA	<0.0003	<0.0003	<0.0003	<0.0006	<0.0003	NA
	18-Feb-93	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	20-May-93	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	19-Aug-93	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	15-Nov-93	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	14-Feb-94	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	16-May-94	PES	<0.050	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	10-Aug-94	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	3-Nov-94	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	9-Feb-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
9-May-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA	
10-Aug-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA	
13-Nov-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA	
MW-7	May-90	ES	NA	0.6	NA	0.24	ND	ND	ND	0.24	ND**
	Aug-90	ES	ND	ND	NA	0.081	0.0018	ND	ND	0.0844	ND**
	Nov-90	ES	ND	0.8	NA	0.054	ND	ND	ND	0.054	NA
	Mar-91	ES	ND	ND	NA	0.1	0.0036	ND	ND	NA	NA
	May-91	ES	ND	ND	NA	0.12	0.0027	ND	ND	NA	NA
	Aug-91	ES	ND	ND	NA	0.074	0.0033	ND	ND	NA	NA
	29-Jan-92	PES	0.270	NA	NA	0.025	0.0005	<0.0003	0.0008	NA	NA
	28-Feb-92	PES	0.100***	NA	NA	0.033	0.0007	<0.0003	0.0007	NA	NA
	28-May-92	PES	0.150	NA	NA	0.021	<0.0005	<0.0005	<0.0005	NA	NA
	27-Aug-92	PES	0.440	NA	NA	0.011	0.001	<0.0005	<0.0005	NA	NA
MW-7	10-Nov-92	PES	0.370	<0.100	NA	0.031	0.0012	<0.0003	0.0012	<0.0003	NA
Cont.	18-Feb-93	PES	0.270	NA	NA	0.077	0.0013	<0.0005	0.0014	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
	20-May-93	PES	0.300	NA	NA	0.150	0.003	<0.002	0.003	NA	NA
	19-Aug-93	PES	0.110	NA	NA	0.040	0.0010	<0.0005	0.0011	NA	NA
	15-Nov-93	PES	0.120	NA	NA	0.015	0.0006	<0.0005	0.0023	NA	NA
	14-Feb-94	PES	0.120	NA	NA	0.038	<0.0005	<0.0005	<0.0005	NA	NA
	17-May-94	PES	<0.300	NA	NA	0.061	<0.003	<0.003	<0.003	NA	NA
	10-Aug-94	PES	0.1	NA	NA	0.009	<0.0005	<0.0005	<0.002	NA	NA
	3-Nov-94	PES	0.1	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA
	9-Feb-95	PES	0.2	NA	NA	0.050	0.0006	<0.0005	<0.002	NA	NA
	9-May-95	PES	0.3	NA	NA	0.120	0.001	<0.0005	<0.002	NA	NA
	10-Aug-95	PES	<0.05	NA	NA	0.007	<0.0005	<0.0005	<0.002	NA	NA
	13-Nov-95	PES	0.09	NA	NA	0.003	<0.0005	<0.0005	<0.002	NA	NA
MW-8	3-Nov-94	PES	<0.05	NA	NA	0.001	<0.0005	<0.0005	<0.002	NA	NA
	9-Feb-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	9-May-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	10-Aug-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	13-Nov-95	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	13-Feb-96	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	9-May-96	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	8-Aug-96	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	11-Nov-96	PES	<0.05	NA	NA	<0.0005	0.0009	<0.0005	<0.002	NA	NA
	14-Feb-97	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	14-May-97	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	12-Aug-97	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.002	NA	NA
	12-Nov-97	PES	<0.05	NA	NA	0.0033	0.0023	<0.0005	<0.002	NA	NA
	4-Feb-98	PES	<0.05	NA	NA	0.0011	<0.0005	<0.0005	<0.002	NA	NA
	18-May-98	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	11-Aug-98	PES	<0.05	NA	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	17-Dec-98	PES	<0.05	NA	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
	7-Oct-99	PES	NS	NS	NS	NS	NS	NS	NS	NA	NA
	12-Oct-00	PES	<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	NA	NA
EW-1	May-90	ES	20	ND	NA	7.5	4.5	1	6.3	0.068	ND**
	Aug-90	ES	NA	3.5	NA	6	4.2	ND	4.6	0.016 *	ND**
	Nov-90	ES	47	3.1	NA	6	3.4	1	4.7	NA	NA
	17-Dec-90	ES	NA	NA	NA	11	7.9	2.2	10	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Concentrations expressed in milligrams per liter (mg/l) - equivalent to parts per million (ppm)

Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
	19-Dec-90	ES	NA	NA	NA	3.7	2.5	ND	2.3	NA	NA
	21-Dec-90	ES	NA	NA	NA	3.2	2.2	ND	1.7	NA	NA
	27-Dec-90	ES	NA	NA	NA	2.9	2.1	0.16	1.5	NA	NA
	4-Jan-91	ES	NA	NA	NA	3.2	2.8	ND	ND	NA	NA
	11-Jan-91	ES	NA	NA	NA	3	2.4	0.2	1.8	NA	NA
	6-Feb-91	ES	NA	NA	NA	0.47	0.23	0.011	0.39	NA	NA
	13-Feb-91	ES	NA	NA	NA	1.2	0.28	ND	0.36	NA	NA
	15-Mar-91	ES	NA	NA	NA	0.13	0.085	0.006	0.17	NA	NA
	3-Jul-91	ES	NA	NA	NA	1.3	0.95	0.22	1.4	NA	NA
	1-Aug-91	ES	NA	NA	NA	0.22	0.19	0.013	0.27	NA	NA
	16-Aug-91	ES	NA	NA	NA	0.17	0.16	0.013	0.19	NA	NA
	13-Nov-91	ES	NA	NA	NA	3.1	0.27	0.04	0.22	NA	NA
	29-Jan-92	PES	2.700	NA	NA	0.570	0.150	0.0070	0.260	NA	NA
	26-Mar-92	PES	25.000	NA	NA	3.600	2.600	0.530	2.600	NA	NA
	28-May-92	PES	16.000	NA	NA	3.300	3.200	0.750	2.600	NA	NA
	29-Jun-92	PES	7.000	NA	NA	2.200	3.100	0.270	1.400	NA	NA
	21-Jul-92	PES	1.600	NA	NA	0.220	0.017	<0.0005	0.100	NA	NA
	27-Aug-92	PES	NS	NS	NA	NS	NS	NS	NS	NS	NS
	23-Sep-92	PES	5.200	NA	NA	1.100	0.590	0.100	1.000	NA	NA
	27-Oct-92	PES	1.300	NA	NA	0.220	0.061	0.0053	0.110	NA	NA
	24-Nov-92	PES	7.100	NA	NA	1.400	1.100	0.120	0.890	NA	NA
	18-Feb-93	PES	7.200	NA	NA	1.400	0.930	0.210	1.000	NA	NA
	09-Mar-93	PES	4.600	NA	NA	0.990	0.750	0.062	0.840	NA	NA
	21-Apr-93	PES	4.900	NA	NA	0.270	0.180	0.020	0.190	NA	NA
	13-May-93	PES	2.600	NA	NA	0.520	0.110	0.023	0.330	NA	NA
	28-Jun-93	PES	9.500	NA	NA	1.900	0.460	0.230	1.000	NA	NA
	11-Aug-93	PES	1.300	NA	NA	<0.002	<0.002	<0.002	0.400	NA	NA
	15-Nov-93	PES	46.000	NA	NA	2.900	0.380	0.500	1.700	NA	NA
	14-Feb-94	PES	21.000	NA	NA	4.500	0.860	1.000	2.800	NA	NA
	16-May-94	PES	19.000	NA	NA	7.300	0.930	1.300	3.300	NA	NA
EW-1 Cont.	10-Aug-94	PES	19	NA	NA	4.200	0.490	1.100	1.500	NA	NA
	3-Nov-94	PES	20	NA	NA	6.000	0.230	1.400	1.400	NA	NA
	9-Feb-95	PES	8.7	NA	NA	1.800	0.110	0.380	0.740	NA	NA
	9-May-95	PES	6.6	NA	NA	1.100	0.051	0.270	0.380	NA	NA
	10-Aug-95	PES	2.6	NA	NA	0.410	0.016	0.110	0.097	NA	NA
	13-Nov-95	PES	14	NA	NA	2.900	0.110	0.550	0.440	NA	NA
	13-Feb-96	PES	3.7	NA	NA	1.000	0.220	0.170	0.280	NA	NA

Table 2. Summary of Analytical Results for Groundwater Samples Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

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Well Number	Sample Date	Sampled by	TPH as Gasoline	TPH as Diesel	MTBE	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	Purgeable Halocarbons	Lead
						MCL = 0.001	DAL = 0.1	MCL = 0.68	MCL = 1.75		MCL = 0.005
	9-May-96	PES	0.97	NA	NA	0.230	0.050	0.039	0.047	NA	NA
	8-Aug-96	PES	0.74	NA	NA	0.200	0.063	0.025	0.049	NA	NA
	11-Nov-96	PES	0.64	NA	NA	0.340	0.110	0.034	0.090	NA	NA
	14-Feb-97	PES	4.20	NA	NA	1.600	0.043	0.260	0.040	NA	NA
	14-May-97	PES	2.2	NA	NA	0.940	0.011	0.064	0.068	NA	NA
	12-Aug-97	PES	3.2	NA	NA	1.400	0.028	0.086	0.110	NA	NA
	12-Nov-97	PES	2.0	NA	NA	0.790	0.045	0.028	0.090	NA	NA
	4-Feb-98	PES	7.2	NA	NA	2.600	0.190	0.310	0.140	NA	NA
	18-May-98	PES	1.5	NA	NA	0.820	0.019	0.071	0.067	NA	NA
	11-Aug-98	PES	5.1	NA	NA	1.2	0.0065	0.075	0.21	NA	NA
	17-Dec-98	PES	5.9	NA	0.04	2.2	0.16	0.0035	0.31	NA	NA
	7-Oct-99	PES	11	NA	<0.5	3.1	0.098	0.49	0.89	NA	NA
	12-Oct-00	PES	7.7	NA	<0.010	3.0	0.056	0.38	0.20	NA	NA

NOTES:

* = 1,2-Dichlorethane concentration (only 1,2-Dichloroethane detected).

** = Organic Lead

*** = TPH quantified as gasoline but chromatogram pattern was not typical of gasoline.

ES = Engineering-Science, Inc.

PES = PES Environmental, Inc.

BLAINE = Blaine Tech Services, Inc.

NA = Not analyzed

ND = Not detected above method detection limit.

NS = Not sampled.

<0.0005 = Not detected above indicated laboratory reporting limit.

MCL = California Maximum Contaminant level, current as of January 1991.

DAL = Department of Health Services Action Levels, current as of January 1991.

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tert butyl ether

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
MW-2	10-Aug-94	10:52	PES	<0.1	
	3-Nov-94	12:03	Blaine	0.2	
	29-Dec-94	9:56	PES	1.9	(1)
	29-Dec-94	17:05	PES	>20	(2)
	9-Feb-95	14:31	Blaine	0.9	
	16-Mar-95	9:45	PES	0.07	(1)
	16-Mar-95	16:05	PES	>20	(2)
	21-Mar-95	9:35	PES	0.025	
	23-Mar-95	9:45	PES	0.14	
	28-Mar-95	9:50	PES	0.12	
	6-Apr-95	11:12	Blaine	0.1	
	9-May-95	11:25	Blaine	1.3	
	20-Jun-95	10:35	PES	0	(1)
	20-Jun-95	15:23	PES	>20	(2)
	26-Jun-95	19:50	PES	0.12	
	28-Jun-95	19:47	PES	0.12	
	1-Jul-95	19:45	PES	0.45	
	3-Jul-95	19:35	PES	0.06	
	10-Aug-95	13:11	Blaine	0.7	
	20-Sep-95	9:55	PES	0.8	(1)
	23-Sep-95	13:25	PES	1.6	
	25-Sep-95	8:20	PES	2.0	
	28-Sep-95	9:51	PES	1.1	
	13-Nov-95	11:10	Blaine	0.4	
	11-Jan-96	10:47	PES	1.4	(1)
	14-Jan-96	17:27	PES	>15	
	17-Jan-96	8:03	PES	8.2	
	19-Jan-96	9:31	PES	4.8	
	21-Jan-96	18:10	PES	2.6	
	25-Jan-96	20:13	PES	1.8	
	13-Feb-96	11:43	Blaine	0.4	
	11-Apr-96	10:12	PES	0.1	(1)
	15-Apr-96	8:48	PES	>15	
	9-May-96	11:22	Blaine	0.6	
	8-Aug-96	10:41	Blaine	0.7	
	23-Oct-96	8:00	PES	0.3	(1)
	11-Nov-96	9:57	Blaine	0.6	
	14-Feb-97	9:43	Blaine	0.8	
	19-Feb-97	9:15	PES	0.4	(1)
	4-Apr-97	8:20	PES	0.6	(1)
	14-May-97	10:14	Blaine	6.1	
	26-Jun-97	8:43	PES	0.3	(1)
	12-Aug-97	11:35	Blaine	0.3	
	10-Oct-97	9:30	PES	0.4	(1)
	12-Nov-97	10:31	Blaine	0.5	
	4-Feb-98	9:59	Blaine	0.8	

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
MW-2 Cont.	13-Mar-98	8:40	PES	0.2	(1)
	9-Apr-98	9:30	PES	0.4	(1)
	18-May-98	9:16	Blaine	0.5	
	9-Jul-98	9:05	PES	1.0	(1)
	11-Aug-98	9:58	Blaine	1.0	
	17-Dec-98	9:50	Blaine	1.2	
	7-Oct-99	10:25	Blaine	1.2	
	12-Oct-00	10:18	Blaine	0.3	
MW-3	10-Aug-94	10:14	PES	<0.1	
	3-Nov-94	10:03	Blaine	0.2	
	29-Dec-94	9:09	PES	2.1	(1)
	9-Feb-95	12:05	Blaine	0.8	
	16-Mar-95	15:45	PES	0.06	(1)
	21-Mar-95	10:05	PES	0.11	
	23-Mar-95	10:04	PES	0.14	
	28-Mar-95	10:05	PES	*	
	6-Apr-95	11:30	Blaine	0.05	
	9-May-95	9:48	Blaine	0.9	
	20-Jun-95	10:12	PES	0.01	(1)
	20-Jun-95	14:53	PES	0.01	(2)
	26-Jun-95	20:34	PES	0	
	10-Aug-95	11:19	Blaine	1.1	
	20-Sep-95	14:41	PES	0.6	(1)
	13-Nov-95	9:54	Blaine	0.4	
	11-Jan-96	13:12	PES	1.6	(1)
	13-Feb-96	NM	NM	NM	
	11-Apr-96	15:00	PES	0.2	(1)
	9-May-96	NM	NM	NM	
	8-Aug-96	NM	NM	NM	
	23-Oct-96	12:05	PES	0.4	(1)
	11-Nov-96	NM	NM	NM	
	14-Feb-97	NM	NM	NM	
	19-Feb-97	10:15	PES	0.4	(1)
	4-Apr-97	11:00	PES	0.4	(1)
	14-May-97	NM	NM	NM	
	26-Jun-97	12:15	PES	0.5	(1)
	12-Aug-97	NM	NM	NM	
	10-Oct-97	12:30	PES	0.4	(1)
	12-Nov-97	NA	Blaine	0.8	
	4-Feb-98	NA	Blaine	1.0	
13-Mar-98	11:45	PES	0.2	(1)	
9-Apr-98	10:38	PES	0.2	(1)	
18-May-98	NA	NM	NM		
9-Jul-98	13:05	PES	0.5	(1)	
11-Aug-98	NA	NM	NM		
17-Dec-98	NA	NM	NM		

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
MW-3	7-Oct-99	NA	NM	NM	
Cont.	12-Oct-00	NA	NM	NM	
MW-4	10-Aug-94	10:08	PES	0.1	
	3-Nov-94	9:24	Blaine	0.1	
	29-Dec-94	10:06	PES	2	(1)
	9-Feb-95	11:41	Blaine	0.6	
	16-Mar-95	15:30	PES	0.07	(1)
	9-May-95	9:37	Blaine	1.7	
	20-Jun-95	10:20	PES	0	(1)
	20-Jun-95	15:01	PES	0	(2)
	3-Jul-95	19:40	PES	0.07	
	10-Aug-95	11:00	Blaine	0.7	
	20-Sep-95	14:20	PES	0.6	(1)
	13-Nov-95	9:37	Blaine	0.6	
	11-Jan-96	13:25	PES	1.0	(1)
	13-Feb-96	10:47	Blaine	0.4	
	11-Apr-96	10:35	PES	0.1	(1)
	9-May-96	10:55	Blaine	0.7	
	8-Aug-96	9:58	Blaine	0.8	
	23-Oct-96	9:10	PES	0.3	(1)
	11-Nov-96	9:01	Blaine	0.6	
	14-Feb-97	9:02	Blaine	0.8	
	19-Feb-97	9:50	PES	0.2	(1)
	4-Apr-97	8:47	PES	0.5	(1)
	14-May-97	9:31	Blaine	5.4	
	26-Jun-97	11:17	PES	0.4	(1)
	12-Aug-97	10:47	Blaine	0.6	
	10-Oct-97	10:20	PES	0.4	(1)
	12-Nov-97	9:12	Blaine	0.6	
	4-Feb-98	8:45	Blaine	1.0	
	13-Mar-98	11:15	PES	0.8	(1)
	9-Apr-98	11:40	PES	0.3	(1)
	18-May-98	8:31	Blaine	0.6	
	9-Jul-98	13:10	PES	0.3	(1)
	11-Aug-98	9:00	Blaine	1.1	
	17-Dec-98	8:40	Blaine	1.6	
	7-Oct-99	9:43	Blaine	1.7	
	12-Oct-00	8:44	Blaine	0.4	
MW-5	10-Aug-94	10:32	PES	0.1-0.2	
	3-Nov-94	10:47	Blaine	0.4	
	29-Dec-94	9:18	PES	2.1	(1)
	9-Feb-95	12:48	Blaine	1.0	
	9-May-95	10:25	Blaine	1.8	
	20-Jun-95	10:05	PES	0	(1)
	20-Jun-95	14:43	PES	0.03	(2)
MW-5	28-Jun-95	20:10	PES	0.02	
Cont.	10-Aug-95	12:10	Blaine	0.8	
	20-Sep-95	14:55	PES	0.7	(1)

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
	13-Nov-95	10:28	Blaine	0.5	
	11-Jan-96	11:29	PES	1.5	(1)
	13-Feb-96	NM	NM	NM	
	11-Apr-96	10:50	PES	0.15	(1)
	9-May-96	NM	NM	NM	
	8-Aug-96	NM	NM	NM	
	23-Oct-96	11:25	PES	0.4	(1)
	11-Nov-96	NM	NM	NM	
	14-Feb-97	NM	NM	NM	
	19-Feb-97	10:40	PES	0.4	(1)
	4-Apr-97	10:50	PES	0.5	(1)
	14-May-97	NM	NM	NM	
	26-Jun-97	7:58	PES	0.5	(1)
	12-Aug-97	NM	NM	NM	
	10-Oct-97	NM	NM	NM	
	12-Nov-97	NA	Blaine	0.5	
	4-Feb-98	NA	Blaine	0.9	
	13-Mar-98	NM	NM	NM	
	9-Apr-98	10:40	PES	0.1	(1)
	18-May-98	NA	NM	NM	
	9-Jul-98	12:55	PES	0.2	(1)
	11-Aug-98	NA	NM	NM	
	17-Dec-98	NA	NM	NM	
	7-Oct-99	NA	NM	NM	
	12-Oct-00	NA	NM	NM	
MW-6	10-Aug-94	10:03	PES	<0.1	
	3-Nov-94	9:42	Blaine	0.4	
	29-Dec-94	9:03	PES	2.2	(1)
	9-Feb-95	11:18	Blaine	1.0	
	16-Mar-95	15:15	PES	0.1	(1)
	21-Mar-95	9:50	PES	0.1	
	9-May-95	9:17	Blaine	1.2	
	20-Jun-95	10:23	PES	0.01	(1)
	20-Jun-95	15:10	PES	0	(2)
	26-Jun-95	19:40	PES	0.20	
	28-Jun-95	19:33	PES	0.22	
	1-Jul-95	19:40	PES	0.81	
	3-Jul-95	19:10	PES	0.56	
	10-Aug-95	10:40	Blaine	1.2	
	20-Sep-95	14:30	PES	0.8	(1)
	23-Sep-95	13:30	PES	1.2	
	25-Sep-95	8:30	PES	0.9	
	28-Sep-95	10:10	PES	1.0	
MW-6	13-Nov-95	9:13	Blaine	0.8	
Cont.	11-Jan-96	10:12	PES	2.4	(1)
	14-Jan-96	17:40	PES	2.4	
	17-Jan-96	8:25	PES	2.2	
	19-Jan-96	9:40	PES	2.2	

Table 3. Summary of Total Dissolved Oxygen Through October 2000

Emery Bay Plaza
1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
	21-Jan-96	18:32	PES	2.0	
	25-Jan-96	20:28	PES	1.8	
	13-Feb-96	NM	NM	NM	
	11-Apr-96	10:25	PES	0.1	(1)
	9-May-96	NM	NM	NM	
	8-Aug-96	NM	NM	NM	
	23-Oct-96	8:50	PES	0.4	(1)
	11-Nov-96	NM	NM	NM	
	14-Feb-97	NM	NM	NM	
	19-Feb-97	9:40	PES	0.6	(1)
	4-Apr-97	8:35	PES	0.6	(1)
	14-May-97	NM	NM	NM	
	26-Jun-97	11:00	PES	0.4	(1)
	12-Aug-97	NM	NM	NM	
	10-Oct-97	10:05	PES	0.6	(1)
	12-Nov-97	NA	Blaine	1.5	
	4-Feb-98	NA	Blaine	1.2	
	13-Mar-98	10:00	PES	0.5	(1)
	9-Apr-98	11:58	PES	0.4	(1)
	18-May-98	NA	NM	NM	
	9-Jul-98	13:15	PES	0.3	(1)
	11-Aug-98	NA	NM	NM	
	17-Dec-98	NA	NM	NM	
	7-Oct-99	NA	NM	NM	
	12-Oct-00	NA	NM	NM	
MW-7	10-Aug-94	10:37	PES	<0.1	
	3-Nov-94	10:25	Blaine	0.3	
	29-Dec-94	9:33	PES	2.2	(1)
	9-Feb-95	12:26	Blaine	0.8	
	16-Mar-95	16:00	PES	0.06	(1)
	9-May-95	10:08	Blaine	1.1	
	3-Jul-95	19:30	PES	0.19	
	10-Aug-95	11:47	Blaine	0.9	
	20-Sep-95	10:45	PES	1.0	(1)
	11-Jan-96	11:18	PES	1.4	(1)
	13-Nov-95	10:13	Blaine	0.6	
	13-Feb-96	NM	NM	NM	
	9-May-96	NM	NM	NM	
	8-Aug-96	NM	NM	NM	
	23-Oct-96	11:15	PES	0.5	(1)
	11-Nov-96	NM	NM	NM	
MW-7 Cont.	14-Feb-97	NM	NM	NM	
	19-Feb-97	10:30	PES	0.5	(1)
	14-May-97	NM	NM	NM	
	26-Jun-97	7:47	PES	0.5	(1)
	12-Aug-97	NM	NM	NM	
	10-Oct-97	NM	NM	NM	
	12-Nov-97	NA	Blaine	0.5	

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
	4-Feb-98	NA	Blaine	0.7	
	13-Mar-98	NM	NM	NM	
	9-Apr-98	10:20	PES	0.9	(1)
	18-May-98	NA	NM	NM	
	9-Jul-98	12:50	PES	0.15	(1)
	11-Aug-98	NA	NM	NM	
	17-Dec-98	NA	NM	NM	
	7-Oct-99	NA	NM	NM	
	12-Oct-00	NA	NM	NM	
MW-8	10-Aug-94	NM	PES	NM	
	3-Nov-94	11:20	Blaine	0.3	
	29-Dec-94	9:40	PES	2.1	(1)
	29-Dec-94	17:10	PES	>20	(2)
	9-Feb-95	13:40	Blaine	0.8	
	16-Mar-95	9:20	PES	0.5	(1)
	16-Mar-95	16:10	PES	>20	(2)
	21-Mar-95	9:00	PES	>20	
	23-Mar-95	9:05	PES	4.1	
	28-Mar-95	9:10	PES	>20	
	6-Apr-95	10:45	Blaine	>15	
	9-May-95	10:52	Blaine	6	
	20-Jun-95	10:00	PES	0.32	(1)
	20-Jun-95	14:33	PES	>20	(2)
	26-Jun-95	20:15	PES	>20	
	28-Jun-95	19:59	PES	>20	
	1-Jul-95	20:05	PES	>20	
	3-Jul-95	19:20	PES	>20	
	10-Aug-95	12:32	Blaine	1.0	
	20-Sep-95	10:30	PES	1.0	(1)
	23-Sep-95	13:10	PES	>15	
	25-Sep-95	8:01	PES	>15	
	28-Sep-95	9:30	PES	>15	
	13-Nov-95	10:49	Blaine	0.4	
	11-Jan-96	9:56	PES	5.0	(1)
	14-Jan-96	17:03	PES	>15	
	17-Jan-96	7:43	PES	>15	
	19-Jan-96	9:12	PES	>15	
	21-Jan-96	17:58	PES	>15	
	25-Jan-96	20:03	PES	4.0	
MW-8	13-Feb-96	11:17	Blaine	>15	
Cont.	11-Apr-96	9:10	PES	6.2	(1)
	15-Apr-96	8:35	PES	>15	
	9-May-96	12:51	Blaine	0.5	
	8-Aug-96	10:14	Blaine	0.7	
	23-Oct-96	7:45	PES	0.4	(1)
	11-Nov-96	10:31	Blaine	1.8	
	14-Feb-97	10:06	Blaine	1.0	
	19-Feb-97	9:00	PES	3.0	(1)

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
	4-Apr-97	8:00	PES	>15	(1)
	14-May-97	10:49	Blaine	6.9	
	26-Jun-97	8:11	PES	0.6	(1)
	12-Aug-97	11:12	Blaine	0.6	
	10-Oct-97	9:10	PES	3.0	(1)
	12-Nov-97	9:38	Blaine	1.2	
	4-Feb-98	9:10	Blaine	0.7	
	13-Mar-98	8:45	PES	1.4	(1)
	9-Apr-98	8:30	PES	0.2	(1)
	18-May-98	8:51	Blaine	0.9	
	9-Jul-98	9:15	PES	0.6	(1)
	11-Aug-98	9:25	Blaine	0.9	
	17-Dec-98	9:05	Blaine	1.3	
	7-Oct-99	NM	NM	NM	
	12-Oct-00	9:20	Blaine	0.4	
EW-1	10-Aug-94	10:57	PES	<0.1	
	3-Nov-94	11:50	Blaine	0.3	
	29-Dec-94	9:52	PES	2	(1)
	29-Dec-94	17:00	PES	>20	(2)
	9-Feb-95	14:11	Blaine	1.0	
	16-Mar-95	10:00	PES	0.1	(1)
	16-Mar-95	16:00	PES	>20	(2)
	21-Mar-95	9:20	PES	>20	
	23-Mar-95	9:30	PES	>20	
	28-Mar-95	9:40	PES	0.2	
	6-Apr-95	11:05	Blaine	0.18	
	9-May-95	11:19	Blaine	1.6	
	20-Jun-95	10:30	PES	0.01	(1)
	20-Jun-95	15:17	PES	>20	(2)
	26-Jun-95	20:00	PES	>20	
	28-Jun-95	19:40	PES	>20	
	1-Jul-95	19:50	PES	5.68	
	3-Jul-95	19:38	PES	0.26	
	10-Aug-95	12:50	Blaine	0.6	
	20-Sep-95	9:45	PES	1.1	(1)
	23-Sep-95	13:20	PES	>15	
	25-Sep-95	8:15	PES	>15	
EW-1 Cont.	28-Sep-95	9:43	PES	>15	
	13-Nov-95	11:26	Blaine	0.5	
	11-Jan-96	10:25	PES	1.8	(1)
	14-Jan-96	17:21	PES	>15	
	17-Jan-96	8:10	PES	14.2	
	19-Jan-96	9:25	PES	8.2	
	21-Jan-96	18:18	PES	4.0	
	25-Jan-96	20:17	PES	2.0	
	13-Feb-96	12:04	Blaine	0.3	
	11-Apr-96	10:00	PES	0.2	(1)
	15-Apr-96	8:44	PES	>15	

Table 3. Summary of Total Dissolved Oxygen Through October 2000
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Number	Date	Time of Day	Measured by	Total Dissolved Oxygen (mg/L)	Notes
	9-May-96	11:41	Blaine	0.5	
	8-Aug-96	11:13	Blaine	0.6	
	23-Oct-96	8:15	PES	0.3	(1)
	11-Nov-96	9:35	Blaine	0.7	
	14-Feb-97	9:24	Blaine	0.9	
	19-Feb-97	9:30	PES	0.4	(1)
	4-Apr-97	8:10	PES	0.6	(1)
	14-May-97	9:54	Blaine	5.8	
	26-Jun-97	8:30	PES	0.4	(1)
	12-Aug-97	11:26	Blaine	0.4	
	10-Oct-97	9:45	PES	0.4	(1)
	12-Nov-97	10:03	Blaine	0.9	
	4-Feb-98	9:38	Blaine	1.1	
	13-Mar-98	8:34	PES	0.4	(1)
	9-Apr-98	8:45	PES	0.1	(1)
	18-May-98	9:38	Blaine	1.0	
	9-Jul-98	8:50	PES	1.3	
	11-Aug-98	10:25	Blaine	1.3	
	17-Dec-98	9:25	Blaine	1.1	
	7-Oct-99	10:01	Blaine	1.3	
	12-Oct-00	9:53	Blaine	0.3	

NOTES:

PES = PES Environmental, Inc.

Blaine = Blaine Technical Services

>20 = Above indicated equipment quantification maximum.

<0.1 = Below indicated equipment quantification minimum.

*YSI probe malfunctions

(1) = Measurement taken prior to nutrient introduction

(2) = Measurement taken after nutrient introduction

NM = Not measured.

NA = Not available

mg/L = milligrams per liter

Table 4. Summary of Nutrient Introduction to Wells Through July 1998
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Name	Date Introduced	Flow Rate (gpm)	Volume of Enriched Water Introduced (gallons)	Concentration of H2O2 (ppm)	Amount of O2 Introduced (pounds)
EW-1	12/29/1994	1.2 to 1.4	265	10,000	10.39
	3/16/1995	3.9 to 4.1	249.5	10,000	9.78
	6/21/1995	4.4 to 4.6	250	10,000	9.80
	9/20/1995	4.1 to 4.3	250	10,000	9.80
	1/11/1996	3.2 to 4.0	250	10,000	9.80
	4/11/1996	3.5 to 3.8	250	10,000	9.80
	7/16/1996	3.2 to 4.0	249.5	10,000	9.78
	10/23/1996	4.0 to 4.6	250	10,000	9.80
	2/19/1997	3.9 to 4.1	250	10,000	9.80
	4/4/1997	3.7 to 4.4	250	10,000	9.80
	6/26/1997	4.0 to 4.2	249.8	10,000	9.79
	10/10/1997	3.2 to 4.1	250	10,000	9.80
	3/13/1998	2.9 to 4.6	250	10,000	9.80
	4/9/1998	3.1 to 3.5	250	10,000	9.80
	7/9/1998	2.8 to 4.5	250	10,000	9.80
MW-2	12/29/1994	2.8 to 4.3	201	10,000	7.88
	3/16/1995	3.9	165.5	10,000	6.49
	6/21/1995	1.3 to 4.6	158.4	10,000	6.21
	9/20/1995	4.2 to 4.3	178.7	10,000	7.00
	1/11/1996	4.1 to 4.5	226.6	10,000	8.88
	4/11/1996	3.9 to 4.2	214	10,000	8.39
	7/16/1996	3.8 to 4.0	198	10,000	7.76
	10/23/1996	4.0 to 4.3	222	10,000	8.70
	2/19/1997	3.8 to 4.0	249.1	10,000	9.76
	4/4/1997	3.2 to 3.5	192	10,000	7.52
	6/26/1997	3.8 to 3.9	215	10,000	8.43
	10/10/1997	3.0 to 3.2	190	10,000	7.45
	3/13/1998	3.0 to 4.0	210	10,000	8.23
	4/9/1998	3.2 to 3.8	160	10,000	6.27
	7/9/1998	2.5 to 3.0	189	10,000	7.41
MW-8	12/29/1994	0.5 to 0.6	35	10,000	1.37
	3/16/1995	0.21 to 0.67	80	10,000	3.14
	6/21/1995	0.2 to 0.6	96	10,000	3.76
	9/20/1995	0.3 to 1.7	81.3	10,000	3.19
	1/11/1996	0.3 to 1.1	33.4	10,000	1.31
	4/11/1996	0.2 to 0.5	36	10,000	1.41
	7/16/1996	0.1 to 0.4	52.5	10,000	2.06
	10/23/1996	0.1 to 0.96	53	10,000	2.08
	2/19/1997	0.1 to 0.3	25.9	10,000	1.02
	4/4/1997	0.1 to 0.6	83	10,000	3.25
	6/26/1997	0.2 to 1.1	84	10,000	3.29
	10/10/1997	0.1 to 1.8	85	10,000	3.33

Table 4. Summary of Nutrient Introduction to Wells Through July 1998
 Emery Bay Plaza
 1650 65th Street, Emeryville, California

Well Name	Date Introduced	Flow Rate (gpm)	Volume of Enriched Water Introduced (gallons)	Concentration of H2O2 (ppm)	Amount of O2 Introduced (pounds)
MW-8 Cont.	3/13/1998	0.4 to 0.9	65	10,000	2.55
	4/9/1998	0.2 to 0.8	90	10,000	3.53
	7/9/1998	0.4 to 1.0	61	10,000	2.39
TOTAL			7,694.2	TOTAL	301.54

Notes:

gpm = gallons per minute

ppm = parts per million

Approximately 20 ppm of nitrogen as nitrate and 37 ppm of phosphate was present in solution.

Table 1
Summary of Groundwater Monitoring Well Construction Details
1650 65th Street
Emeryville, California

Well Identification	Top of Casing (feet MSL)	Date Installed	Screened Interval (feet bgs)	Filter Pack Interval (feet bgs)	Screen Slot Size (inches)
EW-1	18.25	28-Mar-90	8.3 - 28.9	6.3 - 30.0	0.020
MW-2	18.24	28-Sep-89	8.3 - 28.0	7.0 - 29.0	0.020
MW-3	14.92	14-Nov-89	6.6 - 18.0	5.3 - 18.3	0.020
MW-4	14.73	15-Nov-89	6.1 - 15.8	5.1 - 16.3	0.020
MW-5	15.34	16-Nov-89	6.7 - 17.9	5.3 - 17.9	0.020
MW-6	14.53	27-Mar-90	7.1 - 21.8	5.7 - 22.1	0.020
MW-7	15.45	29-Mar-90	6.7 - 18.7	5.0 - 18.7	0.020
MW-8	17.52	22-Sep-94	6 - 26	4.0 - 26.0	0.020

Notes:

MSL - mean sea level, referenced to North American Vertical Datum of 1988 (NAVD88).
bgs - below ground surface.

Table 2
Depth-to-Groundwater and Groundwater Elevations
1650 65th Street
Emeryville, California
(Historical Data in Appendix C)

Well Identification	Measurement Date	Top of Casing Elevation (feet MSL)	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet MSL)
EW-1	10/6/2010	18.25	10.39	7.86
	5/26/2011	18.25	10.30	7.95
	11/17/2011	18.25	10.61	7.64
	5/23/2012	18.25	10.49	7.76
	11/21/2012	18.25	11.01	7.24
MW-2	10/6/2010	18.24	10.36	7.88
	5/26/2011	18.24	10.29	7.95
	11/17/2011	18.24	10.73	7.51
	5/23/2012	18.24	10.58	7.66
	11/21/2012	18.24	11.02	7.22
MW-3	10/6/2010	14.92	8.41	6.51
	5/26/2011	14.92	7.72	7.20
	11/17/2011	14.92	8.70	6.22
	5/23/2012	14.92	8.29	6.63
	11/21/2012	14.92	8.36	6.56
MW-4	10/6/2010	14.73	8.03	6.70
	5/26/2011	14.73	7.83	6.90
	11/17/2011	14.73	8.02	6.71
	5/23/2012	14.73	8.10	6.63
	11/21/2012	14.73	7.79	6.94
MW-5	10/6/2010	15.34	6.83	8.51
	5/26/2011	15.34	6.45	8.89
	11/17/2011	15.34	7.10	8.24
	5/23/2012	15.34	6.91	8.43
	11/21/2012	15.34	7.71	7.63
MW-6	10/6/2010	14.53	8.19	6.34
	5/26/2011	14.53	7.95	6.58
	11/17/2011	14.53	8.37	6.16
	5/23/2012	14.53	7.91	6.62
	11/21/2012	14.53	8.16	6.37
MW-7	10/6/2010	15.45	5.78	9.67
	5/26/2011	15.45	5.80	9.65
	11/17/2011	15.45	7.10	8.35
	5/23/2012	15.45	5.97	9.48
	11/21/2012	15.45	4.44	11.01
MW-8	10/6/2010	17.52	10.85	6.67
	5/26/2011	17.52	10.46	7.06
	11/17/2011	17.52	10.85	6.67
	5/23/2012	17.52	10.61	6.91
	11/21/2012	17.52	10.54	6.98

Notes:

MSL - mean sea level, referenced to North American Vertical Datum of 1988 (NAVD88).

btoc - below top of casing

Table 1
Summary of Analytical Results for Groundwater - Petroleum Hydrocarbons and VOCs
1650 65th Street
Emeryville, California

Sample ID	Date	TPHg (mg/L)	VOCs (µg/L)										
			Benzene	Toluene	Ethylbenzene	Xylenes	TBA	MTBE	DIPE	ETBE	1,2-DCA	TAME	1,2-DBA
TGW-1	3/21/2012	< 0.050	< 1.0	1.2	< 1.0	< 1.0	<20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vapor Intrusion ESL - C/I Exposure ⁽⁴⁾		--	1,800	530,000	170,000	160,000	--	80,000	--		690		510
Drinking Water Ceiling ESL ⁽²⁾		0.1	170	40	30	20	50,000	5	--		7,000		50,000
Drinking Water ESL ⁽³⁾		0.21	1	150	300	1,800	12	13	--		600		1
Non-Drinking Water Ceiling ESL ⁽¹⁾		5.0	20,000	400	300	5,300	50,000	1,800	--		50,000		50,000
San Francisco Bay Basin Plan ⁽⁵⁾		--	1	150	300	1,750	--	13	--		0.5		0.5

Notes:

VOCs = Volatile Organic Compounds

-- = Not analyzed or not applicable

mg/L = Milligrams per liter

µg/L = Micrograms per liter

< 0.5 = Not detected at or above the indicated laboratory reporting limit

TPHg = Total petroleum hydrocarbons quantified as gasoline

TBA = tert-Butyl Alcohol

MTBE = Methyl tert-Butyl Ether

ETBE = Ethyl tert-butyl ether

DIPE = Diisopropyl Ether

TAME = Methyl tert-Amyl Ether

1,2-DCA = 1,2-Dichloroethane

1,2-DBA = 1,2-Dibromoethane

(1) California Regional Water Quality Control Board, San Francisco Region (RWQCB) Environmental Screening Level (ESL), Non-Drinking Water Gross Contamination Ceiling Levels

(2) RWQCB Drinking Water Ceiling Levels (Table I-1; May 2008).

(3) RWQCB Drinking Water Screening Levels (Table F-3; May 2008).

(4) RWQCB Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (Table E-1; May 2008).

(5) RWQCB San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), December 2010.

Table 2
Summary of Analytical Results for Sub-Slab Vapor Probes
1650 65th Street
Emeryville, California

Sample Location	Sample ID	Date Collected	VOCs (µg/m ³)				Major Gases (% volume)			
			Benzene	Toluene	Ethylbenzene	Xylenes	Nitrogen	Oxygen	Carbon Dioxide	Methane
AA-1	AA-1	3/22/12	<1.1	<1.1	<1.1	<1.1	--	19.0	<0.22	<0.22
	AA-1	4/19/12	<3.19	4.30	<4.34	5.86	--	--	--	--
SS-1	SS-1 ^a	3/22/12	<3,200	<3,200	<3,200	<3,200	--	18.0	0.77	<0.2
	SS-1 ^a	4/19/12	<3.19	<3.77	<4.34	<4.34	78.9	19.3	1.76	<0.100
SS-2	SS-2 ^a	3/22/12	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	--	18.0	0.22	<0.16
	SS-2 ^a	4/19/12	<3.19 / <3.19	<3.77 / <3.77	<4.34 / <4.34	<4.34 / <4.34	78.9	19.5	1.63	<0.100
Shallow Soil Vapor ESL ^b			280	180,000	3300	58,000	--	--	--	--
Subslab Soil Vapor Screening Levels ^c			2.8	1,800	32	580	--	--	--	--
Indoor Air ESLs ^d			0.14	88	1.60	29	--	--	--	--

Notes:

VOCs = Volatile Organic Compounds

µg/m³ = Micrograms per cubic meter of air

<0.22 = Not detected at or above the indicated laboratory reporting limit

<3.19 / <3.19 = Indicates results for primary/duplicate sample

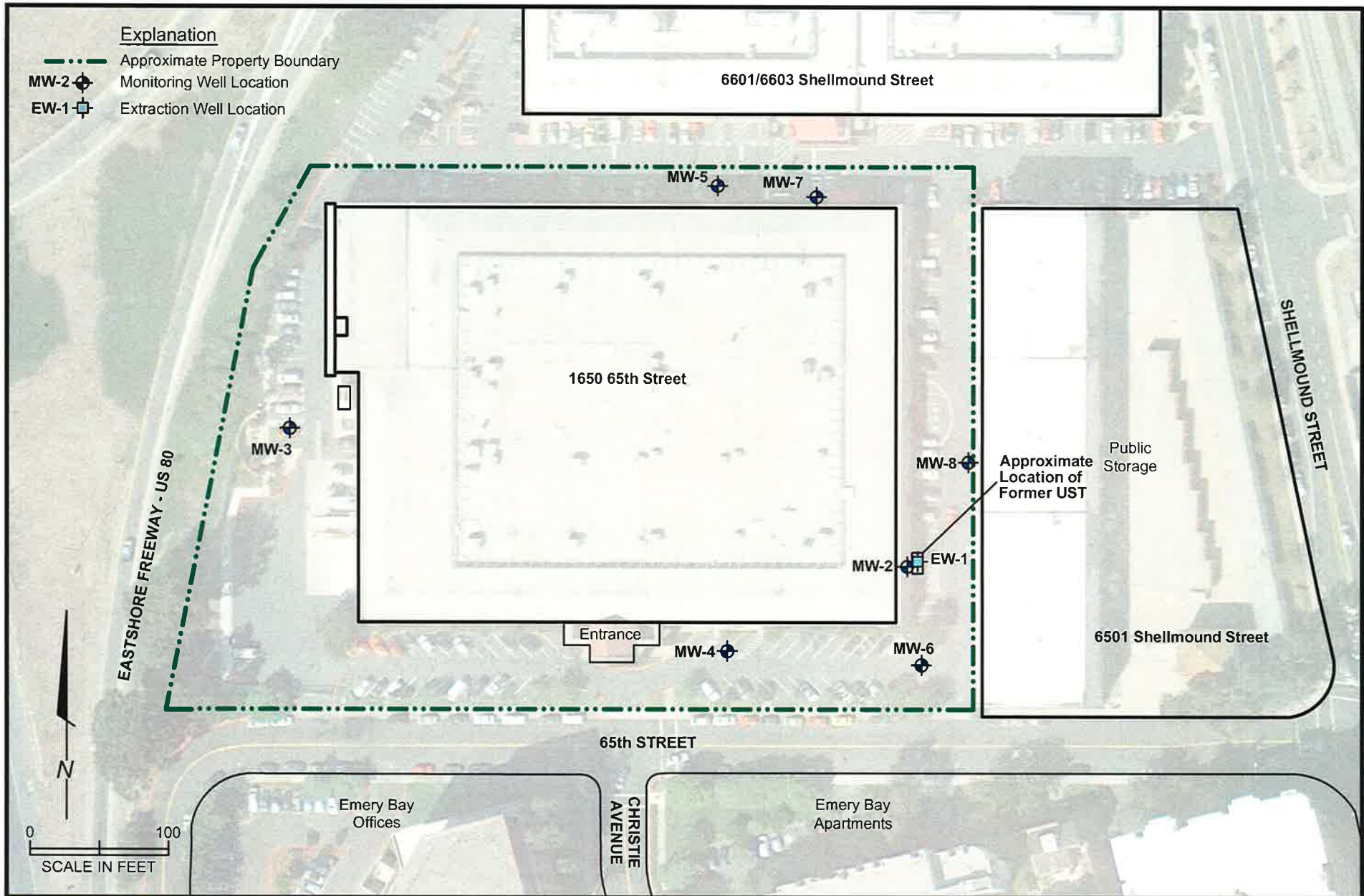
-- = Not analyzed or not applicable

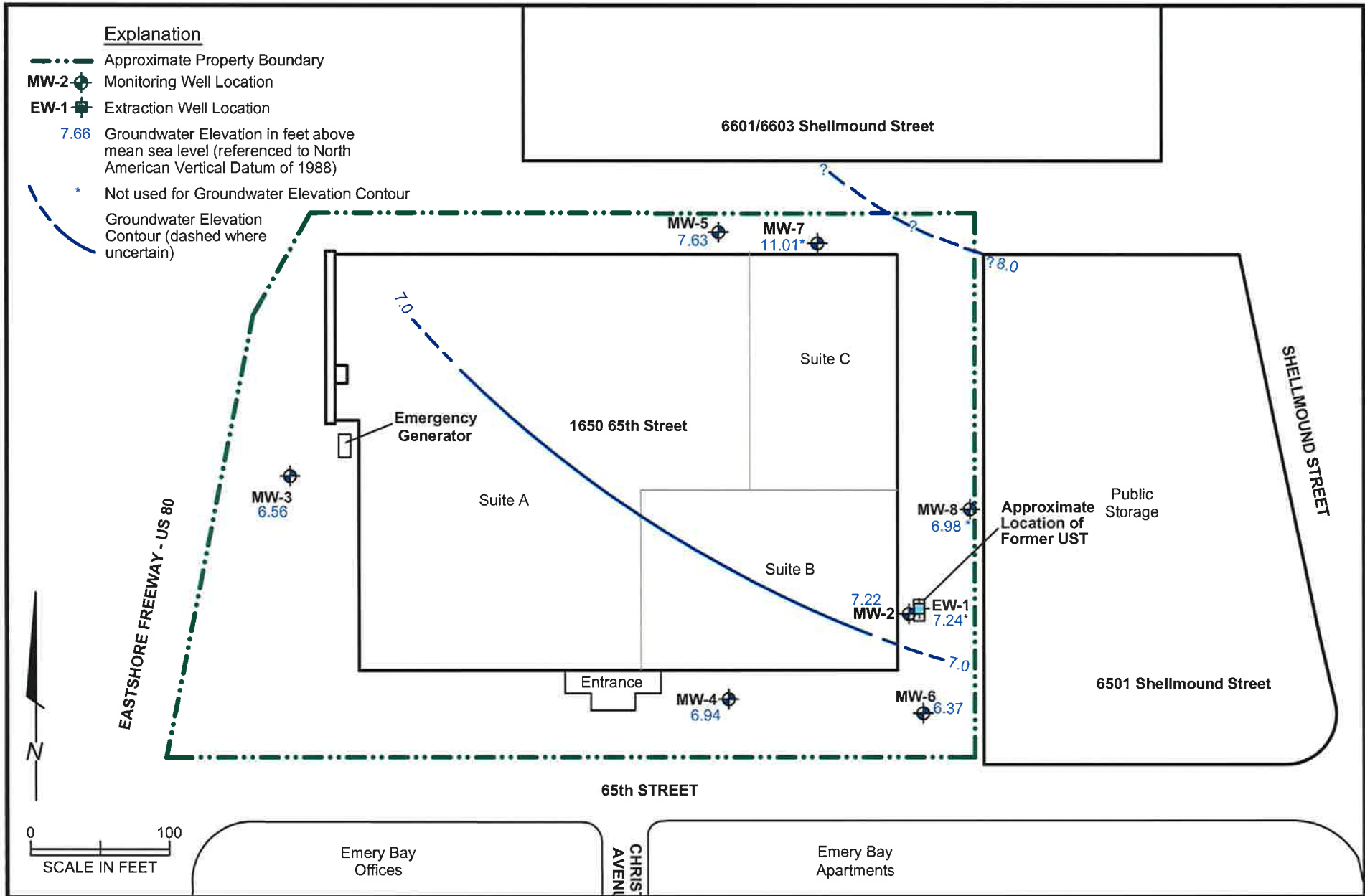
^a The samples for SS-1 and SS-2 collected on March 22, 2012 contained 1,1-difluoroethane (1,1-DFA) (the reference leak detection compound) at concentrations of 65,000 and 21,000 parts per million volumetric (ppmv) respectively; 1,1-DFA was detected in the accompanying shroud samples for SS-1 and SS-2 at concentrations of 98,000 and 2,600 ppmv, respectively. The detected concentrations indicated leaks in the sampling equipment. Therefore, the sub-slab vapor probes were resampled on April 19, 2012. 1,1-DFA was not detected at or above the laboratory reporting limit for the samples collected at SS-1 and SS-2 on April 19, 2012; 1,1-DFA was detected in the accompanying shroud samples at 8,800 and 8,560 ppmv, respectively, and indicates dilution from ambient air did not affect the samples. 1,1-DFA analyzed by EPA Method TO-3.

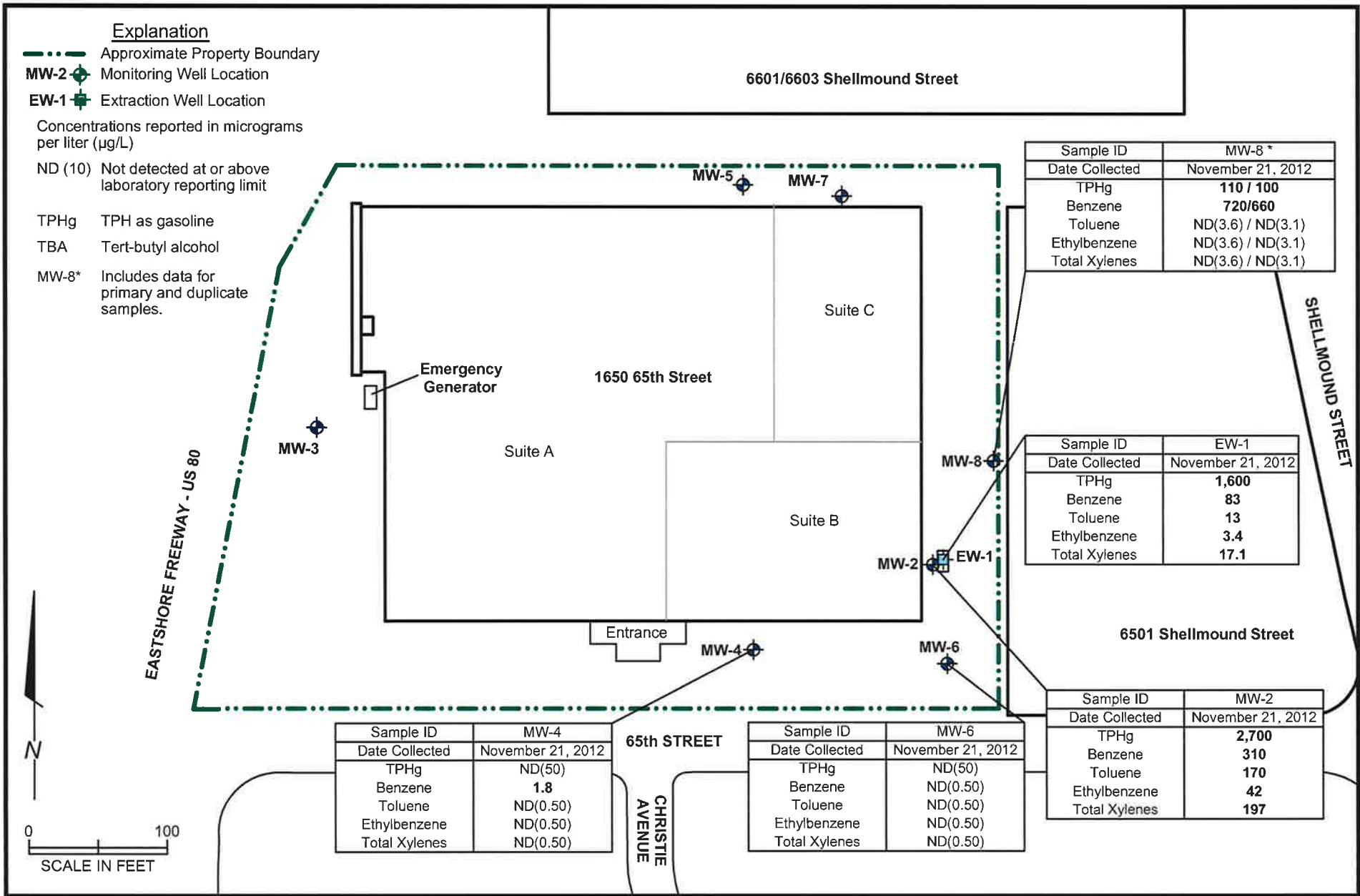
^b California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (ESLs), Table E-2. Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only), Interim Final, May 2008.

^c Subslab soil vapor screening calculated as indoor air screening level (ESL) divided by an attenuation factor of 0.05, in accordance with the Department of Toxic Substances Control *Vapor Intrusion Guidance* (October 2011).

^d RWQCB ESLs, Table E-2. Ambient and Indoor Air Screening Levels (volatile chemicals only), Interim Final, May 2008.



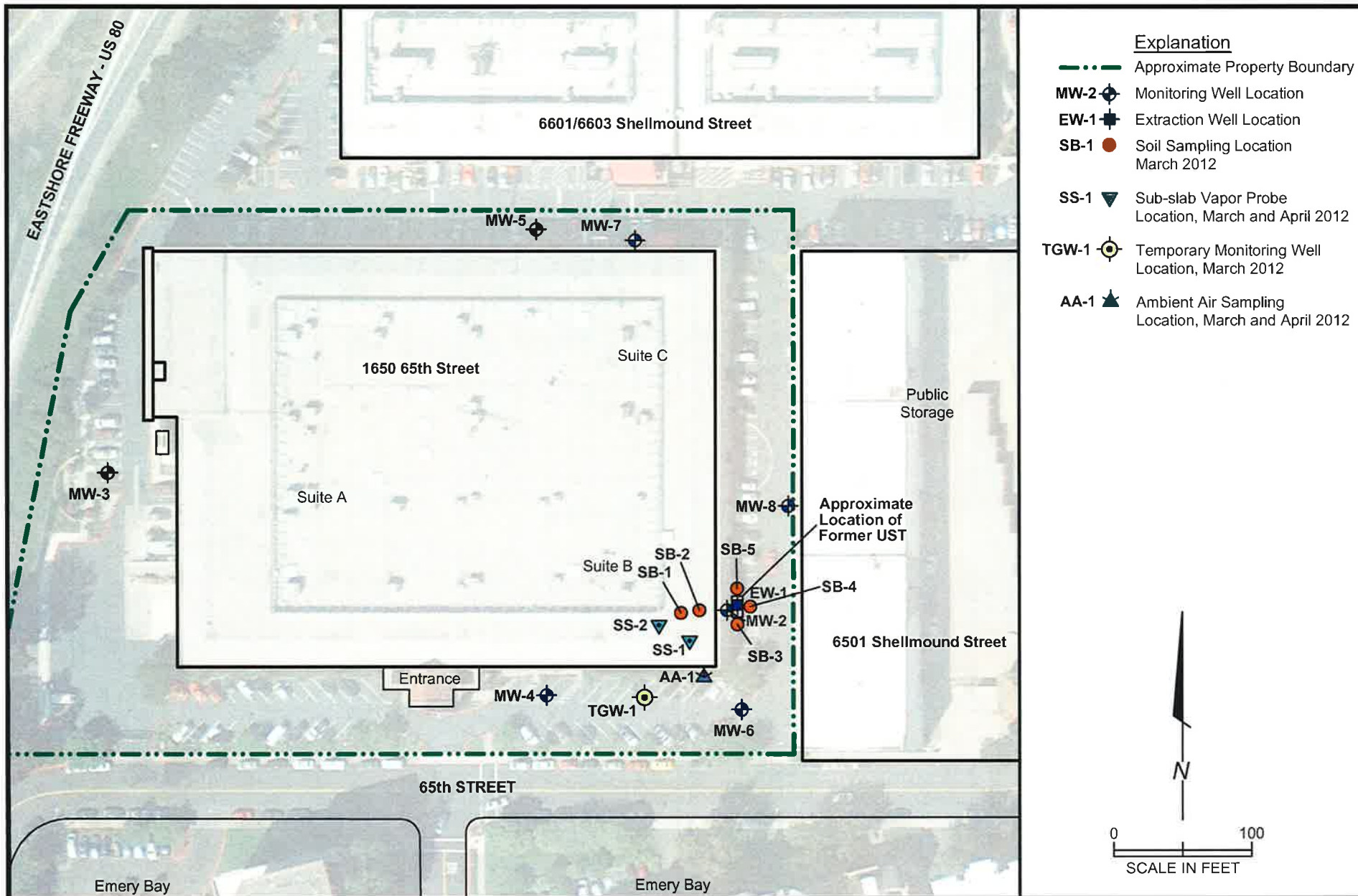




Groundwater Sampling Results
Fourth Quarter 2012
650 65th Street
Emeryville, California

PLATE

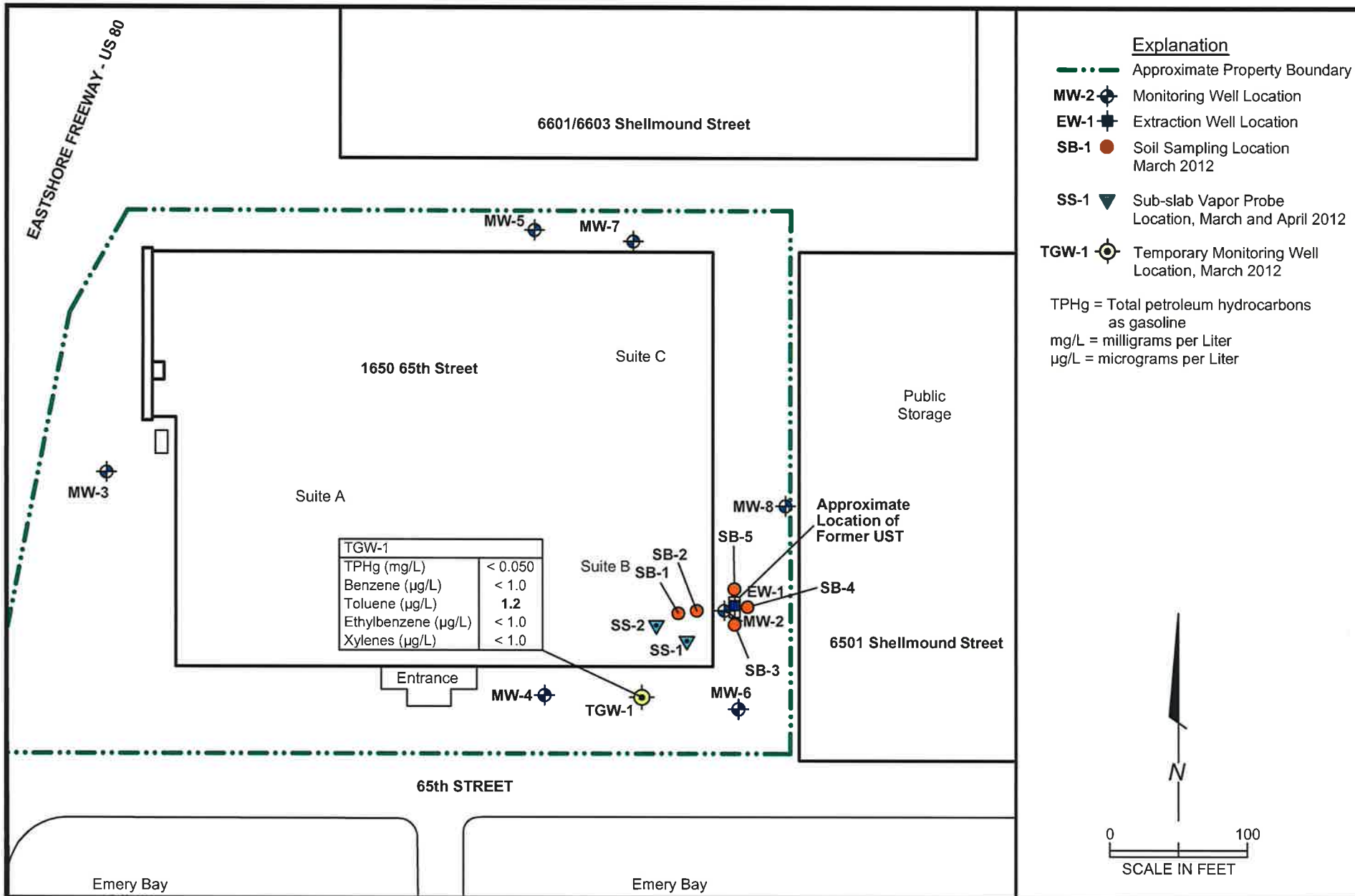
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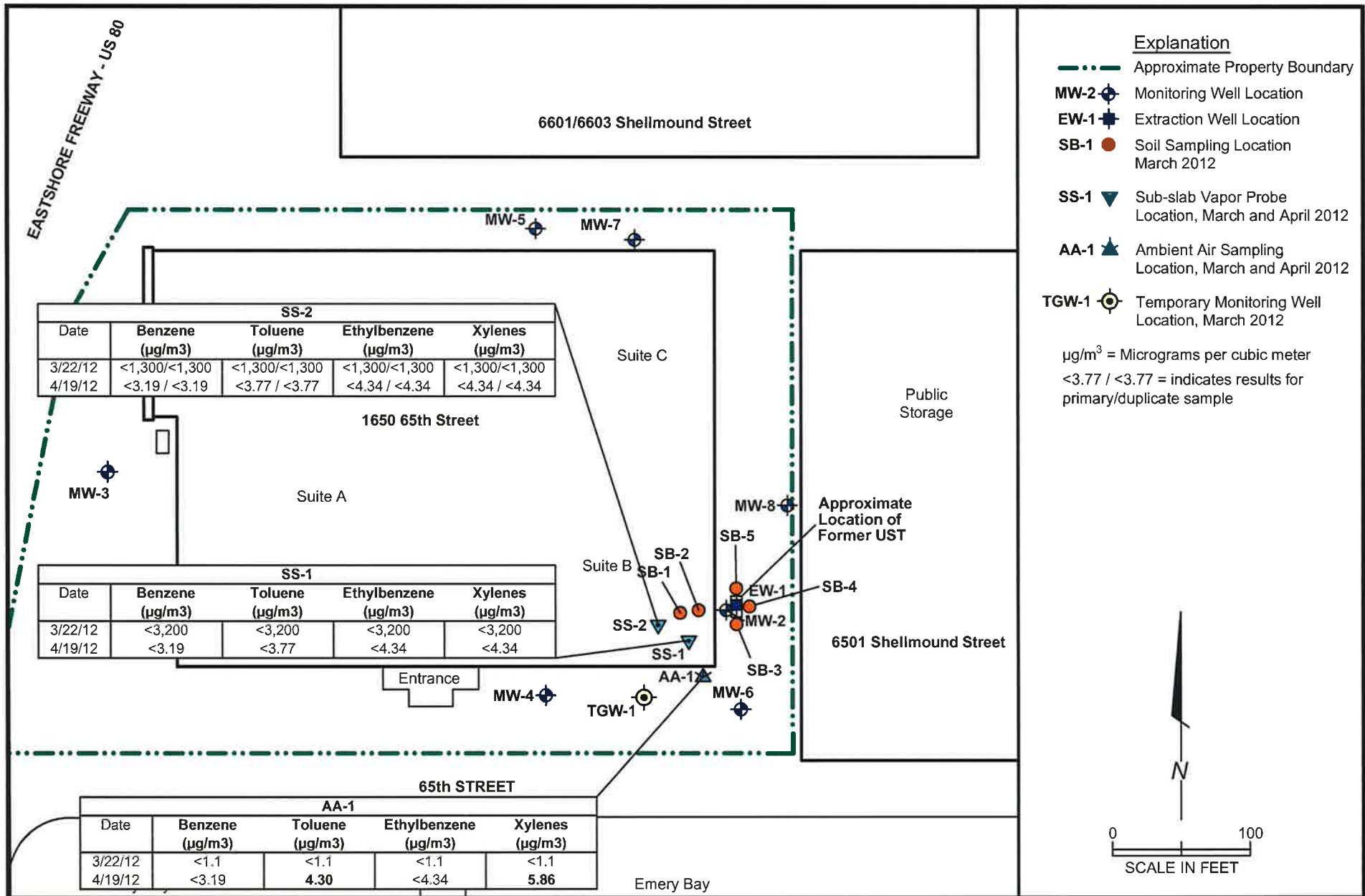


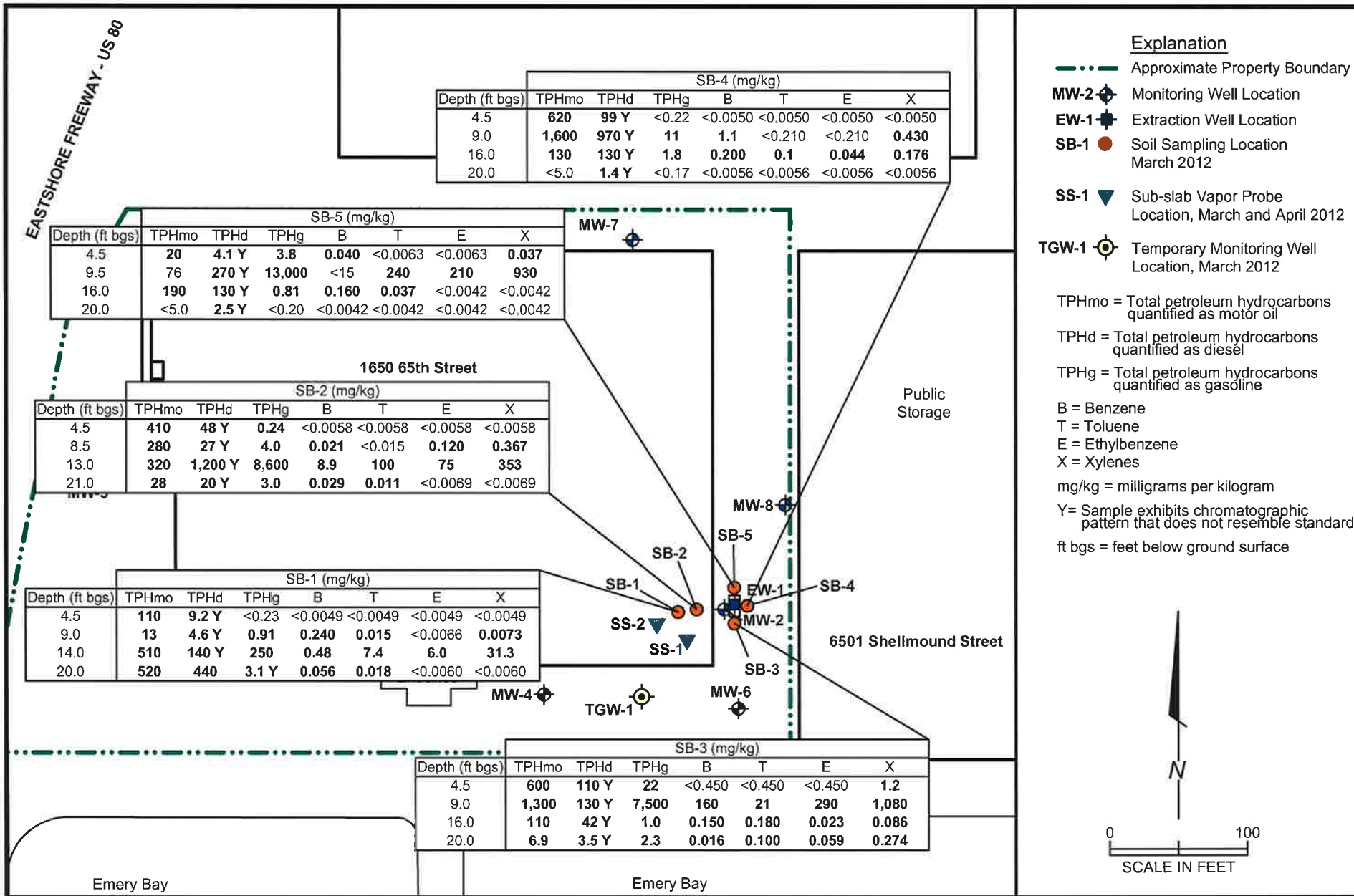
Explanation

- Approximate Property Boundary
- MW-2 Monitoring Well Location
- EW-1 Extraction Well Location
- SB-1 Soil Sampling Location
March 2012
- SS-1 Sub-slab Vapor Probe
Location, March and April 2012
- TGW-1 Temporary Monitoring Well
Location, March 2012
- AA-1 Ambient Air Sampling
Location, March and April 2012











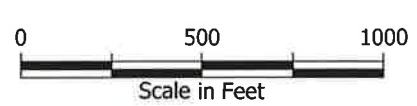
Explanation



Approximate Off-Site Well Locations (ACPWA Database)

ACPWA = Alameda County Public Works Agency

Aerial Photo Source: Google Earth, October 2, 2009



PES Environmental, Inc.
Engineering & Environmental Services

Off-Site Well Location Map
1650 65th Street
Emeryville, California

PLATE

A-1

Table A-1
ACEH Off-Site Well Record Summary
1650 65th Street
Emeryville, California

Map ID	Address	Longcity	Owner	Update	Xcoord	Ycoord	Drilldate	Elevation	Totaldepth	Waterdepth	Diameter	Use	WCR #
2	1301 65TH ST	Emeryville	CHARLES GENSLER	8/8/1988	122289401	37847078	Jun-88	0	23	11	2	MON	
3	1482 67th St	Emeryville	Clearprint Paper Company	2/4/1998	122291680	37848922	Oct-95	0	23	0	2	MON	
4	1482 67th St	Emeryville	Clearprint Paper Company	2/4/1998	122291680	37848922	Oct-95	0	27	0	2	MON	
5	1482 67th St	Emeryville	Clearprint Paper Company	2/4/1998	122291680	37848922	Oct-95	0	29	0	2	MON	
6	6529 Hollis St	Emeryville	GROVE VALVE & REGULATOR	6/3/1992	122291258	37847188	2/92	21	25	13	4	MON	
7	6529 Hollis St	Emeryville	GROVE VALVE & REGULATOR	6/3/1992	122291258	37847188	2/92	16	25	23	4	MON	
8	6529 Hollis St	Emeryville	GROVE VALVE & REGULATOR	6/3/1992	122291258	37847188	2/92	17	25	23	4	MON	
9	1275 66th St	Emeryville		9/11/1997	122289245	37848293	4/93	0	25	18	2	MON	
10	1275 66th St	Emeryville		9/11/1997	122289245	37848293	4/93	0	21	18	4	MON	
11	722 Folger Av	Berkeley	Coulter Steel	11/3/1997	122293725	37849408	Dec-93	0	20	15	2	MON	
12	6707 Bay Street	Emeryville	MRCP Realty Properties	7/13/1990	122294400	37848438	1/90	0	22	13	4	TES	
13	6707 Bay Street	Emeryville	MRCP Realty Properties	7/16/1990	122294400	37848438	1/90	0	22	15	4	TES	
14	1650 65th St.	Emeryville	BENEFIT CAPITAL CO(OAK)	2/3/1988	122295006	37846399	Jul-87	0	30	12	2	DES	
15	64th St. & Christie Ave	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	8/90	181	34	28	2	MON	
16	64th St & Christie Ave	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	6/90	0	14	5	2	MON	
17	64th St. & Christie Ave.	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	4/90	0	10	2	2	MON	
18	64th St. & Christie Ave.	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	4/90	0	15	5	2	MON	
19	64th St. & Christie Ave.	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	4/90	0	18	4	2	MON	
20	64th St & Christie Ave	Emeryville	Christie Avenue Partners	1/11/1991	122294500	37844100	4/90	0	16	8	2	MON	
21	Christie & Shellmound	Emeryville	Christie Avenue Partners	9/27/1991	122293800	37839900	7/91	24	25	13	4	MON	
22	1650 65th St	Emeryville	Emery Bay Plaza	7/24/1997	122294989	37846399	9/94	0	26	0	2	MON	
23	1600 64th Street	Emeryville	Emeryville Rdlvpmnt Agency	7/9/1990	122294726	37844075	Dec-89	0	20	7	2	MON	
24	1600 64th Street	Emeryville	Emeryville Rdlvpmnt Agency	7/9/1990	122294726	37844075	Dec-89	0	16	6	2	MON	
25	1600 64th Street	Emeryville	Emeryville Rdlvpmnt Agency	7/9/1990	122294726	37844075	Dec-89	0	17	6	2	MON	
26	1650 65th Street	Emeryville	P.O. Partners	7/13/1990	122295006	37846399	9/89	0	29	12	2	MON	
27	1650 65th Street	Emeryville	P.O. Partners	7/13/1990	122295006	37846399	Nov-89	0	18	9	4	MON	
28	1650 65th Street	Emeryville	P.O. Partners	7/13/1990	122295006	37846399	Nov-89	0	16	9	4	MON	
29	1650 65th Street	Emeryville	P.O. Partners	7/13/1990	122295006	37846399	Nov-89	0	18	8	4	MON	
31	6475 Christie Avenue	Emeryville	P.O. Partners	1/11/1991	122294621	37844714	3/90	0	22	9	4	MON	
32	6475 Christie Avenue	Emeryville	P.O. Partners	1/11/1991	122294621	37844714	3/90	0	19	8	4	MON	
33	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	13	3	2	MON	
34	64th Street/Christie Av.	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Mar-87	0	14	6	2	MON	
35	64th St/Christie Avenue	Emeryville	Christie Avenue Partners	11/18/2009			Oct-96					DES	547838
36	64th St/Christie Avenue	Emeryville	Christie Avenue Partners	11/18/2009			Oct-96					DES	547840
37	64th St/Christie Avenue	Emeryville	Christie Avenue Partners	11/18/2009			Oct-96					DES	547839
38	64th St/Christie Avenue	Emeryville	Christie Avenue Partners	11/18/2009			Oct-96					DES	547836
39	1351 Ocean Avenue	Oakland	HFH Limited	2/27/1991	122289420	37846005	6/88	0	140	80	5	DOM	
40	1351 OCEAN AV.	Oakland	HFH LTD.	6/15/1989	122289420	37846005	Nov-88	0	15	10	2	MON	
41	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	13	6	2	MON	
42	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	12	5	2	MON	
43	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	14	6	2	MON	
44	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	13	6	2	MON	
45	64th Street/Christie Av.	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Mar-87	0	12	7	2	MON	
46	63rd ST & OVERLAND AVE	Emeryville	WAREHAM DEVELOPMENT	2/24/1988	122292100	37843500	Nov-87	0	25	4	2	MON	
47	63rd ST & OVERLAND AVE.	Emeryville	WAREHAM DEVELOPMENT	2/24/1988	122292100	37843500	Nov-87	0	25	6	2	MON	
48	6121 Hollis St	Emeryville	United States Postal Ser	7/16/1997	122289393	37842967	6/93	0	14	9	4	MON	
49	6121 Hollis St	Emeryville	United States Postal Ser	7/16/1997	122289393	37842967	6/93	0	11	4	4	MON	
50	6121 Hollis St	Emeryville	United States Postal Ser	7/16/1997	122289393	37842967	6/93	0	12	10	4	MON	
51	6121 Hollis St	Emeryville	United States Postal Ser	7/16/1997	122289393	37842967	6/93	0	11	6	4	MON	
52	Landeragan St. & Powell St	Emeryville	Emeryville Amtrak	7/23/1993	122291011	37840540	Dec-92	9	79	0	0	BOR	
53	64th St/Christie Avenue	Emeryville	The Martin Company	7/24/1990	122294500	37844100	Apr-87	0	13	5	2	MON	
54	6121 Hollis St	Emeryville	U.S. Postal Service	6/4/1992	122289266	37842615	1/92	0	19	8	2	TES	

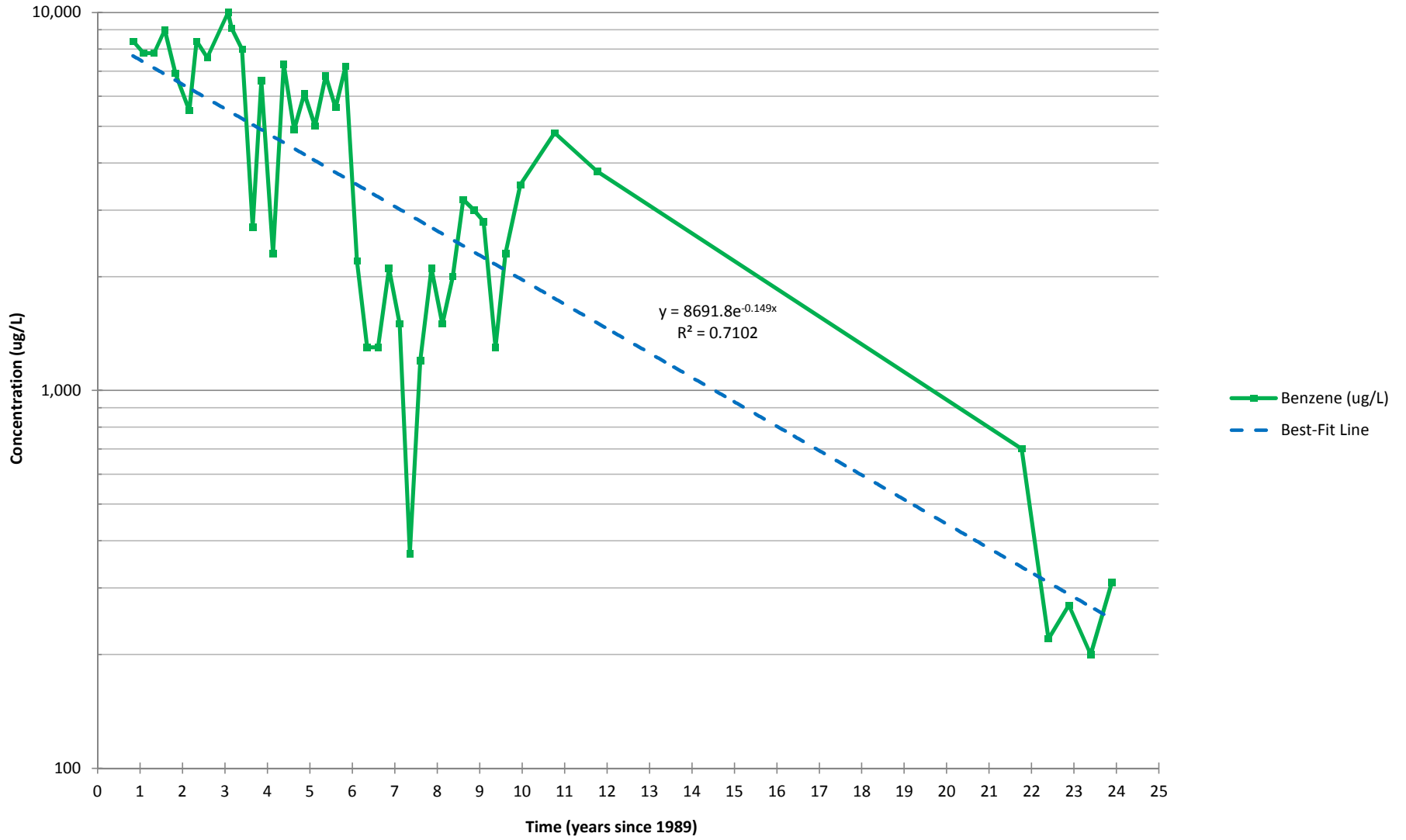
Notes:

- DOM=Domestic well
- IRR=Irrigation well
- TES=Test well
- BOR= Geotechnical investigation
- MON= Monitoring well
- DES=well destroyed (through permit)

APPENDIX C

**SUMMARY OF LINEAR REGRESSION ANALYSES AND ATTENUATION
CALCULATION WORKSHEETS FOR DISSOLVED-PHASE HYDROCARBONS IN
GROUNDWATER**

C1. Concentration Trend and Point Decay Rate Constant (k_{point}) Calculation
MW-2 - Benzene
1650 65th Street
Emeryville, California



Attenuation Rate Calculation Worksheet for MW-2 - Benzene

1650 65th Street
Emeryville, California

<u>Sample Date</u>	<u>Year (numeric)</u>	<u>Year (t=0)</u>	<u>Benzene (ug/L)</u>	<u>Nat. Log Benzene</u>
11/1/89	1,989.83	0.83	8400	9.036
2/1/90	1,990.09	1.09	7800	8.962
5/1/90	1,990.33	1.33	7800	8.962
8/1/90	1,990.58	1.58	9000	9.105
11/1/90	1,990.83	1.83	6900	8.839
3/1/91	1,991.16	2.16	5500	8.613
5/1/91	1,991.33	2.33	8400	9.036
8/1/91	1,991.58	2.58	7600	8.936
1/29/92	1,992.08	3.08	10000	9.210
2/28/92	1,992.16	3.16	9100	9.116
5/28/92	1,992.41	3.41	8000	8.987
8/27/92	1,992.65	3.65	2700	7.901
11/10/92	1,992.86	3.86	6600	8.795
2/18/93	1,993.13	4.13	2300	7.741
5/20/93	1,993.38	4.38	7300	8.896
8/19/93	1,993.63	4.63	4900	8.497
11/15/93	1,993.87	4.87	6100	8.716
2/14/94	1,994.12	5.12	5000	8.517
5/16/94	1,994.37	5.37	6800	8.825
8/10/94	1,994.61	5.61	5600	8.631
11/3/94	1,994.84	5.84	7200	8.882
2/9/95	1,995.11	6.11	2200	7.696
5/9/95	1,995.35	6.35	1300	7.170
8/10/95	1,995.61	6.61	1300	7.170
11/13/95	1,995.87	6.87	2100	7.650
2/13/96	1,996.12	7.12	1500	7.313
5/9/96	1,996.35	7.35	370	5.914
8/8/96	1,996.60	7.60	1200	7.090
11/11/96	1,996.86	7.86	2100	7.650
2/14/97	1,997.12	8.12	1500	7.313
5/14/97	1,997.37	8.37	2000	7.601
8/12/97	1,997.61	8.61	3200	8.071
11/12/97	1,997.86	8.86	3000	8.006
2/4/98	1,998.09	9.09	2800	7.937

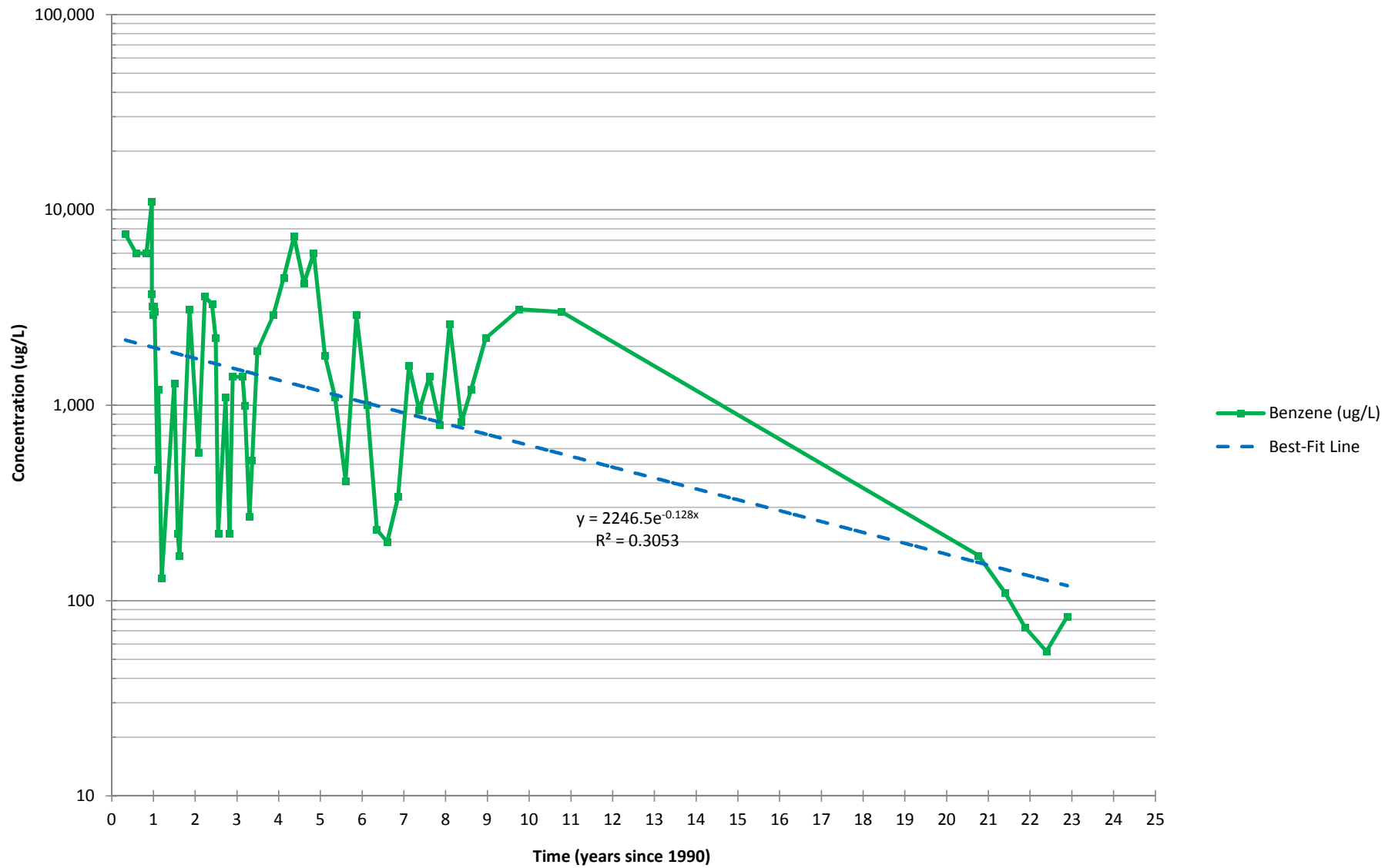
5/18/98	1,998.38	9.38	1300	7.170
8/11/98	1,998.61	9.61	2300	7.741
12/17/98	1,998.96	9.96	3500	8.161
10/7/99	1,999.76	10.76	4800	8.476
10/7/00	2,000.77	11.77	3800	8.243
10/7/10	2,010.77	21.77	700	6.551
5/26/11	2,011.40	22.40	220	5.394
11/17/11	2,011.88	22.88	270	5.598
5/23/12	2,012.39	23.39	200	5.298
11/21/2012	2,012.89	23.89	310	5.737

$$t = \frac{-\ln \left[\frac{C_{goal}}{C_{start}} \right]}{K_{point}}$$

Reference: USEPA, 2002. *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*. EPA/540/S-02/500, November.

<u>Notes</u>	<u>t</u>	<u>t (Units)</u>	<u>Cgoal</u>	<u>Cstart</u>	<u>Kpoint</u>	<u>t (years from 2013)</u>	<u>Cgoal Date</u>
	60.9	Years since 1989	1	8691.8	0.149	36.9	2050
	23.3	Years since 1989	270	8691.8	0.149	-0.7	2012

C2. Concentration Trend and Point Decay Rate Constant (k_{point}) Calculation
EW-1 - Benzene
1650 65th Street
Emeryville, California



Attenuation Rate Calculation Worksheet for EW-1 - Benzene

1650 65th Street
Emeryville, California

<u>Sample Date</u>	<u>Year (numeric)</u>	<u>Year (t=0)</u>	<u>Benzene (ug/L)</u>	<u>Nat. Log Benzene</u>
5/1/1990	1,990.33	0.33	7500	8.923
8/1/1990	1,990.58	0.58	6000	8.700
11/1/1990	1,990.83	0.83	6000	8.700
12/17/1990	1,990.96	0.96	11000	9.306
12/19/1990	1,990.97	0.97	3700	8.216
12/21/1990	1,990.97	0.97	3200	8.071
12/27/1990	1,990.99	0.99	2900	7.972
1/4/1991	1,991.01	1.01	3200	8.071
1/11/1991	1,991.03	1.03	3000	8.006
2/6/1991	1,991.10	1.10	470	6.153
2/13/1991	1,991.12	1.12	1200	7.090
3/15/1991	1,991.20	1.20	130	4.868
7/3/1991	1,991.50	1.50	1300	7.170
8/1/1991	1,991.58	1.58	220	5.394
8/16/1991	1,991.62	1.62	170	5.136
11/13/1991	1,991.87	1.87	3100	8.039
1/29/1992	1,992.08	2.08	570	6.346
3/26/1992	1,992.23	2.23	3600	8.189
5/28/1992	1,992.41	2.41	3300	8.102
6/29/1992	1,992.49	2.49	2200	7.696
7/21/1992	1,992.55	2.55	220	5.394
9/23/1992	1,992.73	2.73	1100	7.003
10/27/1992	1,992.82	2.82	220	5.394
11/24/1992	1,992.90	2.90	1400	7.244
2/18/1993	1,993.13	3.13	1400	7.244
3/9/1993	1,993.19	3.19	990	6.898
4/21/1993	1,993.30	3.30	270	5.598
5/13/1993	1,993.36	3.36	520	6.254
6/28/1993	1,993.49	3.49	1900	7.550
11/15/1993	1,993.87	3.87	2900	7.972
2/14/1994	1,994.12	4.12	4500	8.412
5/16/1994	1,994.37	4.37	7300	8.896
8/10/1994	1,994.61	4.61	4200	8.343
11/3/1994	1,994.84	4.84	6000	8.700
2/9/1995	1,995.11	5.11	1800	7.496

5/9/1995	1,995.35	5.35	1100	7.003
8/10/1995	1,995.61	5.61	410	6.016
11/13/1995	1,995.87	5.87	2900	7.972
2/13/1996	1,996.12	6.12	1000	6.908
5/9/1996	1,996.35	6.35	230	5.438
8/8/1996	1,996.60	6.60	200	5.298
11/11/1996	1,996.86	6.86	340	5.829
2/14/1997	1,997.12	7.12	1600	7.378
5/14/1997	1,997.37	7.37	940	6.846
8/12/1997	1,997.61	7.61	1400	7.244
11/12/1997	1,997.86	7.86	790	6.672
2/4/1998	1,998.09	8.09	2600	7.863
5/18/1998	1,998.38	8.38	820	6.709
8/11/1998	1,998.61	8.61	1200	7.090
12/17/1998	1,998.96	8.96	2200	7.696
10/7/1999	1,999.76	9.76	3100	8.039
10/12/2000	2,000.78	10.78	3000	8.006
10/7/2010	2,010.77	20.77	170	5.136
5/26/2011	2,011.40	21.40	110	4.700
11/17/2011	2,011.88	21.88	73	4.290
5/23/2012	2,012.39	22.39	55	4.007
11/21/2012	2,012.89	22.89	83	4.419

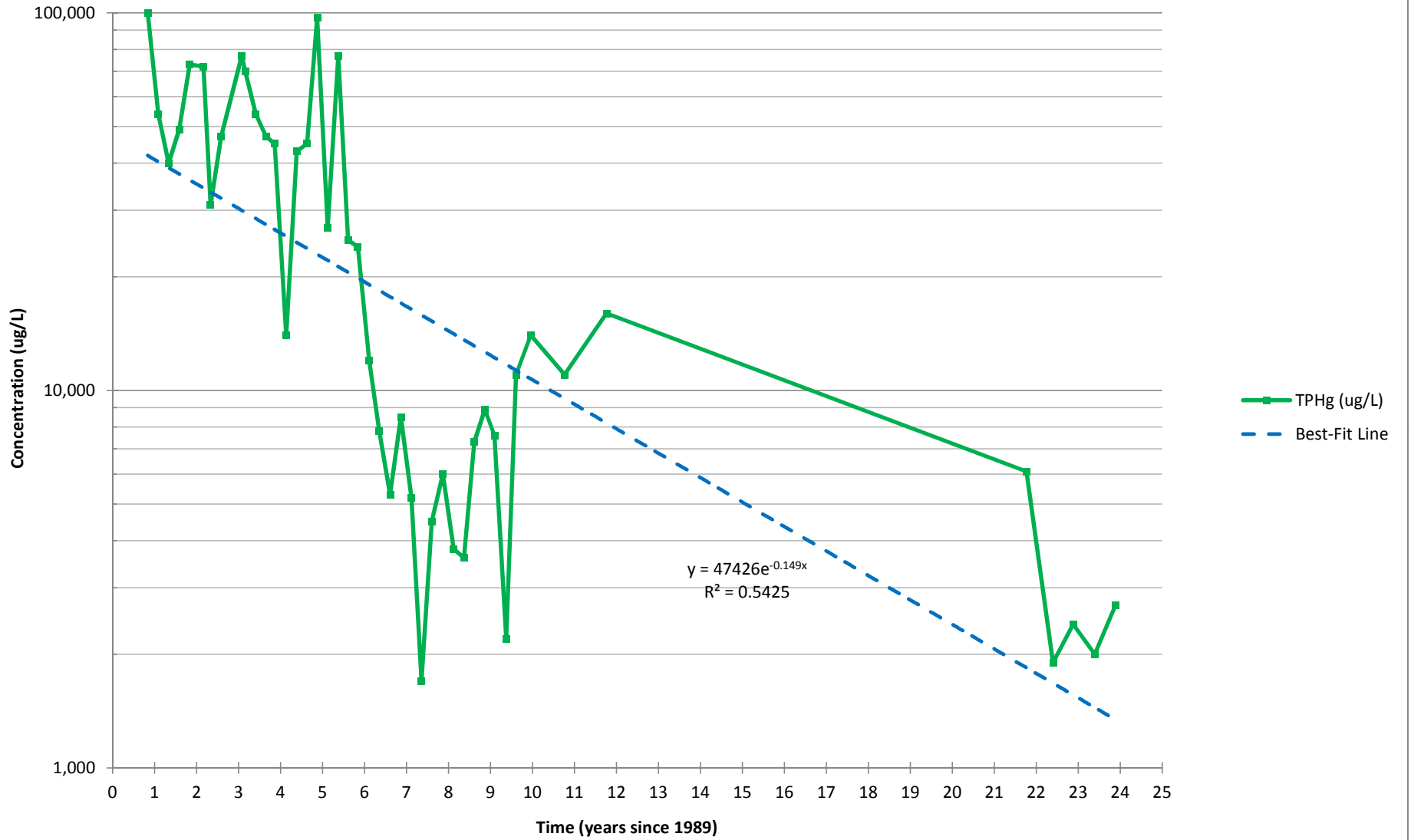
$$t = \frac{-\ln \left[\frac{C_{goal}}{C_{start}} \right]}{K_{point}}$$

Reference: USEPA, 2002. *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*. EPA/540/S-02/500, November.

<u>Notes</u>	<u>t</u>	<u>t (Units)</u>	<u>Cgoal</u>	<u>Cstart</u>	<u>Kpoint</u>	<u>t (years from 2013)</u>	<u>Cgoal Date</u>
MCL	60.3	Years since 1990	1	2246	0.128	37.3	2050
ESL for VI	16.6	Years since 1990	270	2246	0.128	-7.4	2007

C3. Concentration Trend and Point Decay Rate Constant (k_{point}) Calculation

MW-2 - TPHg
1650 65th Street
Emeryville, California



Attenuation Rate Calculation Worksheet for MW-2 - TPHg

1650 65th Street
Emeryville, California

<u>Sample Date</u>	<u>Year (numeric)</u>	<u>Year (t=0)</u>	<u>TPHg (ug/L)</u>	<u>Nat. Log TPHg</u>
11/1/89	1,989.83	0.83	100000	11.513
2/1/90	1,990.09	1.09	54000	10.897
5/1/90	1,990.33	1.33	40000	10.597
8/1/90	1,990.58	1.58	49000	10.800
11/1/90	1,990.83	1.83	73000	11.198
3/1/91	1,991.16	2.16	72000	11.184
5/1/91	1,991.33	2.33	31000	10.342
8/1/91	1,991.58	2.58	47000	10.758
1/29/92	1,992.08	3.08	77000	11.252
2/28/92	1,992.16	3.16	70000	11.156
5/28/92	1,992.41	3.41	54000	10.897
8/27/92	1,992.65	3.65	47000	10.758
11/10/92	1,992.86	3.86	45000	10.714
2/18/93	1,993.13	4.13	14000	9.547
5/20/93	1,993.38	4.38	43000	10.669
8/19/93	1,993.63	4.63	45000	10.714
11/15/93	1,993.87	4.87	97000	11.482
2/14/94	1,994.12	5.12	27000	10.204
5/16/94	1,994.37	5.37	77000	11.252
8/10/94	1,994.61	5.61	25000	10.127
11/3/94	1,994.84	5.84	24000	10.086
2/9/95	1,995.11	6.11	12000	9.393
5/9/95	1,995.35	6.35	7800	8.962
8/10/95	1,995.61	6.61	5300	8.575
11/13/95	1,995.87	6.87	8500	9.048
2/13/96	1,996.12	7.12	5200	8.556
5/9/96	1,996.35	7.35	1700	7.438
8/8/96	1,996.60	7.60	4500	8.412
11/11/96	1,996.86	7.86	6000	8.700
2/14/97	1,997.12	8.12	3800	8.243
5/14/97	1,997.37	8.37	3600	8.189
8/12/97	1,997.61	8.61	7300	8.896
11/12/97	1,997.86	8.86	8900	9.094
2/4/98	1,998.09	9.09	7600	8.936
5/18/98	1,998.38	9.38	2200	7.696

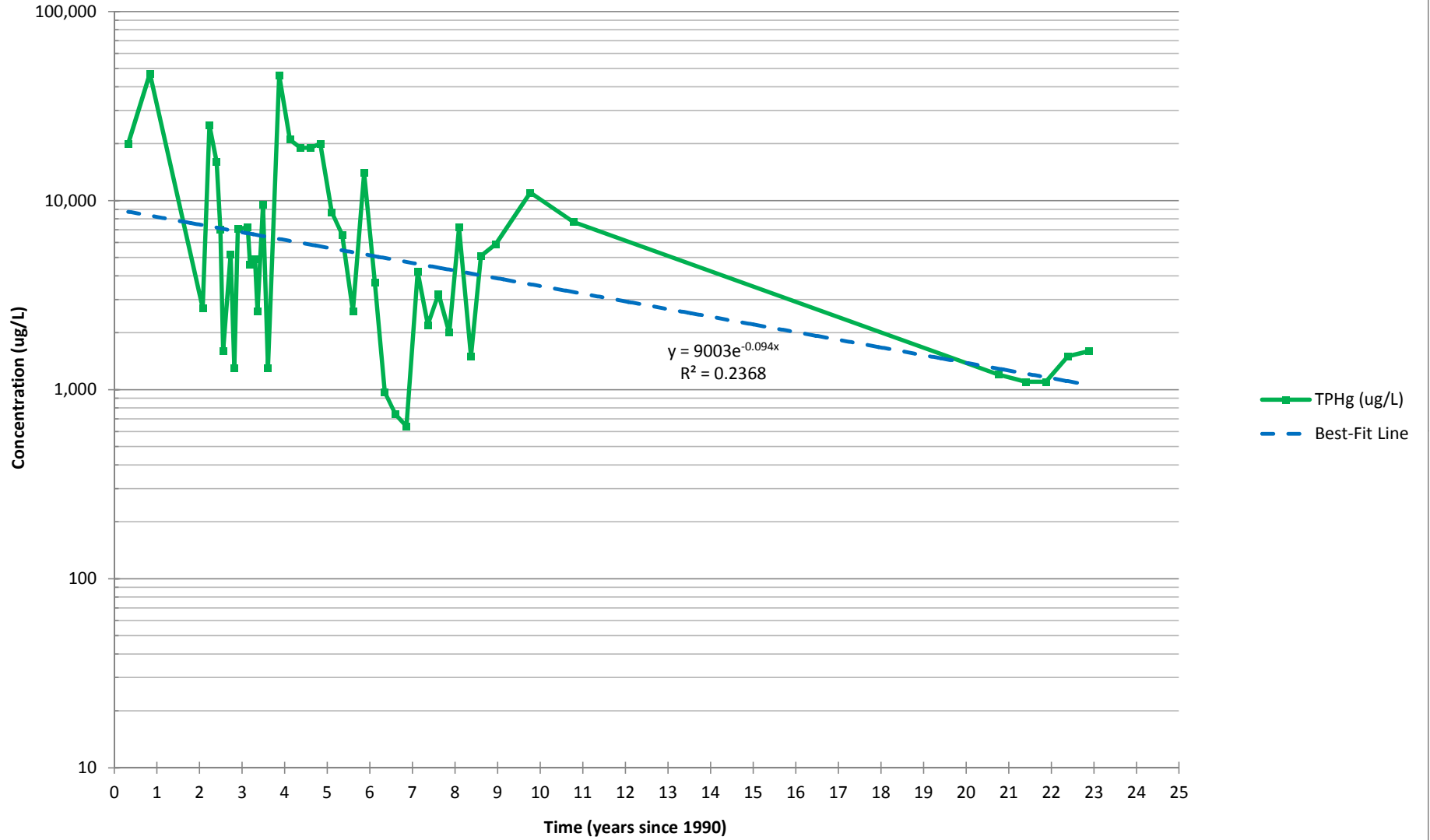
8/11/98	1,998.61	9.61	11000	9.306
12/17/98	1,998.96	9.96	14000	9.547
10/7/99	1,999.76	10.76	11000	9.306
10/7/00	2,000.77	11.77	16000	9.680
10/7/10	2,010.77	21.77	6100	8.716
5/26/11	2,011.40	22.40	1900	7.550
11/17/11	2,011.88	22.88	2400	7.783
5/23/12	2,012.39	23.39	2000	7.601
11/21/2012	2,012.89	23.89	2700	7.901

$$t = \frac{-\ln \left[\frac{C_{goal}}{C_{start}} \right]}{K_{point}}$$

Reference: USEPA, 2002. *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*. EPA/540/S-02/500, November.

<u>Notes</u>	<u>t</u>	<u>t (Units)</u>	<u>Cgoal</u>	<u>Cstart</u>	<u>Kpoint</u>	<u>t (years from 2013)</u>	<u>Cgoal Date</u>
ESL	41.4	Years since 1989	100	47426	0.149	17.4	2030

C4. Concentration Trend and Point Decay Rate Constant (k_{point}) Calculation
EW-1 - TPHg
1650 65th Street
Emeryville, California



Attenuation Rate Calculation Worksheet for EW-1 - TPHg

1650 65th Street
Emeryville, California

<u>Sample Date</u>	<u>Year (numeric)</u>	<u>Year (t=0)</u>	<u>TPHg (ug/L)</u>	<u>Nat. Log TPHg</u>
05/01/90	1,990.33	0.33	20000	9.903
11/01/90	1,990.83	0.83	47000	10.758
01/29/92	1,992.08	2.08	2700	7.901
03/26/92	1,992.23	2.23	25000	10.127
05/28/92	1,992.41	2.41	16000	9.680
06/29/92	1,992.49	2.49	7000	8.854
07/21/92	1,992.55	2.55	1600	7.378
09/23/92	1,992.73	2.73	5200	8.556
10/27/92	1,992.82	2.82	1300	7.170
11/24/92	1,992.90	2.90	7100	8.868
02/18/93	1,993.13	3.13	7200	8.882
03/09/93	1,993.19	3.19	4600	8.434
04/21/93	1,993.30	3.30	4900	8.497
05/13/93	1,993.36	3.36	2600	7.863
06/28/93	1,993.49	3.49	9500	9.159
08/11/93	1,993.61	3.61	1300	7.170
11/15/93	1,993.87	3.87	46000	10.736
02/14/94	1,994.12	4.12	21000	9.952
05/16/94	1,994.37	4.37	19000	9.852
08/10/94	1,994.61	4.61	19000	9.852
11/03/94	1,994.84	4.84	20000	9.903
02/09/95	1,995.11	5.11	8700	9.071
05/09/95	1,995.35	5.35	6600	8.795
08/10/95	1,995.61	5.61	2600	7.863
11/13/95	1,995.87	5.87	14000	9.547
02/13/96	1,996.12	6.12	3700	8.216
05/09/96	1,996.35	6.35	970	6.877
08/08/96	1,996.60	6.60	740	6.607
11/11/96	1,996.86	6.86	640	6.461
02/14/97	1,997.12	7.12	4200	8.343
05/14/97	1,997.37	7.37	2200	7.696
08/12/97	1,997.61	7.61	3200	8.071
11/12/97	1,997.86	7.86	2000	7.601
02/04/98	1,998.09	8.09	7200	8.882
05/18/98	1,998.38	8.38	1500	7.313

08/11/98	1,998.61	8.61	5100	8.537
12/17/98	1,998.96	8.96	5900	8.683
10/07/99	1,999.76	9.76	11000	9.306
10/12/00	2,000.78	10.78	7700	8.949
10/07/10	2,010.77	20.77	1200	7.090
05/26/11	2,011.40	21.40	1100	7.003
11/17/11	2,011.88	21.88	1100	7.003
05/23/12	2,012.39	22.39	1500	7.313
11/21/12	2,012.89	22.89	1600	7.378

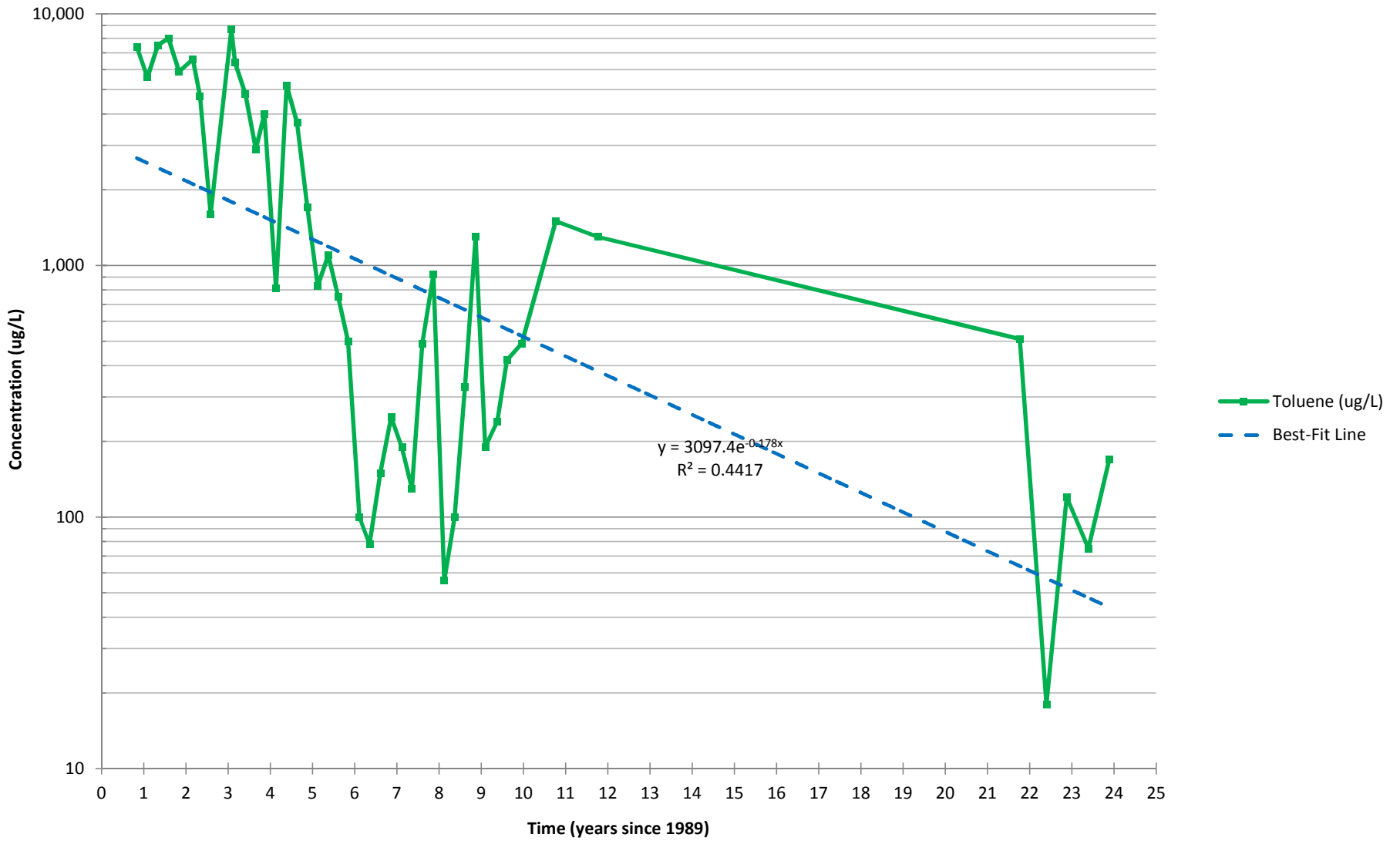
$$t = \frac{-\ln \left[\frac{C_{goal}}{C_{start}} \right]}{K_{point}}$$

Reference: USEPA, 2002. *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*. EPA/540/S-02/500, November.

<u>Notes</u>	<u>t</u>	<u>t (Units)</u>	<u>Cgoal</u>	<u>Cstart</u>	<u>Kpoint</u>	<u>t (years from 2013)</u>	<u>Cgoal Date</u>
ESL	47.9	Years since 1990	100	9003	0.094	24.9	2038

C5. Concentration Trend and Point Decay Rate Constant (k_{point}) Calculation

MW-2 - Toluene
1650 65th Street
Emeryville, California



Attenuation Rate Calculation Worksheet for MW-2 - Toluene

1650 65th Street
Emeryville, California

<u>Sample Date</u>	<u>Year (numeric)</u>	<u>Year (t=0)</u>	<u>Toluene (ug/L)</u>	<u>Nat. Log Toluene</u>
11/1/89	1,989.83	0.83	7400	8.909
2/1/90	1,990.09	1.09	5600	8.631
5/1/90	1,990.33	1.33	7500	8.923
8/1/90	1,990.58	1.58	8000	8.987
11/1/90	1,990.83	1.83	5900	8.683
3/1/91	1,991.16	2.16	6600	8.795
5/1/91	1,991.33	2.33	4700	8.455
8/1/91	1,991.58	2.58	1600	7.378
1/29/92	1,992.08	3.08	8700	9.071
2/28/92	1,992.16	3.16	6400	8.764
5/28/92	1,992.41	3.41	4800	8.476
8/27/92	1,992.65	3.65	2900	7.972
11/10/92	1,992.86	3.86	4000	8.294
2/18/93	1,993.13	4.13	810	6.697
5/20/93	1,993.38	4.38	5200	8.556
8/19/93	1,993.63	4.63	3700	8.216
11/15/93	1,993.87	4.87	1700	7.438
2/14/94	1,994.12	5.12	830	6.721
5/16/94	1,994.37	5.37	1100	7.003
8/10/94	1,994.61	5.61	750	6.620
11/3/94	1,994.84	5.84	500	6.215
2/9/95	1,995.11	6.11	100	4.605
5/9/95	1,995.35	6.35	78	4.357
8/10/95	1,995.61	6.61	150	5.011
11/13/95	1,995.87	6.87	250	5.521
2/13/96	1,996.12	7.12	190	5.247
5/9/96	1,996.35	7.35	130	4.868
8/8/96	1,996.60	7.60	490	6.194
11/11/96	1,996.86	7.86	920	6.824
2/14/97	1,997.12	8.12	56	4.025
5/14/97	1,997.37	8.37	100	4.605
8/12/97	1,997.61	8.61	330	5.799
11/12/97	1,997.86	8.86	1300	7.170
2/4/98	1,998.09	9.09	190	5.247
5/18/98	1,998.38	9.38	240	5.481

8/11/98	1,998.61	9.61	420	6.040
12/17/98	1,998.96	9.96	490	6.194
10/7/99	1,999.76	10.76	1500	7.313
10/7/00	2,000.77	11.77	1300	7.170
10/7/10	2,010.77	21.77	510	6.234
5/26/11	2,011.40	22.40	18	2.890
11/17/11	2,011.88	22.88	120	4.787
5/23/12	2,012.39	23.39	75	4.317
11/21/2012	2,012.89	23.89	170	5.136

$$t = \frac{-\ln \left[\frac{C_{goal}}{C_{start}} \right]}{K_{point}}$$

Reference: USEPA, 2002. *Ground Water Issue, Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies*. EPA/540/S-02/500, November.

<u>Notes</u>	<u>t</u>	<u>t (Units)</u>	<u>Cgoal</u>	<u>Cstart</u>	<u>Kpoint</u>	<u>t (years from 2013)</u>	<u>Cgoal Date</u>
CA MCL	17.0	Years since 1989	150	3097	0.178	-7.0	2006
ESL VI	-19.2	Years since 1989	95000	3097	0.178	-43.2	1970

DISTRIBUTION

**SITE CONCEPTUAL MODEL
1650 65TH STREET
EMERYVILLE, CALIFORNIA
Fuel Leak Case No. RO0000440
Geotracker Global ID T0600100511**

MAY 22, 2013

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